

National Park Service
U.S. Department of the Interior

Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
Colorado



Wilderness and Backcountry Management Plan Environmental Assessment

August 2011



**WILDERNESS AND BACKCOUNTRY MANAGEMENT PLAN
ENVIRONMENTAL ASSESSMENT**



National Park Service

**Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
Colorado**

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Summary

This Wilderness and Backcountry Management Plan (the Plan) and Environmental Assessment provide direction for the National Park Service (NPS) to preserve natural and undeveloped lands in Black Canyon National Park (NP) and Curecanti National Recreation Area (NRA), including the designated wilderness within Black Canyon NP. The purpose of this Plan is to provide an integrated framework for decision making for the stewardship of wilderness and backcountry lands of Black Canyon NP and Curecanti NRA. The Black Canyon NP wilderness possesses unique character and opportunities that could substantially erode without the foresight of good planning and future management. The backcountry land base of Curecanti NRA has been overshadowed by attention to water-based recreation. There are unrealized opportunities to improve land-based natural and cultural resource conditions and visitor experiences

This Plan is needed because underlying trends, if not addressed in planning and management strategies, could result in establishment of incompatible uses and entrenched harmful practices, which in turn could impact natural resources, quality visitor opportunities, and wilderness character. Because this Plan addresses backcountry and wilderness in Black Canyon NP and Curecanti NRA, the proposed action offers a spectrum of wilderness and backcountry opportunities throughout both units. The Plan is very proactive in preserving the unique wilderness qualities of the inner Black Canyon. This Plan includes the results of a wilderness eligibility assessment of undeveloped land within Black Canyon NP for possible inclusion in the national wilderness preservation system.

The environmental assessment analyzes the environmental impacts of the no-action (no plan) alternative and the preferred alternative, which is a comprehensive plan for wilderness and backcountry management that is based on maintaining or improving wilderness and backcountry qualities in Black Canyon NP and maintaining and improving the backcountry qualities in Curecanti NRA. This environmental assessment has been prepared in accordance with the National Environmental Policy Act of 1969, as amended; the regulations of the Council on Environmental Quality (40 *Code of Federal Regulations* 1508.9); NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision making*; the National Historic Preservation Act of 1966, as amended; and the Endangered Species Act of 1973, as amended.

The preferred alternative would have no impacts on geological and paleontological resources; floodplains; prime and unique farmlands; ecologically critical areas and unique natural areas; hydrology and water quality; air quality; socioeconomics; land use; environmental justice; cultural landscapes; historic buildings, structures, and districts; archeological resources; museum collections; ethnographic resources; Indian trust responsibilities; landscapes and dark skies; scenic resources; soundscapes; climate change; or energy requirements and conservation potential.

The preferred alternative would have short- and long-term negligible to minor adverse and beneficial impacts to soils, wildlife and habitat, upland vegetation, wetland and riparian communities, and threatened and endangered species and habitat in Black Canyon NP and Curecanti NRA. There would be short- and long-term negligible beneficial and minor adverse impacts to National Park Service operations. There

SUMMARY

would be short- and long-term minor to moderate beneficial impacts to promoting backcountry and wilderness visitor use at Black Canyon NP and Curecanti NRA. Finally, there would be short- and long-term negligible to moderate beneficial and short- and long-term negligible to minor adverse impacts to wilderness characteristics in Black Canyon NP and backcountry characteristics in Curecanti NRA.

Connie Rudd, Superintendent
Black Canyon of the Gunnison National Park / Curecanti National Recreation Area

Note to Reviewers and Respondents

If you wish to comment on the environmental assessment, please visit the NPS Web site below, or you may mail or e-mail comments to the address below. Our practice is to make all public comments available for public review. Individual respondents may request that we withhold their name and/or home address from the record, which we will honor to the extent allowable by law. *If you want us to withhold your name and/or address, you must state this prominently at the beginning of your comment.* We will make all submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

Comment on the NPS Planning, Environment, and Public Comment Web site:

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Under “Projects with Documents Open for Comment,” look for
Black Canyon of the Gunnison National Park... Wilderness and Backcountry
Management Plan / Environmental Assessment

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ACRONYMS AND ABBREVIATIONS

Aspinall Unit	Wayne N. Aspinall Storage Unit
B.A.S.E.	Buildings, Antennae, Spans, Earth
Black Canyon NP	Black Canyon of the Gunnison National Park
BLM	U.S. Bureau of Land Management
BOR	U.S. Bureau of Reclamation
CDOW	Colorado Division of Wildlife
CFR	Code of Federal Regulations
cm	Centimeter(s)
Curecanti NRA	Curecanti National Recreation Area
°C	Degrees Celsius
°F	Degrees Fahrenheit
EPMP	East Portal-Morrow Point
ft	Foot/Feet
km	Kilometer(s)
m	Meter(s)
MRDG	Minimum Requirements Decision Guide
NEPA	National Environmental Policy Act of 1969, as amended
NPS	National Park Service
national register	National Register of Historic Places
SHPO	State Historic Preservation Office(r)
TES	Threatened, Endangered, and Species of Special Concern
the Plan	Wilderness and Backcountry Management Plan
USC	United States Code
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service

ACRONYMS AND ABBREVIATIONS

Chapter 1: Purpose and Need

Black Canyon of the Gunnison National Park

Inner Canyon Zone

Desired Conditions-

wild

natural

rugged

remote

adventuresome

challenging

self-reliance



CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

Black Canyon of the Gunnison National Park (Black Canyon NP) and Curecanti National Recreation Area (Curecanti NRA) are situated between Gunnison and Montrose, Colorado (figure 1). Black Canyon National Monument was established by Presidential Proclamation 2033, signed by President Herbert Hoover on March 2, 1933, and was subsequently designated a national park through an act of Congress in 1999. Curecanti NRA was established in 1965 to manage the waters and federal lands around Blue Mesa, Morrow Point, and Crystal reservoirs.



FIGURE 1. BLACK CANYON NP AND CURECANTI NRA AREA MAP

This Wilderness and Backcountry Management Plan (the Plan) and Environmental Assessment provide direction for the National Park Service (NPS) to preserve natural and undeveloped lands in these two units of the national park system, including designated wilderness within Black Canyon NP. The Plan provides guidance for managing natural and cultural resources, while providing opportunities for a primitive type of recreational experience, both in wilderness and nonwilderness areas. Wilderness lands are managed to preserve wilderness character and meet the purposes of the Wilderness Act of 1964. This Plan reflects the results of a wilderness

eligibility assessment of undeveloped land within Black Canyon NP for possible inclusion in the national wilderness preservation system.

The environmental assessment analyzes the preferred alternative and other alternatives and their potential impacts on the environment. It has been prepared in accordance with the National Environmental Policy Act of 1969, as amended (NEPA); the regulations of the Council on Environmental Quality (40 *Code of Federal Regulations* [CFR] 1508.9); NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*; the National Historic Preservation Act of 1966, as amended (NHPA); and the Endangered Species Act of 1973, as amended.

Areas excluded from this Plan include the developed, or frontcountry areas defined as areas including roads, visitor centers, marinas and boat ramps, parking lots, scenic overlooks with associated turnouts and trails, picnic areas, and a 100-foot buffer zone around the frontcountry and developed areas. The backcountry includes some campsites, which are addressed in this Plan. This Plan does not address water-based recreation on the reservoirs.

BACKGROUND

Black Canyon of the Gunnison National Monument was established by Presidential Proclamation 2033 “for the preservation of its spectacular gorges and additional features of scenic, scientific, and educational interest.” In 1976, Congress enacted Public Law 94-567, which recognized the canyon’s wild and undeveloped qualities and designated 11,180 acres of Black Canyon of the Gunnison National Monument as Black Canyon Wilderness Area in accordance with the legislation (appendix A).

Congress subsequently redesignated the monument a national park through enactment of Public Law 106-76 in October 1999. That law also expanded the park’s boundaries, including an additional 4,419 acres of wilderness, recognizing that Black Canyon NP and adjacent lands include, among other values:

- Unique ecological, geological, scenic, historical, and wildlife components enhanced by the serenity and rural western setting of the area.
- Extensive opportunities for educational, and public recreational activities such as hiking, camping, and fishing, and for wilderness values, including solitude.
- Benefits of designating public and private land surrounding the national monument as a national park include greater long-term protection of the resources and expanded visitor use opportunities.

Today, Black Canyon NP includes 30,750 acres, of which 15,599 acres (50%) are designated wilderness. An additional 8,447 acres have been determined to be eligible or potentially eligible for full wilderness study (appendix B) and are presently managed to protect wilderness character until the legislative process is complete, in accordance with NPS *Management Policies 2006*.

The adjacent Curecanti NRA is approximately 40 miles in length and encompasses 41,255 acres of federal lands and waters. Curecanti NRA is managed by the National Park Service through a 1965 memorandum of agreement between the U.S. Bureau of Reclamation (BOR) and the National Park Service and pursuant to public law, including the Colorado River Storage Project Act of 1956. Through the agreement, the National Park Service manages recreation and other resources on federal land withdrawn for project purposes. However, the Bureau of Reclamation maintains management of the actual water storage and hydroelectric operations. As most of the lands continue to be withdrawn for BOR project purposes, Curecanti NRA has not been studied for possible inclusion in the national wilderness preservation system.

BACKCOUNTRY AND WILDERNESS PLANNING

This Plan addresses both the backcountry and wilderness lands within the two units. Although, the terms “backcountry” and “wilderness” may appear to refer similarly to undeveloped lands, there are important legal differences in terms of management. These distinctions include:

- The backcountry offers a natural setting for a variety of recreational activities including hiking, horseback riding, camping, and possibly mechanized transport and motorized uses if determined necessary and appropriate, and is supported by modest facilities that fit with the natural setting including trails, shelters, and toilets.
- Wilderness is designated by Congress on federal lands, including national parks:

Sec. 2. (a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose, there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as “wilderness areas,” and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as “wilderness areas” except as provided for in this Act or by a subsequent Act.

Sec. 2.(c) A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been

affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Excerpts from The Wilderness Act of 1964

Wilderness and backcountry both provide outstanding settings for activities such as hiking, horseback riding, camping, climbing, and fishing, but in wilderness there are no motorized vehicles, mechanized transport, and there are only the most minimal facilities such as trails. The Wilderness Act directs managers to preserve wilderness character.

The land identified as suitable for further study in the Wilderness Eligibility Assessment for Black Canyon NP (appendix B) would be managed to preserve wilderness character until the wilderness study and legislative process is complete. In this Plan, the term wilderness includes both designated and eligible wilderness lands.

Wilderness is administered “for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and to provide for the protection of these areas and the preservation of their wilderness character (sec. 2(a) 1964 Wilderness Act).” Wording in the Wilderness Act is similar to the NPS Organic Act, but differs in specifying lands to be left unimpaired *as wilderness*, a higher standard of protection than backcountry. The Wilderness Act charges agencies managing wilderness, in this case the National Park Service, to preserve wilderness character.

The framework of this Plan is founded on defining wilderness character for Black Canyon of the Gunnison Wilderness and eligible wilderness lands and backcountry character for nonwilderness in Black Canyon NP and in Curecanti NRA. Character is the core quality that captures the intent of Congress in park and wilderness legislation, and the unique aspects of these areas for consideration in planning and management.

Identifying wilderness character and developing a framework for monitoring it is central to meeting the wilderness-related goals and objectives of this Plan. The principle tool for developing the framework is *Keeping it Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System*. This interagency guidance interprets the congressional intent of the concept of wilderness character in the 1964 Wilderness Act to identify four qualities that are relevant and practical to wilderness stewardship. Briefly, the planning team describes each of the wilderness qualities that comprise wilderness character and determines if the quality is improving, stable, or diminishing. The planning team then describes the future desired conditions for each quality. Next, the planning team develops indicators and measures to track conditions to assess progress at attaining desired conditions and preserving wilderness character. From the indicators and measures, the planning team develops standards (management decisions on the minimum acceptable condition for measures), which would be used as triggers for management strategies and actions to maintain or restore desired conditions.

Wilderness Character

Wilderness character is described as having four necessary and interrelated qualities: untrammeled, natural, undeveloped, and solitude or primitive and unconfined recreation (USDA 2008). Together, the four qualities comprise an integrated ecological and social system of wilderness, as follows:

1. *Untrammeled*—The Wilderness Act describes wilderness as “an area where the earth and its community of life are untrammeled by man,” and “generally appears to have been affected primarily by the forces of nature.” In short, wilderness is essentially unhindered and free from modern human control or manipulation, unrestrained and evoking humility. This quality is degraded by modern human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness.
2. *Natural*—The Wilderness Act describes wilderness as “protected and managed so as to preserve its natural conditions.” In short, wilderness ecological systems are substantially free from the effects of modern civilization. This quality is degraded by intended or unintended effects of people on the ecological systems inside the wilderness since the area was designated.
3. *Undeveloped*—The Wilderness Act states that wilderness is “an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation,” “...where man himself is a visitor who does not remain” and “with the imprint of man’s work substantially unnoticeable.” This quality is degraded by the presence of structures, installations, habitations, and by the use of motor vehicles, motorized equipment, or mechanical transport that increases the ability of people to occupy or modify the environment.
4. *Solitude or a primitive and unconfined type of recreation*—The Wilderness Act states that wilderness has “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” This quality is about the *opportunity* for people to experience wilderness; it is not directly about visitor experiences per se. This quality is degraded by settings that reduce these opportunities, including visitor encounters, signs of modern civilization, recreation facilities, and management restrictions on visitor behavior.

Wilderness character is more than the sum of its parts. Together, these four qualities comprise an approximation of wilderness character for wilderness planning and stewardship.

Backcountry Character

The National Park Service applies the term “backcountry” to primitive, more natural, and relatively undeveloped portions of national parks. Lands that are not highly developed with roads, parking lots, overlooks, vehicle campgrounds, and visitor centers are considered the backcountry. The backcountry is managed under the NPS Organic Act to provide for the use and enjoyment of visitors while preserving resources unimpaired, and managed to achieve NPS policies and the intent of the general management plan. While there are similarities between

backcountry and wilderness, backcountry allows more management discretion than the more stringent legal protection of wilderness.

This Plan identifies the character of the nonwilderness backcountry of Black Canyon NP and Curecanti NRA as a cornerstone for understanding current conditions and trends, and for identifying desired conditions and actions or strategies to achieve those conditions.

Backcountry character (nonwilderness) exhibits three qualities described as follows:

1. Backcountry Natural Resources: NPS management polices state that the term “natural resources” includes natural resources, processes, and values, and the “natural condition” is the condition that would occur in the absence of human domination of the landscape.
2. Backcountry Undeveloped: The general management plan prescribes the nonwilderness backcountry as a predominantly natural-appearing landscape, although evidence of facilities that blend with the surroundings may be present.
3. Backcountry Visitor Opportunities: The general management plan prescribes that the nonwilderness backcountry offer visitors an experience that is predominantly isolated from human-made sights and sounds. Visitors can experience a feeling of closeness with nature and there are opportunities to experience solitude, tranquility, and quiet because interactions with others are few. A high degree of challenge, self-reliance, and risk is prevalent for visitors, and knowledge and use of outdoor survival and wilderness skills are highly recommended. The Plan allows recreational development to include trails and routes, minimal signs, campsites (picnic tables, fire grates, tent pads), and vault toilets.

Together, these three qualities comprise an approximation of backcountry character for planning and stewardship purposes.

CURRENT WILDERNESS AND BACKCOUNTRY CHARACTER AND TRENDS

Current Wilderness and Backcountry Character and Trends in Black Canyon of the Gunnison National Park

The Gunnison River moves sediments with enough force to erode through volcanic, sedimentary, and eventually harder, older Precambrian crystalline rocks. When the waters reached the metamorphic and volcanic Precambrian rocks two million years ago, the river began carving the dramatic walls of the dark, half-mile-deep canyon. The narrow, nearly vertical canyon walls inspire awe in visitors viewing the chasm from the rim. Ledges on the canyon walls support nests of peregrine falcons (*Falco peregrinus*), common ravens (*Corvus corax*), and canyon wrens (*Catherpes mexicanus*), among other wildlife species. Rocky Mountain bighorn sheep (*Ovis canadensis*) forage above and below the rim, and the adjacent uplands support American black bear (*Ursus americanus*), elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and coyote (*Canis latrans*), in addition to several raptor and passerine bird species. Along the river, American dippers (*Cinclus mexicanus*) bob for aquatic insects, larvae, and fish eggs; controlled flows of outstandingly clean water provide habitat for the species-rich aquatic life, including stoneflies (Order Plecoptera) and rainbow trout (*Oncorhynchus mykiss*) that

entice adventurous anglers to the canyon bottom for unparalleled fly-fishing experiences. Climbers are drawn to the challenges of scaling the vertical and beautiful walls of hard Precambrian rock using traditional methods. Between the high, steep, narrow walls of the canyon, the continuous roar of the river, accentuated by the wind, predominates. The duration of sunlight to the canyon bottom is relatively short in a given day. This deep, narrow canyon environment is primarily influenced by natural forces (flows and sediment transport are altered by upstream dams), and shows little visual influence of modern humanity. Vertical separation within the canyon offers isolation and remoteness while protecting habitats and ecological systems.

The uplands within Black Canyon NP, both wilderness and backcountry nonwilderness, include woodlands characterized by pinyon pine (*Pinus edulis*), Douglas-fir (*Pseudotsuga menziesii*), and juniper (*Juniperus* spp.) trees. Open stands of Gambel oak (*Quercus gambelii*), Utah serviceberry (*Amelanchier utahensis*), and big sagebrush (*Artemisia tridentata*) provide habitat for the Gunnison sage-grouse (*Centrocercus minimus*) (a federal candidate species to be listed under the Endangered Species Act), red-tailed hawks (*Buteo jamaicensis*), turkey vultures (*Cathartes aura*), common ravens, great horned owls (*Bubo virginianus*), a variety of passerine birds and small mammals, and American black bear, elk, and mule deer. Expansive vistas during the day are exchanged for wide open, star-filled night skies offering serenity to visitors.

The overall untrammelled quality of the Black Canyon of the Gunnison Wilderness is considered exceptional. Natural processes predominate, and there are few actions that control or manipulate the earth processes within the wilderness. There are some actions taken by the National Park Service to improve the natural condition, including monitoring elk, controlling nonnative plants, and responding to wildfires according to the fire management plan. These types of management actions slightly diminish the untrammelled quality.

The overall natural quality of Black Canyon of the Gunnison Wilderness is considered outstanding. There are several native plant and animal communities, including species that are proposed or listed as threatened or endangered, sensitive, or of concern. Authorized livestock grazing in the uplands alters the composition of natural communities. The water quality is good, as is regional air quality. Black Canyon NP is adjacent to other federally managed land and relatively undeveloped private land, providing a larger protected landscape that connects critical wildlife habitat.

The Black Canyon of the Gunnison Wilderness is relatively undeveloped overall. A few structures diminish the undeveloped quality, including fences, stock ponds, a radio repeater, abandoned roads (mostly unpaved two-tracks), an irrigation ditch, and other structures related to livestock grazing. The uplands have experienced some authorized and unauthorized use of motorized transport and equipment in wilderness, which detract from the undeveloped character. While Black Canyon NP strives to apply the *Minimum Requirements Decision Guide* (MRDG) process to administrative actions, there is occasional use of chainsaws and motorized vehicles for vegetation and wildlife management in the uplands, and helicopters in the rugged terrain of the inner canyon for emergency rescues and resource management. The rugged terrain of the inner canyon has precluded most past and current developments.

Providing opportunities for solitude or primitive and unconfined recreation abound in the inner canyon and the uplands. The inner canyon attracts many visitors who drive the rim roads and

photograph the views into and across the canyon. Gold Medal Waters attract anglers that hike into the rugged canyon, particularly during the annual stonefly hatch in June and July. Most of the hiking routes into the canyon are constrained by steep terrain and colluvial slopes; they are mostly rocky, some with highly eroded gullies, have few signs, and are lightly maintained. There is currently a permit system with a fixed number of permits available for entering the inner canyon. With the exception of the Red Rock Canyon area access, most visitors are accommodated. Within the canyon, campers select from unoccupied sites. No fires are permitted; however, illegal fire rings, caches of camping gear, and ad-hoc camp furniture are often discovered and dismantled or removed. Two composting toilets serve users of popular hiking routes, although human waste proliferation represents an important management concern.

Black Canyon NP includes unique and exceptional backcountry and wilderness resources and character, which may change over time. The untrammled quality of the wilderness is presently very high, with the overall trend toward more pressure to take management actions in the face of climate change that may make the wilderness less wild. The trend for the natural quality of wilderness is relatively stable, as ecosystems are protected and improved through programs like invasive plant removal. The undeveloped quality of the canyon is not likely to change or may even be improved over time as unnecessary structures are removed. There are likely to continue to be wonderful opportunities for solitude and primitive and unconfined recreation because of access management, but some aspects such as dark night skies and soundscapes are likely to be diminished over time from increasing regional development and urbanization.

Current Backcountry Character and Trends in Curecanti National Recreation Area

Rugged and semiarid mesas, cliffs, slopes, canyons, and the valley bottom with narrow, long reservoirs exist in a setting between the West Elk Mountains and the San Juan Mountains, offering dramatic vistas. Pinnacles and needles eroded from mesa tops and cliff faces exemplify a history of volcanic activity. A variety of wildlife, including bald eagles (*Haliaeetus leucocephalus*), waterfowl, migrant passerine birds, Rocky Mountain bighorn sheep, American black bear, elk, mule deer, and coyotes use the upland and reservoir habitats of Curecanti NRA seasonally and year-round, depending on the species. Archeologists have uncovered the remains of ancient shelter structures called wickiups that, along with diagnostic stone tools and other artifacts, indicate human occupation for thousands of years. Exposed rock faces and slopes of the Morrow Point and Crystal reservoirs provide secluded locations for climbing, hiking, and camping. Boaters on Blue Mesa Reservoir seek secluded landings for remote camping. Other activities in the backcountry of Curecanti NRA include hiking, horseback riding, fishing, water sports, nature viewing, and cross-country skiing. A few selected facilities support these activities (trails, toilets, and backcountry campgrounds), which provide an experience of solitude, quiet, and the natural environment as identified in the general management plan. Much of Curecanti NRA offers solitude and silence in the canyons and on the ridges and mesas. Some motorized access is allowed on specific routes, which are being addressed in a separate motorized access plan.

The overall natural quality of Curecanti NRA backcountry is considered excellent. A major difference between the natural quality of backcountry in Curecanti NRA is that through the East

Portal-Morrow Point (EPMP) and Blue Mesa areas, the Gunnison River is impounded by dams, resulting in a less natural condition than Black Canyon NP wilderness.

Curecanti NRA backcountry has a number of minor developments. NPS radio repeaters and regional powerlines cross the backcountry, primarily in the Blue Mesa area. Additionally, a number of other structures related to grazing, including stock ponds, two-track dirt roads, irrigation development, and fences, exist.

Unlike wilderness, the administrative use of motor vehicles, motorized equipment, or mechanical transport is allowed.

Backcountry visitor opportunities are similar to wilderness, but there is less emphasis on opportunities for solitude and more allowable recreation facilities in support of semi-primitive experiences. No permits are required for land-based recreation in the EPMP and Blue Mesa areas and there is a lack of information about use levels and demand for hiking, camping, fishing, and other land-based activities. Night sky visibility in the backcountry is good, but not exceptional, because of surrounding development.

Most visitors view the lands between the Blue Mesa Dam site and the boundary of Black Canyon NP from overlooks on the canyon rims and a few hiking trails, most of which are steep and challenging. Campsites with picnic tables, tent pads, and vault toilets exist on the reservoir shoreline; some visitors hike down for overnight camping. A few visitors hike to the reservoir shoreline to fish and some carry light boats to the reservoir. Except for boat tours and motorized access adjacent to Cimarron, the soundscape in the EPMP backcountry is largely natural. The overall experience is remote and natural in an isolated canyon.

Most visitors to Blue Mesa Reservoir recreate using motorized watercraft and use the shoreline for fishing, picnicking, swimming, and camping. There are boat-in campsites with vault toilets, tent pads, and picnic tables. Visitors are allowed to camp below the high waterline on the south shore of Blue Mesa Reservoir and 0.5 mile from any developed road or area, including designated backcountry campsites. There are a few lightly used hiking trails (Dillon Pinnacles, Cooper Ranch, and Neversink); horseback riders are allowed on Dillon Pinnacles. A limited amount of rock climbing takes place in the Gunnison River Canyon of the Blue Mesa area; hang gliders and paragliders launch on adjacent Bureau of Land Management (BLM) lands, and sometimes illegally land on NPS land in Curecanti NRA. There is more motorized access than occurs at East Portal-Morrow Point, which is being addressed in a separate motorized access plan.

Natural soundscapes are affected by motorized access, boating on Blue Mesa Reservoir, and nearby development.

The overall trend for backcountry qualities is relatively stable. The natural quality of the backcountry is considered excellent, with increasing pressures of nonnative plants being offset by invasive plant removal. New water management structures could be proposed in the backcountry, which may be offset by removal of unnecessary structures. The overall trend for solitude and primitive recreation may decrease over time through increased visitor use.

PURPOSE AND NEED FOR THE PLAN

The purpose of this Wilderness and Backcountry Management Plan is to provide an integrated framework for decision making for the stewardship of wilderness and backcountry lands of Black Canyon NP and Curecanti NRA. This Plan is needed because underlying trends, if not addressed in planning and management strategies, could result in the establishment of incompatible uses and entrenched harmful practices, which in turn, could impact natural resources, quality visitor opportunities, and wilderness and backcountry character.

Black Canyon of the Gunnison NP and Curecanti NRA feature high-quality backcountry and wilderness resources and experiences. The Black Canyon of the Gunnison River gorge is an impressive canyon combining steepness, narrowness, ruggedness, color, and depth unique in North America. The wilderness of the canyon, canyon rims, and uplands has been recognized and preserved through proclamations and legislation, including designation and expansion of wilderness. The Black Canyon NP wilderness character is a unique combination of untrammeled (e.g., unrestrained, unrestricted), natural, undeveloped qualities and opportunities for solitude or a primitive and unconfined type of recreation, which could substantially change without the foresight of good planning and management. The rugged, vertical landscape offers unparalleled opportunities for self-reliance and challenge.

Concentrated visitor use within portions of the inner canyon (area below the canyon rims to the Gunnison River), require attention and planning to ensure that high-quality experiences and resources remain available for future generations. Within the inner canyon, human manipulation of the natural environment threatens the natural qualities of wilderness. Structures, including toilets, diminish the undeveloped quality of wilderness, while management actions detract from the untrammeled quality of wilderness.

Current management of Curecanti NRA is focused on water-based visitor activities (e.g., fishing, boating, sailing, wind surfing, waterskiing, etc.) and resources. The land area above the high water level of the three reservoirs (Blue Mesa, Morrow Point, Crystal) expresses distinct undeveloped character, natural conditions, and opportunities for backcountry visitor experiences. The terrain from East Portal to Morrow Point comprises a scenic, rugged canyon that is natural and remote. The area surrounding Blue Mesa Reservoir is undeveloped and an important scenic backdrop for boaters, campers, and travelers on U.S. Highway 50 (U.S. 50). There are unrealized opportunities to improve land-based natural and cultural resource conditions and visitor experiences.

Black Canyon NP and Curecanti NRA include high-quality backcountry and wilderness resources and experiences, with increasing pressure for some activities including climbing and fishing access into the inner canyon, and illegal buildings, antennae, spans, earth (B.A.S.E.) jumping. Potential expanded recreational opportunities require planning with the user public to ensure the future availability of high-quality experiences and resources.

GOALS AND OBJECTIVES OF THIS PLAN

The following goals and objectives identify what the Plan needs to address for long-term successful management and protection of the wilderness and backcountry.

Goals

1. Restore, protect, and enhance wilderness character in wilderness areas.
2. Provide and manage a range of visitor opportunities while protecting resource values and park purposes in wilderness and backcountry areas.
3. Enhance public understanding of the relevance of wilderness values and opportunities, and stewardship of the wilderness and backcountry areas.

Objectives

1. Evaluate existing conditions and management practices and define desired resource and social conditions in wilderness and nonwilderness backcountry areas, consistent with park purposes.
2. Provide a framework and programmatic guidance for consistent management direction of wilderness and backcountry areas.
3. Define the role of guiding/commercial services in wilderness and backcountry areas.
4. Provide guidance for implementing the MRDG process.
5. Provide a template for basing management decisions on sound scientific research and informed observation. Incorporate new data and information, as available, into a dynamic backcountry and wilderness management program.
6. Provide public information to promote backcountry skills and wilderness ethics.

RELATIONSHIP TO OTHER PLANS AND POLICIES

Current plans and policies that pertain to this Plan include the *Black Canyon and Curecanti General Management Plan* (NPS 1997), the *Black Canyon of the Gunnison Interim Climbing Management Plan*, superintendent's compendium, *Minimum Requirements Decision Guide*, wilderness eligibility assessment, *Curecanti Resource Protection Study*, fire management plan, *Black Canyon of the Gunnison National Park Resource Management Plan*, *Curecanti National Recreation Area Off-Highway Vehicle Evaluation and Interim Management Plan*, the Wilderness Act of 1964 (16 *United States Code* [USC] §§ 1131-1136, September 3, 1964, as amended 1978), NPS Director's Order 41: *Wilderness Preservation and Management*, and Black Canyon of the Gunnison Wilderness legislation. Additional relevant information about how this proposal meets the goals and objectives of these plans and policies is as follows:

General Management Plan

The Black Canyon and Curecanti general management plan was completed in 1997 and outlined management prescriptions to articulate how lands within the parks would be managed into the future. The management prescriptions direct administration of various geographic areas of Black Canyon NP and Curecanti NRA, addressing visitor opportunities, access, natural resources, cultural resources, facilities, and maintenance issues.

Minimum Requirements Decision Guide

The *Minimum Requirements Decision Guide*, revised in 2010, is designed to assist wilderness managers in making stewardship decisions. Park managers with designated and eligible wilderness must ensure full consideration of these other legal requirements. Applicable actions include, but are not limited to, scientific monitoring, research, recreational developments (trails, bridges, signs, etc.), and activities related to special provisions mandated by the Wilderness Act or subsequent legislation (such as livestock grazing, exercising mineral rights, access to inholdings, maintenance of water developments, and commercial services).

The *Minimum Requirements Decision Guide* defines a process to identify, analyze, and select management actions that are the minimum necessary for wilderness administration. It incorporates a two-step process. The first step determines whether administrative action is necessary. If action is found to be necessary, then the second step provides guidance for determining minimum activity. Step 2 has been referred to as determining the minimum tool, but could include any type of activity, method, or equipment (Arthur Carhart National Wilderness Training Center, *Minimum Requirements Decision Guide* Overview; <http://www.wilderness.net/index.cfm?fuse=MRDG>).

Superintendent's Compendium

The superintendent's compendium is a list of designations, closures, permit requirements, and other restrictions imposed under the discretion of the park superintendent as stated under Title 36 of the *Code of Federal Regulations*. In addition to the management zones, park managers would continue to use the superintendent's compendium to affect limitations or closures, as necessary, to protect resources, wilderness, and backcountry character.

Interim Climbing Management Plan

Climbing in Black Canyon inner canyon is managed according to the *Interim Climbing Management Plan* (NPS *Black Canyon of the Gunnison Interim Climbing Management Plan*, signed October 2004). This plan establishes the goals and describes the ethics for climbing in the inner canyon of Black Canyon NP. The inner canyon has long been identified as a traditional climbing area where use of climbing bolts is minimized, if they are used at all. The "Black" as it is known within the climbing community around the world, is one of the last refuges of a wilderness climbing experience. The goals of the *Interim Climbing Management Plan* include preserving natural resources (e.g., canyon walls, talus slopes, riparian and slope vegetation, etc.),

while providing recreational climbing activities, defining a set of regulations for climbing, and informing climbers and Black Canyon NP climbing rangers of the regulations. This climbing management plan has been revised and included for adoption within this Plan for Black Canyon NP and Curecanti NRA. The proposed climbing management plan is presented in appendix C.

Wilderness Eligibility Assessment

Undeveloped lands added to Black Canyon NP since the original Black Canyon of the Gunnison Wilderness designation in 1976, have recently been assessed for eligibility for wilderness study, in accordance with NPS *Management Policies 2006*. This assessment determined that an additional 8,447 acres are eligible or potentially eligible for full wilderness study and for possible inclusion in the national wilderness preservation system. These lands would be managed so that actions taken by the National Park Service would not diminish the wilderness eligibility of the lands possessing wilderness characteristics until the legislative process of wilderness designation has been completed, regardless of implementation of this Plan.

Curecanti Resource Protection Study

The *Curecanti NRA Resource Protection Study / Environmental Impact Statement* was completed in 2008; it was prepared by the National Park Service in cooperation with the U.S. Bureau of Reclamation. The study concluded with a recommendation that Congress legislatively establish Curecanti as a national recreation area with a new legislated boundary that includes approximately 10,040 acres of additional adjacent lands that are currently managed by other federal and state agencies (e.g., Bureau of Land Management, U.S. Forest Service [USFS], Colorado Division of Wildlife [CDOW], Colorado State Land Board). The 1965 memorandum of agreement between the Bureau of Reclamation and the National Park Service would be revised accordingly. Further, the Bureau of Reclamation would operate and maintain the dams, reservoirs, associated power plants and transmission lines, access roads, and related facilities within Curecanti NRA. The new Curecanti NRA legislation would designate the National Park Service to manage the natural, cultural, and recreational resources, visitor use and education, and associated facilities. Another recommendation is for Congress to authorize the National Park Service to work in partnership with private landowners in a designated Conservation Opportunity Area surrounding Curecanti NRA, and employ various management tools in the service of resource conservation.

Fire Management Plan

In 2006, the National Park Service developed a fire management plan for Black Canyon NP and Curecanti NRA. The plan established fire management units, and directed that fire management within each unit would be based on natural landscape conditions rather than on agency or other land management or ownership boundaries. Fire and fire management prescriptions would be allowed to cross Black Canyon NP and Curecanti NRA boundaries with the adjacent USFS and BLM lands when agreed to by both parties, as well as some designated adjacent private lands. Whenever possible, the National Park Service, Bureau of Land Management, and U.S. Forest Service would coordinate fire management actions. Various prescribed fire and fuels

management activities would be permitted in appropriate areas within Black Canyon NP and Curecanti NRA, including manual/mechanical treatment and prescribed fire to reduce fuel loading in identified fire management units. In addition, wildland fire use would be permitted in fire management units identified for managed wildland fire.

Black Canyon of the Gunnison National Park Resource Management Plan

The specific management objectives identified in the *Black Canyon of the Gunnison National Park Resource Management Plan* (NPS 1993) for the stewardship of park natural resources are, “to conserve the park’s ecological communities, geological resources, and scenic qualities, and to the degree possible, to restore areas disturbed by past human activities to the natural condition existing before disturbance. The concept of maintaining and perpetuating ecosystems rather than protecting and preserving individual features or favored species is, and must remain, a distinguishing aspect of natural resource management.”

A specific nonnative plant management plan does not currently exist for Black Canyon NP and Curecanti NRA; however, invasive species are managed as part of the Resource Management Plan because of three concerns: (1) effects to native plant communities and the wildlife that use them, (2) effects to natural river processes and aquatic and riparian resources, and (3) concerns for downriver agricultural producers regarding increased invasions of nonnative forbs and grasses into irrigated pastures and other farmland.

Curecanti National Recreation Area Off-Highway Vehicle Evaluation and Interim Management Plan

This interim management plan provides guidelines for motorized vehicle use and access on an interim basis until the *Curecanti National Recreation Area Motorized Vehicle Access Plan / Environmental Assessment* is completed and a federal rule is adopted, pursuant to the requirements of Executive Order 11644, as amended. The Motorized Vehicle Access Plan was released for public review in October 2010, and is nearing completion. The interim plan (2007) allows off-highway vehicles in certain areas and routes. Resources are protected by implementing off-highway vehicle closures pursuant to 36 CFR 1.5. The relationship of the interim plan, and the Motorized Vehicle Access Plan / Environmental Assessment, when completed and implemented, is that this Wilderness and Backcountry Management Plan would authorize bicycle use on routes authorized for use by off-highway vehicles in Curecanti NRA.

ISSUES AND OPPORTUNITIES

The following issues and opportunities were developed through internal and public scoping. They assist in the development of desired future conditions and strategies for this Plan.

Black Canyon of the Gunnison National Park Wilderness and Backcountry

- Evaluate and possibly modify the current permit system for the inner canyon.
- Evaluate options for managing campsites and adjust management of overnight use in the inner canyon – designation, hardening, accommodation of groups, continue to allow choice.
- Evaluate options for human waste management in the inner canyon – more toilets, remove toilets, move toward pack-it-in/pack-it-out (in combination with increased ranger contact and patrol), and increased education requirements with permit.
- Evaluate, adjust, and adopt the *Interim Climbing Management Plan* – hardware, safety, number of people, camping at base of popular routes, education and orientation required with permit, incorporate plan for backcountry.
- Evaluate and possibly modify opportunities for solitude or primitive and unconfined recreation in the uplands.
- Explore opportunities for additional recreational activities and trails.
- Evaluate allowing campfires in the inner canyon.
- Define the role of commercial services in wilderness and backcountry.
- Restore vegetation and soil from unauthorized disturbances including trespass motorcycle trails and grazing (includes finding alternative routes outside the wilderness boundary).
- Continue to implement nonnative species control and restore native vegetation.
- Continue to use natural and prescribed fire as a management tool.
- Evaluate options for route realignment or hardening to decrease erosion on access routes into the inner canyon.
- Restore Gunnison sage-grouse habitat.
- Evaluate and possibly modify the current permit system for the inner canyon.
- Evaluate and remove unnecessary structures, e.g., toilets, stock ponds, fencing, roads.
- Monitor rare plant communities and pursue interagency consultation and cooperation.
- Identify and monitor cultural resource sites.

Curecanti National Recreation Area Backcountry

- Evaluate opportunities to improve access and trails for hiking, horseback riding, and possibly mountain biking.
- Evaluate alternatives regarding underutilized camping in the East Portal-Morrow Point area.
- Resolve rock and ice climbing access, paragliding, and hang gliding landing.
- Define the role of commercial services in the backcountry.
- Restore Gunnison sage-grouse habitat.
- Monitor rare plant communities and pursue interagency consultation and cooperation.

- Identify and monitor cultural resource sites.
- Continue to implement nonnative species control and restore native vegetation.
- Continue to use natural and prescribed fire as a management tool.
- Restore past land-use impacts.
- Evaluate all nonrecreational structures in backcountry (National Park Service, others) and remove or relocate unnecessary structures.
- Adopt a climbing plan for Curecanti NRA.

SCOPING

Scoping is a process to involve agencies and the general public to:

- Determine which issues should be addressed in the environmental assessment.
- Determine important issues to be analyzed in detail and eliminate issues not requiring detailed analysis.
- Allocate assignments among the interdisciplinary team members and/or other participating agencies.
- Identify related projects and associated documents.
- Identify permits, surveys, consultations, etc., required by other agencies.
- Create a schedule that allows adequate time to prepare and distribute the environmental assessment for public review and comment before a final decision is made.

Early in the process, staff of Black Canyon NP and Curecanti NRA conducted internal scoping. Scoping involves all interested individuals; organizations; American Indian tribes; and local, state, and other federal agencies, including agencies with jurisdiction by law or expertise to provide early input. This interdisciplinary process defined the purpose and need for this Plan, identified potential actions to address the need, determined the likely issues and impact topics, and identified the relationship of the proposed action to other planning efforts for Black Canyon NP and Curecanti NRA.

External scoping was initiated in April 2010 with dissemination of a newsletter. Comments were solicited during the scoping period, which ended May 31, 2010. A total of 37 comment letters were received. A summary of the comments received is presented in the “Consultation and Coordination” section of this environmental assessment.

Through internal and external scoping, issues associated with proposed backcountry and wilderness management activities and impact topics were identified. The following section addresses impact topics.

IMPACT TOPICS

Specific impact topics were developed to focus discussion and to allow comparison of the environmental consequences of each alternative. The impact topics were identified based on federal law, regulations, executive orders, NPS *Management Policies 2006*, and NPS staff knowledge of special or vulnerable resources. The following two sections list the impact topics to be analyzed in detail in other chapters of this environmental assessment, as well as impact topics dismissed from further consideration and the rationale for dismissing these topics.

Impact Topics Retained For Further Analysis

Impact topics that are carried forward for further analysis in this environmental assessment include the following:

- soils
- wildlife
- vegetation
- wetlands
- threatened, endangered, and species of special concern
- Black Canyon NP/Curecanti NRA operations
- visitor use and experience
- wilderness and backcountry character

For each impact topic, the “Affected Environment” section describes the existing setting or baseline conditions within Black Canyon NP and Curecanti NRA. This information is then used to analyze impacts against the current condition of the topics carried forward in the “Environmental Consequences” section.

Impacts are described in terms of context and duration. The context or extent of the impact is described as localized or widespread. The duration of impacts is described as short term, ranging from days to three years in duration, or long term, extending up to 20 years or longer. The intensity and type of impact is described as negligible, minor, moderate, or major, and as beneficial or adverse. The National Park Service equates “major” effects as “significant” effects. The identification of “major” effects would require the need to prepare an environmental impact statement. Where the intensity of an impact could be described quantitatively, the numerical data is presented; however, most impact analyses are qualitative and use best professional judgment in making the assessment.

Impact Topics Dismissed From Detailed Assessment

In this section of the environmental assessment, the National Park Service provides a limited evaluation and explanation as to why some impact topics are not evaluated in more detail. Impact topics are dismissed from further evaluation in this environmental assessment if:

- They do not exist in the analysis area.
- They would not be affected by the proposal, or the likelihood of impacts are not reasonably expected.
- Through the application of mitigation measures, there would be minor or less effects (i.e., no measurable effect) from the proposal, and there is little controversy on the subject or reasons to otherwise include the topic.

Geologic and Paleontological Resources. The major reason for establishing Black Canyon NP was to protect the geologic exposures of the deep canyon and its associated rims and overlooks formed by the Gunnison River eroding through the sedimentary rock, and more impressively, the Precambrian gneiss and schist basement rock. Fourteen miles (22.5 kilometers [km]) of canyon is exposed within Black Canyon NP, approximately one-quarter of the entire 48-mile-long (77 km) Black Canyon. Prior to damming the Gunnison River in 1964, erosion through the Precambrian bedrock was estimated to occur at the rate of one inch per 100 years (NPS 2008). Such erosion into basement rock occurred because of the average rate of descent of water through the canyon at 43 feet (ft)/mile (8 meters [m]/kilometers [km]) and at Chasm View is 240 ft/mile (45 m/km). Depths attained through erosion are 2,722 ft (829 m) at Warner Point, 1,840 ft (561 m) at Gunnison Point, and 1,820 ft (555 m) at Chasm View (NPS 2008).

The Gunnison River has exposed a wide range of rock, from the 1.7-billion-year-old gneiss and schist of the Precambrian era to Mesozoic fossiliferous sedimentary rocks and Cenozoic volcanic rocks and modern unconsolidated sediments. Precambrian rocks are usually buried beneath overlying rock layers. Thus, the Black Canyon of the Gunnison is considered among the best exposures of these ancient rocks in North America.

A 2005 paleontological survey of portions of Black Canyon NP recorded 15 fossil localities. There are substantial outcrops of Jurassic- and Cretaceous-age rock on both the north and south sides of the river. Most localities contain trace fossils such as burrows, with some localities containing petrified wood deposits. There are more than 20 recorded localities in Curecanti NRA that contained fossils. Available documentation suggests at least two localities exhibited partial sauropod skeletons in Curecanti NRA (Frost 2011).

No changes in the geologic or paleontologic exposures would be expected as a result of actions related to the Plan. Therefore, this topic was dismissed from further analysis in this environmental assessment.

Floodplains. Executive Order 11988, “Floodplain Management” requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. Under NPS *Management Policies 2006* and Director’s Order 77-2: *Floodplain Management*, the National Park Service would strive to preserve floodplain values and minimize hazardous

floodplain conditions. Active floodplains on federal land within the study area are largely within the administrative area controlled by the Bureau of Reclamation for reservoir operations, and managed by Black Canyon NP and Curecanti NRA, and on other USFS-, BLM-, BOR-, or CDOW-managed lands. No federally initiated development is proposed on any of these federal or state lands that would impact floodplains. Therefore, floodplains have been dismissed from further analysis in this environmental assessment.

Prime and Unique Farmlands. The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to nonagricultural uses. Prime or unique farmland is classified by the U.S. Department of Agriculture's Natural Resources Conservation Service, and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; or unique farmland that produces specialty crops such as fruits, vegetables, and nuts. Black Canyon NP and Curecanti NRA do not contain prime or unique farmlands. Because there would be no effects to prime and unique farmlands, this topic was dismissed from further analysis in this environmental assessment.

Ecologically Critical Areas and Unique Natural Areas. Black Canyon NP and Curecanti NRA do not contain any designated ecologically critical areas, wild and scenic rivers, or other unique natural resources, as referenced in 40 CFR 1508.27. Therefore, this topic was dismissed from further analysis in this environmental assessment.

Hydrology and Water Quality. The 1972 Federal Water Pollution Control Act (33 USC 121, et seq.), as amended by the Clean Water Act of 1977, is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters; to enhance the quality of water resources; and to prevent, control, and abate water pollution. NPS *Management Policies 2006* provide direction for the preservation, use, and quality of water in national recreation areas. Three dams and the resulting reservoirs comprise the Wayne N. Aspinall Storage Unit (Aspinall Unit). The primary purpose in the coordinated system of dams is to store water, but it also produces some hydroelectric power. Crystal Dam produces some hydroelectricity, but is purposed to regulate peak power production flows from Morrow Point into the Gunnison River, downstream of the Aspinall Unit.

The Gunnison River forms the core of management interest within Black Canyon NP; flowing from the southeast below the East Portal of the Gunnison Tunnel. Water is diverted into the Gunnison Tunnel, downriver from Crystal Dam. Aspects of flows within the Gunnison River are altered due to construction and the operation of Blue Mesa, Morrow Point, and Crystal dams (NPS 1997). The timing and magnitude of flows, and water quality (particularly sediment loading and river habitats) have been markedly altered by dam operations. No changes to hydrology or water quality would be expected as a result of actions related to the Plan. Therefore, hydrology and water quality have been dismissed from further analysis in this environmental assessment.

Air Quality. The Clean Air Act of 1963 (42 USC 7401, et seq.) was established to promote public health and welfare by protecting and enhancing U.S. air quality. The act establishes specific programs that provide special protection for air resources and air quality-related values associated with national park system units. Further, the Clean Air Act provides that the federal land manager has an affirmative responsibility to protect air quality-related values (including

visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts (NPS 2010). Section 118 of the Clean Air Act requires a national park system unit to meet all federal, state, and local air pollution standards.

Under the Clean Air Act, Black Canyon NP is designated as a Class I air quality area; Curecanti NRA is designated as a Class II air quality area. A class designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter as specified in section 163 of the Clean Air Act.

Although the proposed alternative does provide an action to install an air monitoring station, no effects to air quality would be expected as a result of actions related to the Plan. The air quality designation (Class I [Black Canyon NP] and Class II [Curecanti NRA]) of the area would not change as a result of the proposal. Therefore air quality was dismissed from further analysis in this environmental assessment.

Socioeconomics. Black Canyon NP and Curecanti NRA are in Gunnison County (est. 2009 population of 15,350) and Montrose County (est. 2009 population of 41,412) in southwestern Colorado. The nearest major towns are Gunnison, on U.S. 50, about 5 miles east of Curecanti NRA; and Montrose, on U.S. 50, about 15 miles west of Black Canyon NP South Rim Visitor Center.

Along with agriculture and government, tourism and outdoor recreation are important components of the regional economy, attracting visitors year-round to enjoy hiking, boating/rafting/kayaking, fishing, camping, sightseeing, and other activities. Area residents and visitors to the area place a high value on the region's scenic and other environmental resources as important contributors to their quality of life. Black Canyon NP and Curecanti NRA, along with other public lands, are amenities that feature prominently in local economic development, including efforts to promote lifestyle/retiree migration to the area.

The no-action and preferred alternatives both promote continued contributions of Black Canyon NP and Curecanti NRA to tourism, outdoor recreation, and use by local residents. Backcountry and wilderness management under either alternative would not dramatically alter the level of future visitation, economic contributions associated with visitor spending, park operations, or roles of the two areas in the quality of life for most area residents.

Implementation of the proposed action would eliminate guided climbing in the inner canyon, but would provide opportunity for additional commercial services in other areas of the park and national recreation area, including guided climbing in the East Portal-Morrow Point zone. Although, one or more climbing guides may experience adverse economic effects, these effects could be offset, in total or in part, by increased economic opportunities for the same or other types of services in other areas of the park or national recreation area. Because the impacts to the socioeconomic environment would be negligible, socioeconomics was dismissed from further analysis in this environmental assessment.

Commercial services, as they relate to visitor use and experience, are addressed under the "Visitor Use and Experience" section of this document.

Land Use. Neither the no-action nor preferred alternatives would affect present or future Black Canyon NP and Curecanti NRA ownership or land use. Many of the lands determined to be eligible for wilderness study in Black Canyon NP are already being managed as wilderness, with the exception of the MRDG process, which affects park operations and results in additional restrictions on public use. All other lands are currently managed as wilderness (already designated) or backcountry. Frontcountry or developed areas are not included in this Plan. Changes to visitor experience and opportunities and Black Canyon NP and Curecanti NRA operations are addressed in the “Visitor Use and Experience” and “Black Canyon NP and Curecanti NRA Operations” sections of this document, respectively. Therefore, land use was dismissed from further analysis in this environmental assessment.

Environmental Justice. Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Environmental justice is defined as the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA 1999).

Although minority and low-income populations exist in communities surrounding Black Canyon NP and Curecanti NRA, management actions under both alternatives would affect use and management of lands within the parks with few, if any, indirect impacts extending beyond the boundaries of the affected lands. Finally, neither the no-action nor preferred alternative propose acquisition of additional lands that could affect the established boundaries and interface between Black Canyon NP and Curecanti NRA and adjacent lands. Considering the above factors, environmental justice was dismissed from further analysis in this environmental assessment.

Cultural Landscapes. NPS Director’s Order 28: *Cultural Resources Management Guideline* defines a cultural landscape as:

... a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and tradition.

No investigations have been made at either Black Canyon NP or Curecanti NRA to identify cultural landscapes. Federal laws and current management practices for identification and management of cultural resources would continue to provide protection for resources on federal lands. Prior to implementing actions that might alter a cultural landscape (e.g., removal of modern structures, construction of new trails), park staff would initiate the NHPA section 106 process to determine if any cultural landscape would be adversely affected; therefore, cultural landscapes were dismissed from further analysis in this environmental assessment.

Historic Buildings, Structures, and Districts. Section 106 of the National Historic Preservation Act and NPS policy require that the effects of NPS actions on properties eligible for or listed in the National Register of Historic Places (national register) be considered, and that appropriate steps be taken to avoid, minimize, or mitigate those effects. The North Rim Historic District at Black Canyon of the Gunnison National Park was listed in the national register in September 2005. The district includes five Civilian Conservation Corps-era buildings (dormitory, privy, maintenance shop, shower house, and Quonset hut), six overlooks, five stone culvert headwalls, four stone retaining walls, and two structures at overlooks (NPS 2005). Other structures determined significant are Dragon's Point and Pulpit Rock overlooks at the South Rim. At Curecanti NRA, the Gunnison Diversion Tunnel, Sapinero School, Sapinero Guard Station, and the Old Spanish Trail have been determined eligible for the national register (NPS 2008). Locomotive No 278 and the Narrow Gauge Trestle at Cimarron are listed in the national register.

The proposed plan to remove modern structures (two toilets) would not affect historic properties, and construction of new trails would be sited to avoid historic structures; therefore, historic buildings, structures, and districts were dismissed from further analysis in this environmental assessment.

Archeological Resources. In accordance with the National Historic Preservation Act, the National Environmental Policy Act, the NPS Organic Act, NPS *Management Policies 2006*, Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*, and Director's Order 28: *Cultural Resource Management Guidelines*, the National Park Service is required to consider the impacts of its undertakings on cultural resources, including archeological sites listed in or determined eligible for listing in the national register.

Approximately 25% of Black Canyon has been archeologically surveyed (NPS 1994, Firor 1994, NPS 1995), although most surveys were completed in the mid-1970s and would not be considered adequate for current standards (Frost 2011). At least 148 archeological sites have been recorded with at least 47 of those sites determined to need additional archeological research to assess their eligibility for listing in the national register (NPS 2010d). Archeological investigations have been taking place in Curecanti NRA since the 1960s, with a concentration of studies in the 1980s in support of constructing facilities at Curecanti NRA. There are over 379 archeological sites recorded in Curecanti NRA, approximately 138 of which need additional archeological research to assess their eligibility for listing in the national register (NPS 2010d).

Federal laws and current management practices for identification and management of cultural resources would continue to provide protection for recorded and undocumented archeological sites on federal lands. Prior to implementing actions that involve ground-disturbing activities (e.g., removal of modern structures, construction of new trails), surveys would be conducted and archeological resources avoided and protected; therefore, archeological resources were dismissed from further analysis in this environmental assessment.

Museum Collections. Black Canyon NP has approximately 20,866 objects in its collection and 117,602 archival documents stored in park facilities or at the NPS Western Archeological Conservation Center in Tucson, Arizona, and the visitor center and Bally Building at Cimarron. Curecanti NRA has approximately 157,206 objects and 102,571 archival documents in its collection housed at the Midwest Archeological Center in Lincoln, Nebraska, and the visitor

center and Bally Building at Cimarron. These items are managed as provided for in Director's Order 24: *NPS Museum Collections Management* and the *NPS Museum Handbook*. The implementation of the no-action alternative would have no direct impact on museum collections currently managed by the National Park Service. The implementation of the preferred alternative would not impact current NPS collections, but it may ultimately result in new archeological or paleontological resources that would be managed according to Director's Order 24. Museum collections are therefore dismissed from further analysis in this environmental assessment.

Ethnographic Resources. The National Park Service defines ethnographic resources as any:

... site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it (Director's Order – 28: Cultural Resource Management Guideline, p. 191).

In 2002, the NPS Intermountain Support Office, in cooperation with Curecanti NRA, sought to summarize American Indian tribal affiliation within and surrounding Curecanti NRA. Historical records document Ute tribal affiliation with the region from western Colorado and into eastern Utah. The Uncompahgre (or Tabeguache) Band of Utes is the group with a historic affiliation with this area. Other tribes identified with possible cultural affiliation include the Cheyennes, Comanches, Hopis, Navajos, Apaches, White Mesa Utes (comprising Paiutes and Utes), Paiutes, and the San Juan Southern Paiutes (NPS 2002a). Based on the 2008 Resource Protection Study and Environmental Impact Statement and on information from NPS personnel, it was concluded that the primary tribes with which the National Park Service should confer are the Northern Utes, the Southern Utes, and the Ute Mountain Utes. Neither an ethnographic study nor an American Indian affiliation study have been conducted specifically for Black Canyon NP; however, the affiliation study conducted for Curecanti NRA can be extrapolated to the adjacent Black Canyon NP. Scoping letters were sent to these American Indian tribes in November 2010, and no responses were received. Ethnographic resources are not known to exist within Black Canyon NP or Curecanti NRA (NCPN 2004b); therefore, this topic was dismissed from further analysis in this environmental assessment.

Indian Trust Resources. Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes.

There are no Indian trust resources at Black Canyon NP or Curecanti NRA. The lands comprising the Black Canyon NP and Curecanti NRA are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Because there are no Indian trust resources, this topic was dismissed from further analysis in this environmental assessment.

Lightscares and Dark Skies. In accordance with *NPS Management Policies 2006*, the National Park Service strives to preserve natural ambient lightscares, which are natural resources and values that exist in the absence of human-caused light (NPS 2006). Although the Plan provides

an action to establish a baseline and monitor for change, no changes in the lightscares and dark skies would be expected as a result of actions related to this Plan. Therefore, lightscares and dark skies were dismissed from further analysis in this environmental assessment.

Scenic Resources. In the evaluation of scenic quality, both the visual character and visual quality of a viewshed are considered. A viewshed comprises the limits of the visual environment associated with the alternatives. In Black Canyon NP, views are either expansive or limited due to the geology, vegetation height, and topography of the area. Views are relatively expansive in Curecanti NRA. Viewsheds can also be affected by development of adjacent private property. The proposed action does not expand or dramatically alter the visual character or visual quality of Black Canyon NP and Curecanti NRA, nor does it create any changes to scenic vistas. The park staff would continue to work with neighbors on viewshed issues. Some structures may be removed from the wilderness and backcountry areas, but these effects on the natural vistas of Black Canyon NP and Curecanti NRA would be beneficial, long term, and negligible; therefore, scenic resources were dismissed from further analysis in this environmental assessment.

Soundscapes. In accordance with NPS *Management Policies 2006* and Director's Order 47: *Sound Preservation and Noise Management*, an important component of the NPS mission is the preservation of natural soundscapes associated with national park system units (NPS 2006). Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in national park system units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitude, and duration of human-caused sound considered acceptable varies among national park system units and potentially throughout each national park system unit, being generally greater in developed areas and less in undeveloped areas.

Although the proposed action does establish a baseline and monitor for change, no changes in soundscapes would be expected as a result of actions related to the Plan. Therefore, soundscapes were dismissed from further analysis in this environmental assessment.

Climate Change. Climate change may potentially be the greatest environmental challenge relative to natural resource management in national parks. The natural and cultural resources that the National Park Service has a fiduciary responsibility to protect unimpaired for future generations could be negatively affected. In response to the potential effects related to climate change (September 14, 2009), Secretary of the Interior Ken Salazar signed Secretarial Order No. 3289: *Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources*. This secretarial order established as priorities the development of environmentally responsible renewable energy on U.S. public lands, and the protection of cultural and natural resources from the potential effects of climate change. In addition, the secretarial order established a framework through which Department of the Interior bureaus would coordinate climate change science and resource management strategies to address climate change. President Barack Obama signed Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" (October 5, 2009). This executive order requires federal agencies to measure, manage, and reduce greenhouse gas emissions toward agency-defined targets. Subsequently, the Department of the Interior and the National Park

Service recommend all national park system units consider climate change during the NEPA planning process.

Several gases are referred to as greenhouse gases because increased concentration in the atmosphere creates a layer of gases acting as a greenhouse effect over the earth, generally resulting in warming trends. Climate change scenarios project potential changes in local conditions, including the possibility of a shift to less snowfall and more precipitation in the form of rain.

There would be no measureable effects on climate change with the proposed actions; the proposed actions are consistent with section 1.4.7.1 of NPS *Management Policies 2006*. The proposed actions would not result in any unacceptable impacts. Therefore, climate change was dismissed from further analysis in this environmental assessment.

Energy Requirements and Conservation Potential. Energy and fuels would continue to be used as part of ongoing park operations and maintenance. An increase in energy and fuels usage would likely occur during trail construction projects. Any increase in energy and fuel usage, however, would be temporary and negligible, lasting only as long as construction. Because the impacts to the energy requirements and conservation potential would be negligible, this topic was dismissed from further analysis in this environmental assessment.

Chapter 2: Alternatives

Black Canyon of the Gunnison National Park Uplands Zone

Desired Conditions-

*wild
natural
expansive
peaceful
adventuresome
opportunity for
high solitude*



USFWS Photo - Dave Menke



NPS Photo

NPS Photo - Lisa Lynch

CHAPTER 2: ALTERNATIVES

INTRODUCTION

The “Alternatives” section describes the no-action alternative and the preferred alternative, which is the Wilderness and Backcountry Management Plan. As stated earlier in this document, the focus of the Plan is the wilderness and undeveloped backcountry of Black Canyon NP, and the land-based backcountry visitor activities and resources at Curecanti NRA. The developed, or frontcountry (roads, visitor centers, marinas and boat ramps, parking lots, scenic overlooks with associated turnouts and trails, picnic areas, and a 100-foot buffer zone surrounding the development), and water-based recreation on the reservoirs are excluded from this Plan.

The no-action alternative describes the continuation of existing management without implementation of the proposed action. The no-action alternative provides a basis for comparing the management direction and environmental consequences of the preferred alternative.

The preferred alternative presents management strategies and options for meeting the purpose and need of the proposed action and defines the rationale for the action in terms of resource protection and management, visitor and operational use, and other applicable factors. A summary table comparing the environmental consequences of the no-action and preferred alternatives is presented at the end of this section.

Additional alternatives considered for the Plan, but dismissed from detailed analysis are also discussed in this section.

NO-ACTION ALTERNATIVE

The no-action alternative continues existing management programs and practices in the wilderness and backcountry areas of Black Canyon NP and Curecanti NRA. Should the no-action alternative be selected, the National Park Service would respond to future needs and conditions associated with backcountry and wilderness management without major changes in currently defined and approved actions, programs, and plans.

Resources, including natural resources, cultural resources, water quality, scenic resources, etc., would continue to be managed under various federal and state laws, NPS policies and programs, and Black Canyon NP/Curecanti NRA-specific resource management plans. Many resources would be managed in cooperation with other federal and state agencies, including the Bureau of Reclamation, Bureau of Land Management, U.S. Forest Service, and Colorado Division of Wildlife. Resources would be inventoried and monitored.

Administrative activities would continue to include maintenance, law enforcement, restoration projects, resource monitoring, interpretation and education, and fire and rescue activities. Currently, the park has multiple efforts underway in which it communicates wilderness and backcountry skills and ethics. Those include contact with visitor center staff as wilderness users

obtain permits, a wilderness brochure, and a wilderness and backcountry video as part of many interpretive and education programs.

Current management actions and plans that contain management direction and actions for wilderness and backcountry areas in Black Canyon NP and Curecanti NRA would continue under the no-action alternative as described in chapter 1 in the “Relationship to Other Plans and Policies” section, and include:

- *1997 Black Canyon and Curecanti General Management Plan* (NPS 1997)
- *Interim Climbing Management Plan*
- *Minimum Requirements Decision Guide*
- Curecanti Resource Protection Study
- Fire Management Plan
- *Black Canyon of the Gunnison National Park Resource Management Plan*
- *Curecanti National Recreation Area Off-Highway Vehicle Evaluation and Interim Management Plan*

Under the no-action alternative, the recent wilderness eligibility assessment (appendix B), which determined an additional 8,447 acres to be eligible or potentially eligible for full wilderness study and for possible inclusion in the national wilderness preservation system, would be managed so that no actions taken by the National Park Service would diminish the wilderness eligibility of the lands possessing wilderness characteristics until the legislative process of wilderness designation has been completed.

In addition, the National Park Service would ensure that actions and programs are consistent with:

- The Wilderness Act of 1964, 16 USC §§ 1131–1136, September 3, 1964, as amended 1978
- National Park Service Director’s Order 41: *Wilderness Preservation and Management*
- The Black Canyon of the Gunnison Wilderness Legislation

The no-action alternative provides a baseline for evaluating changes and prescribing mitigation, as appropriate, for potential management alternatives. This baseline is characterized primarily by current conditions as they are understood in 2010.

Management Prescriptions Under the No-Action Alternative

Management prescriptions were prepared for Black Canyon NP and Curecanti NRA through the development of the general management plan (1997). Management prescriptions articulate management for specific areas and provide the strategy and a broad framework for visitor use and preserving natural and cultural resources. In the general management plan, primitive and semiprimitive management prescriptions apply to the wilderness and backcountry areas of Black Canyon NP and Curecanti NRA.

The primitive management prescription provides for wilderness experiences where challenges and adventure for visitors are plentiful and are in an environment free of human alterations. Natural processes and conditions would be perpetuated. The setting comprises an unaltered natural landscape in which encounters with other users are infrequent, and there are no facilities present unless essential to protect resources or provide for visitor safety and well-being. There is no motorized access.

The semiprimitive nonmotorized management prescription accommodates visitors wishing to experience the superlative natural and cultural resources of Black Canyon NP and Curecanti NRA by hiking or while horseback riding. Visitor and NPS staff encounters are less frequent than those occurring in the developed or rural motorized prescriptions; opportunities for solitude are more available in this management area than in other areas. The landscape setting appears predominately natural, although evidence of facilities that blend with surroundings may be present. Contact with other users is infrequent—there is some evidence of human presence, but there is no motorized access.

Current use and management actions as described below are delineated by logical geographic divisions that ultimately form the boundaries of the proposed management zone under the proposed action. These geographic divisions allow easier comparison of the no-action and the proposed action alternatives.

CURRENT USE AND MANAGEMENT ACTIONS BY GEOGRAPHIC AREA

Black Canyon

Black Canyon NP includes 30,750 acres, of which 15,599 acres (50%) are designated wilderness. An additional 8,447 acres have been determined to be eligible or potentially eligible for full wilderness study and would be managed to protect wilderness character until the legislative process is complete (appendix B and figure 2). There are 7,198 acres of nonwilderness, including federal and private lands.

Black Canyon: Inner Canyon Wilderness Area

Resource Management— Peregrine falcons nest in the inner canyon, and under the Superintendent's Compendium, closures to climbing areas would be applied during the nesting season. There would be no livestock grazing allotments in this area and wildland fires would be managed to meet resource objectives (generally confined by the canyon rim and steep canyon walls). Invasive plant species would be actively managed, specifically tamarisk (*Tamarix ramosissima*). The Gunnison River is classified under the Gold Medal Water designation. No fish stocking would occur in the inner canyon.

Visitor Use— Day use of the inner canyon would continue to be managed by a self-registration wilderness permit system; group size would be limited to current sizes. Visitor use of Red Rock Canyon would continue to be managed by a lottery (permit) system. Overnight camping would

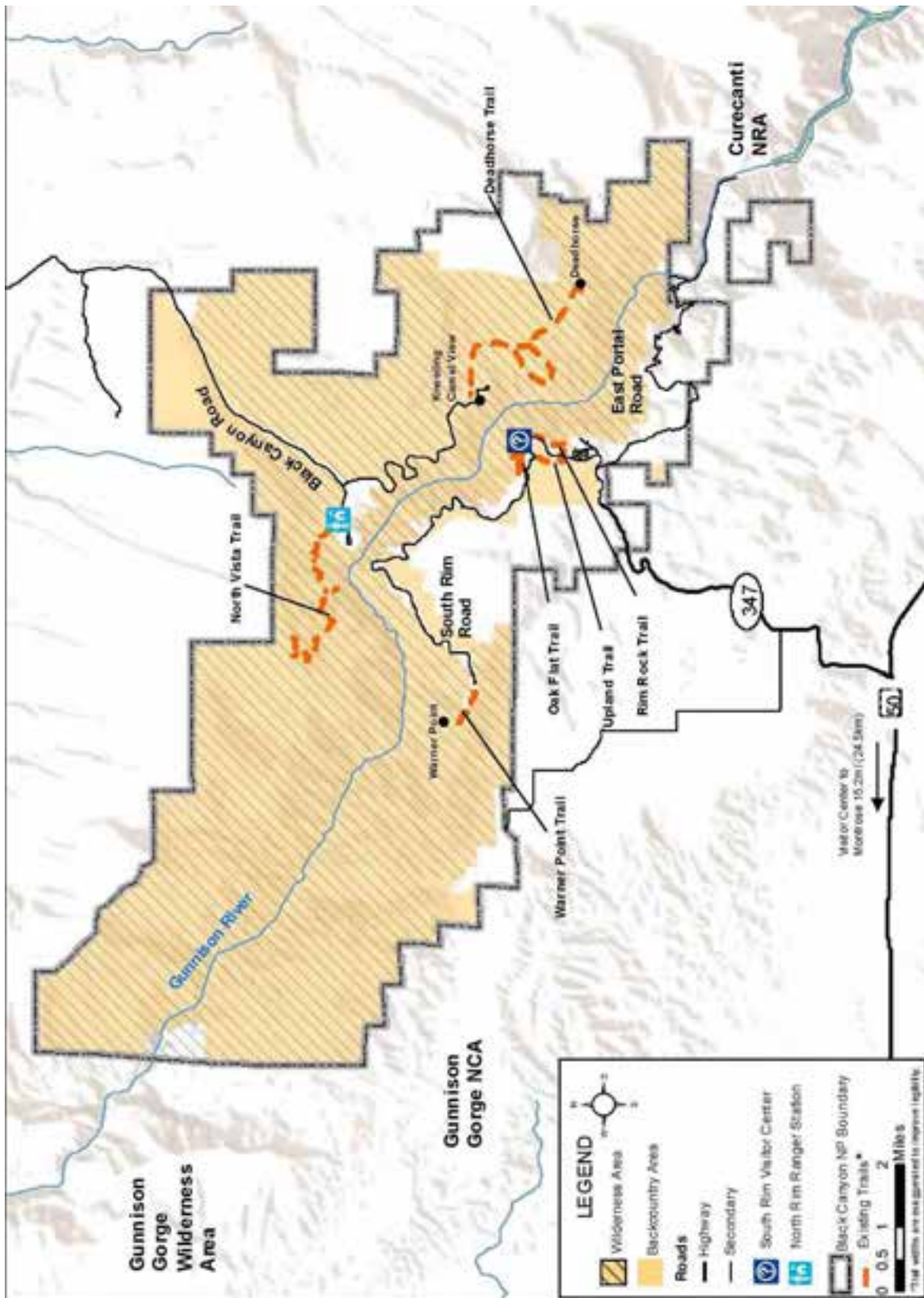


FIGURE 2. EXISTING BLACK CANYON OF THE GUNNISON NATIONAL PARK MAP

also be managed by wilderness permit and the number of permits set at current limits. Access would be along narrow steep routes from the canyon rim, or from the BLM-managed Gunnison Gorge Wilderness Area to the west. Pets would not be allowed. Campfires would not be allowed.

Common activities include rock climbing (which would be managed under the *Interim Climbing Management Plan*), hiking, fishing (requires a Colorado fishing license), ice climbing, and wildlife viewing. Paragliding and B.A.S.E. jumping would not be allowed. Horseback riding would not occur. Mechanized equipment would not be allowed, nor would hunting and trapping activities. There would continue to be a commercial use authorization for guided climbing services.

Development— Development in the inner canyon would remain minimal and include two vault toilets; there would be evidence of campsites; signage would be minimal.

Administration— Aircraft and mechanized equipment would not be allowed in the inner canyon, except during emergency operations or when absolutely critical for the protection of natural and cultural resources. These actions would continue to be evaluated on a case-by-case basis using the MRDG process that would be approved by the superintendent. The MRDG process would be the documentation process used to determine the appropriateness of all actions affecting wilderness (NPS 1999). The MRDG process has two-steps that document: (1) a determination as to whether or not a proposed management action is appropriate or necessary for the administration of the area as wilderness, and does not pose a significant impact to the wilderness resources and character; and (2) if the project is appropriate or necessary in wilderness, the selection of the management method that causes the least amount of impact to physical resources and wilderness character. Scientific research projects and monitoring studies would also require a MRDG process.

Black Canyon: Uplands

Resource Management— Existing livestock grazing allotments would continue in this area. Prescribed burns would be used as a management tool and invasive species would be actively managed. Adjacent land use and development would be addressed under current management strategies.

Visitor Use— Visitor use would include camping, hiking, horseback riding, and winter activities. North Rim campground is in the developed zone and does not require permits. Dispersed camping in the wilderness and backcountry would be allowed and would not require a permit. There would continue to be two wilderness trails—Deadhorse Trail and North Vista Trail (horseback riding would be allowed on Deadhorse Trail); hiking would be allowed throughout this area. Pets on leash are allowed on roads, in campgrounds, to the overlooks, and are allowed on Rim Rock Trail, Cedar Point Nature Trail, and North Rim Chasm View Nature Trail. Pets are not allowed on any other hiking trails or in wilderness areas. Fishing, hunting, and trapping would not be allowed. Mechanized equipment would not be allowed in the wilderness. Visitor access would occur from the South Rim or Black Canyon roads in the developed areas of Black Canyon NP.

Development— Development would include trails, some grazing-related structures (stock ponds, corrals, etc.), and minimal signage.

Administration— Aircraft (fixed-wing or helicopter) and mechanized equipment would not be allowed in the designated wilderness, except during emergency operations or actions that are critical for the protection of natural and cultural resources. Each operation or action would be determined on a case-by-case basis through a MRDG process approved by the park superintendent. Scientific research projects and monitoring activities would also need an approved MRDG process. There could be commercial use authorizations made available for hiking, camping, and educational tours in the uplands area.

Interface Area with Gunnison Gorge National Conservation Area. The western boundary of Black Canyon NP would be jointly managed by the Bureau of Land Management and the National Park Service. The Bureau of Land Management recently acquired additional land near the Black Canyon NP wilderness boundary and Red Rock Canyon trailhead. A camping area near the common boundary area on the Gunnison River, known as Margaritaville, would be accessed by hikers or rafters from Chukar Trail, beginning on the BLM trailhead access from Chukar Road. There would continue to be two designated campsites at Margaritaville—one for rafters and one for hike-in users. Campers would register at the BLM Chukar Trail trailhead kiosk to access the Margaritaville site. The Bureau of Land Management manages commercial-use permits for rafting, float fishing, and hiking/fishing trips that originate from these campsites.

All walk-in users would be encouraged to carry disposable human waste bags. These bags are currently issued free with user permits at the Chukar trailhead. All boaters would be required to carry and use a portable toilet system. A small turnout on Chukar Road connects to an old road grade that extends from BLM land into the NPS uplands and an overlook with a view of the gorge. It would continue to be an undesignated trail.

BLM managers would continue to allow users one-night camping on any site for boaters and two-night camping for hikers. There would be a limit on users of Margaritaville sites (12 individuals); it would continue to be used sparingly, except during the June–July stonefly hatch when many anglers hike along or boat up the river to fish. Entry limits in place by the National Park Service at the Red Rock Canyon trailhead during the hatch would continue to push use to BLM-managed land downstream of the Red Rock Canyon access.

Although the National Park Service and Bureau of Land Management jointly manage the boundary interface, they would continue to have different rules. For example, the Bureau of Land Management allows leashed dog access, but the National Park Service does not. There are differences in the user fee permit structure for national conservation area wilderness and the NPS Red Rock Canyon access lottery. The Bureau of Land Management allows users to pack in and light charcoal fires in pans and requires packing out the pan and ashes (there is no wood collecting or burning); the National Park Service does not allow any type of fires in the interface zone.

Curecanti National Recreation Area

Curecanti NRA administers a relatively narrow section of land adjacent to the elongated Crystal, Morrow Point, and Blue Mesa reservoirs extending eastward approximately 40 miles from the eastern border of Black Canyon NP, and in the Gunnison River valley. Curecanti NRA comprises approximately 41,255 acres of federal lands and waters; approximately 75% is land (NPS 2008). Curecanti NRA is surrounded by mostly undeveloped land managed by the Bureau of Land Management, U.S. Forest Service, and Colorado Division of Wildlife, and private property (figure 3).

There are no lands managed by the National Park Service within the administrative boundary of Curecanti NRA that are eligible or potentially eligible for wilderness study at this time.

Starting with the completion of Blue Mesa Reservoir in 1967, the Gunnison River transformed this locale into a water-based recreation destination. Approximately one million visitors use Curecanti NRA facilities annually; the peak user season is from Memorial Day to Labor Day, with activities focusing on water-based recreation and camping. Water-related activities, which are not addressed in this Plan, include fishing and the use of houseboats, powerboats, canoes, sailboats, sailboards, and kayaks. Land-based, backcountry recreational activities include sightseeing, photography, wildlife viewing, hunting, hiking, backpacking, backcountry camping, horseback riding, and picnicking. In winter, Curecanti NRA supports a variety of activities including snowshoeing, cross-country skiing, and ice fishing.

Curecanti: East Portal-Morrow Point. East Portal-Morrow Point comprises the land between the Blue Mesa Dam site and the boundary of Black Canyon NP.

Resource Management— Resources would be inventoried and monitored, including peregrine falcons and other species that nest on cliff ledges and in alcoves of East Portal-Morrow Point. Under the Superintendent’s Compendium, closures to sites would be implemented during the nesting season. There would continue to be livestock grazing allotments in this area. Prescribed burns could be used as a management tool (fire management plan), but have not been used to date.

Visitor Use— There would continue to be primitive campsites along the shorelines of Crystal and Morrow Point reservoirs, including Curecanti Creek and Hermit’s Rest. The boat-in only campsite along Crystal Reservoir would continue to have a toilet, picnic table, and fire ring. The campsites along Morrow Point Reservoir would have toilets, picnic tables, and fire rings. Access to Curecanti Creek and Hermit’s Rest would be by boat or foot; all other campsites would be exclusively boat-in. Additionally, there would continue to be three primitive campsites (one each) at Dead Man’s Curve, Nelson’s Gulch, and Blue Creek; the sites would be boat-in and have no facilities. Backcountry hiking trails include Mesa Creek, Hermit’s Rest, Crystal Creek, Curecanti Creek, and Pine Creek. Other recreation activities include climbing, ice climbing, wildlife viewing, fishing, snowshoeing, and cross-country skiing. Leashed pets are allowed on hiking trails, but not on the Morrow Point boat tour. Hunting and trapping would continue to

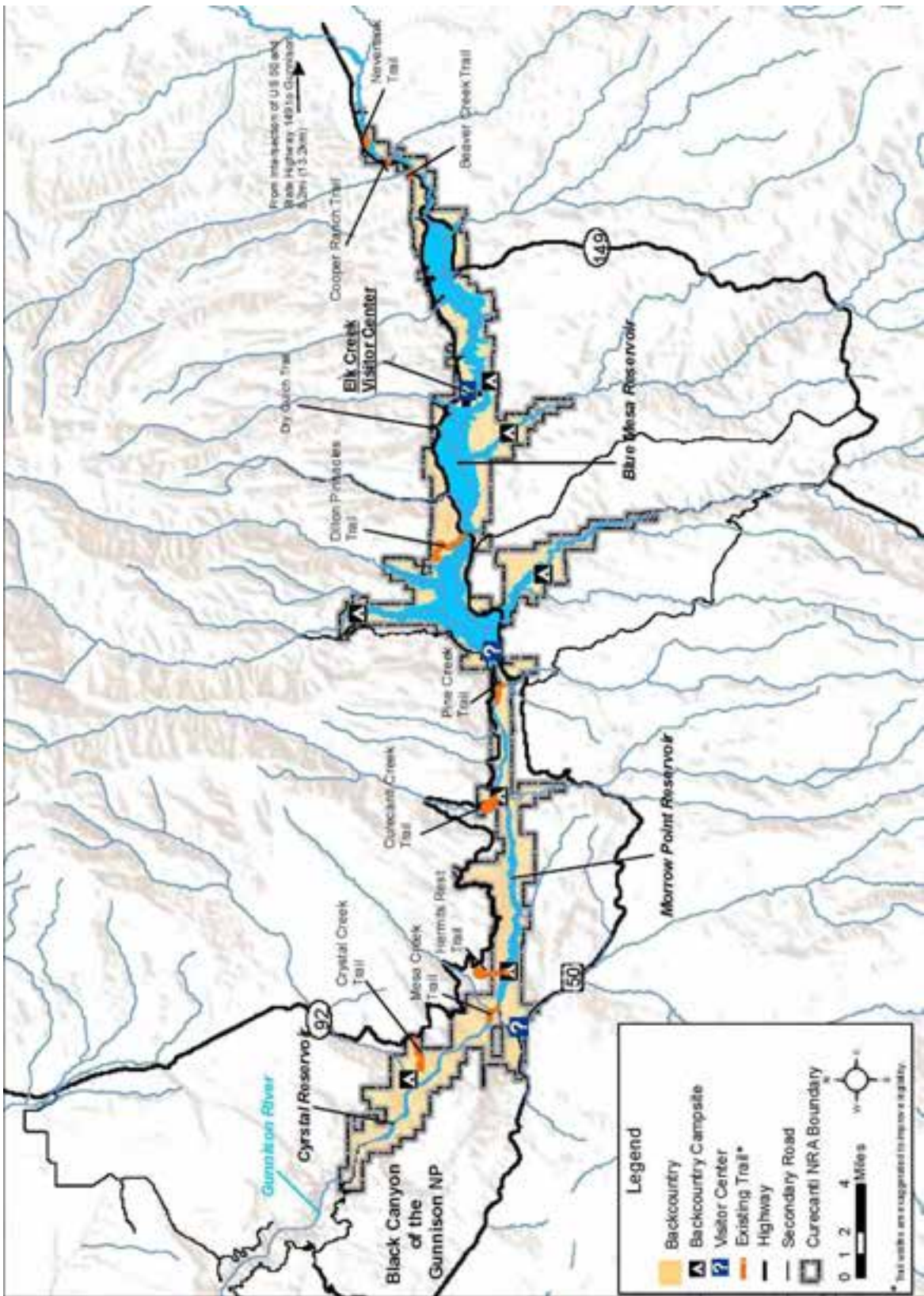


FIGURE 3. EXISTING CURECANTI NATIONAL RECREATION AREA MAP

be allowed and regulated by the Colorado Division of Wildlife. There are currently no commercial services provided in East Portal-Morrow Point; although land-based services and guided fishing on Morrow Point Reservoir would not be prohibited. Paragliding and hang gliding would not be a permitted use and they would not be allowed to land in Curecanti NRA without a permit, except in emergency situations (36 CFR Part 7). Access would be generally from the developed parking lots, turnouts, campgrounds, and picnic sites along State Highway 92 and U.S. 50, and other access roads.

Development— Development in the backcountry of East Portal-Morrow Point would include primitive campsites, fire pits, toilets, and trails.

Administration— Permits would not be required for day use or overnight use.

Curecanti: Blue Mesa. Blue Mesa comprises the land between the eastern Curecanti NRA boundary near Neversink, west to Blue Mesa Dam.

Resource Management— Blue Mesa contains important habitat for the Gunnison sage-grouse, a candidate species for listing under the Endangered Species Act. Curecanti NRA would continue to be engaged in monitoring programs focused on Gunnison sage-grouse leks (strutting grounds) in cooperation with the Colorado Division of Wildlife. There would be livestock grazing allotments in this area. Prescribed burns could be used as a management tool as specified in the fire management plan.

Visitor Use— There would continue to be four backcountry/boat-in campgrounds within the backcountry of Blue Mesa, including West Elk, Lake Fork, Turtle Rock, and Cebolla. Backcountry camping would be allowed along the south shore of Blue Mesa Reservoir and on Red Creek Island (except within 0.5 mile of any developed area, bridge, maintained public road, or other boat-in/backcountry campsite). Dillon Pinnacles Trail would be the only backcountry trail in Blue Mesa. Leashed pets are allowed on the trail. Additional recreational activities include wildlife viewing, hunting, snowshoeing, cross-country skiing, and ice fishing.

Access would be generally from the developed parking lots, turnouts, campgrounds, and picnic sites along State Highways 92 and 149, and U.S. 50, and other access roads. Boat-in campgrounds would be accessed from the reservoir.

Hunting and trapping would be allowed and regulated by the Colorado Division of Wildlife. Horseback riding would be allowed on Dillon Pinnacles Trail and a commercial use authorization for commercial horse service would remain in place. Hang gliders and paragliders would not be permitted to launch from Blue Mesa and would not be allowed to land without a permit, except in emergency situations (36 CFR Part 7).

Development— Development in the backcountry of Blue Mesa would include primitive campsites, toilets, fire pits, trails, and livestock grazing structures (stock ponds, corrals, etc.).

Administration— Permits would not be required for day or overnight use.

PREFERRED ALTERNATIVE—WILDERNESS AND BACKCOUNTRY MANAGEMENT PLAN

The proposed action is a comprehensive approach to wilderness and backcountry management that is based on maintaining or improving wilderness and backcountry qualities in Black Canyon NP, and to maintain or improve backcountry qualities in Curecanti NRA. Because this Plan intentionally addresses backcountry and wilderness in both national park system units, the proposed action offers a spectrum of wilderness and backcountry opportunities. Management zones in this alternative would identify desired conditions and management for different areas throughout both units. At one end of the spectrum, the inner canyon of Black Canyon would be managed to be wild, natural, rugged, remote, and provide adventure and the experience of self-reliance. At the other end of the spectrum, Blue Mesa backcountry would be managed to be uncrowded, natural, expansive, open, and rural, with a variety of recreational opportunities supported by trails, campsites, and other appropriate backcountry facilities.

The proposed action would be actively engaged in preserving the unique wilderness qualities of the inner Black Canyon. The current access permit system, with ceilings on access points, would be adopted, along with a set of measures and standards for adaptively managing the system. A change from the no-action alternative would require visitors in the primitive zone to camp in designated campsites only, for resource protection. Over time, a pack-it-out system for human waste would be phased in and existing composting toilets would be removed. The transition would involve a period of widespread visitor information-sharing, -testing, and -monitoring. The inner canyon would continue to have rugged routes rather than developed trails.

New trails would be proposed in the uplands of Black Canyon NP and in Curecanti NRA. Unique opportunities for remote backcountry camping in Curecanti NRA would continue, particularly recognizing and protecting opportunities for solitude along the Crystal and Morrow Point reservoirs. This alternative also proposes new trails and new uses on existing trails, improving connections from trailheads in the Blue Mesa area to adjacent public lands.

One of the objectives of this Plan is to define the role of commercial guides and services in wilderness and backcountry areas. Using the management framework and management zones, commercial services have been evaluated to determine whether or not they are appropriate and necessary, using the guidance of NPS concession management laws, regulations, policies, and the goals and objectives of this wilderness and backcountry plan. Commercial services were evaluated within each management zone, and those that have been identified as appropriate are described within the zones. The filters and analysis for that determination can be found in appendix E.

The proposed action would adopt, with modifications, the *Interim Climbing Management Plan*. The proposed climbing management plan emphasizes “clean climbing,” requires authorization for new fixed anchors, and closely manages new routes to meet the desired conditions for protection of the wilderness character in the inner canyon of Black Canyon NP. The climbing management plan would be expanded to address Curecanti NRA, and would aim at meeting the desired backcountry conditions in that area. The proposed climbing management plan can be found in appendix C.

A goal of the Plan is to enhance public understanding of the relevance of wilderness and backcountry values and opportunities, with an objective to provide public information to promote backcountry skills and wilderness ethics. Both parks would develop a long-range interpretive plan that would address wilderness and backcountry as interpretive themes, and make suggestions as to how wilderness and backcountry education and interpretation should be addressed in future interpretive efforts. These suggestions may include wayside exhibits, signs, bulletin boards, publications (including the park newspaper), lesson plans as part of a suite of curriculum-based education programming available for teachers to select, inclusion as part of the Advanced Junior Ranger Program already in existence, and perhaps as a featured annual event.

It is important to note that Black Canyon presents an opportunity that is unusual in that the drive-by and walk-up viewpoints along both the north and south rims provide visitors with the ability to view wilderness that is otherwise inaccessible to them. This platform, this “outside looking in” ability, can be an opportunity to inspire visitors about wild places and introduce them to wilderness through wayside exhibits along the rim, as well as in self-guiding booklets and ranger-led programs.

In a recent survey of park visitors, 41% said they obtained information about the park through the Web site and 77% said they would use the information for future visits. This clearly indicates there are opportunities to increase wilderness awareness via the park Web site.

The park does not currently mark wilderness boundaries. Carefully placing wilderness signs on trails and routes at the boundary would give visitors notice they are entering a special place—unique and different. The wilderness signs might, if attractive enough, provide a photo opportunity for that nonimpact souvenir so many people seek.

Currently, information about wilderness and backcountry skills and ethics is provided as part of the permit process through wilderness brochures, bulletin boards, and videos. This Plan contains a management framework to monitor wilderness character and take action if conditions change (Appendix D: Measures, Standards, and Management Strategies). Many corrective actions involve visitor education. For example, if human-bear interactions become a problem, the first course of action would be to provide visitors with more information about how to avoid encounters. Updating and delivering current information to visitors is an important management tool to protect wilderness character.

As in most education efforts, park staff must first be informed about what wilderness means, what the parameters of our wilderness are, and how we manage wilderness use. Wilderness education would be incorporated into annual training for new employees and continuing wilderness education encouraged for all employees. Increasing wilderness awareness—where it is, why it matters, and how to take care of it—among employees and the public would be improved by this diversity of education and interpretive efforts.

The administration of wilderness areas at Black Canyon NP requires a high standard of management as directed by Congress in The Wilderness Act. One specific requirement, section 4(c) of the Wilderness Act, pointedly prohibits certain uses and significantly constrains many administrative activities that would otherwise be considered appropriate for the federal public domain, including park backcountry areas. For that reason, this alternative would provide

specific guidance on how park managers would make decisions affecting wilderness, consistent with the *Minimum Requirements Decision Guide* (appendix F), as well as specific guidance on scientific and research activities in wilderness (appendix G).

MANAGEMENT FRAMEWORK

The wilderness management plan will identify desired future conditions, as well as establish indicators, standards, conditions, and thresholds beyond which management actions will be taken to reduce human impacts on wilderness resources.

NPS Management Policies 2006, 6.3.4.2 Wilderness Management Planning

An essential element of this alternative would be to establish a management framework that addresses current trends and opportunities and also provides guidance for managers to adapt actions as trends change. The Plan is based on a wilderness character monitoring framework:

- **Desired conditions** provides a picture of the desired wilderness or backcountry conditions for each management zone.
- **Indicators/Measures** track conditions to assess progress at attaining desired conditions and preserving wilderness character.
- **Standards** are management decisions on the minimum acceptable condition for measures, and serve as triggers for management action.
- **Management actions** are implemented, after a problem analysis, to maintain or restore desired conditions.

Wilderness and backcountry management zones have been developed for this Plan and are described below. The desired conditions for wilderness and backcountry are described for each of the zones and represent what the wilderness and backcountry plan would achieve. Indicators, measures, standards, and management actions (strategies) establish how the wilderness and backcountry would be managed to achieve future desired conditions (appendix D). This framework provides a system to monitor trends, and when trending downward, provides the strategies and the action to prevent degradation to wilderness or backcountry character.

Implementation of this Plan would require local and national reporting. Local reporting is designed for local managers to communicate with park staff and interested citizens, and provide details for the on-the-ground manager to compare current conditions against established standards. This reporting would occur at least every five years, and more frequently as needed. National reports would be generated every five years, and are designed for regional and national program managers to understand trends in wilderness character throughout the national wilderness preservation system.

Management Zones

Management zones have been developed to identify how different areas of Black Canyon NP and Curecanti NRA wilderness and backcountry would be managed under this Plan. Descriptions about the desired conditions for wilderness and backcountry character and definitions for visitor opportunities and management approaches have been developed to maintain or improve conditions in each Black Canyon NP and Curecanti NRA wilderness and backcountry management zone. Management zones provide predictable expectations for wilderness and backcountry character and conditions.

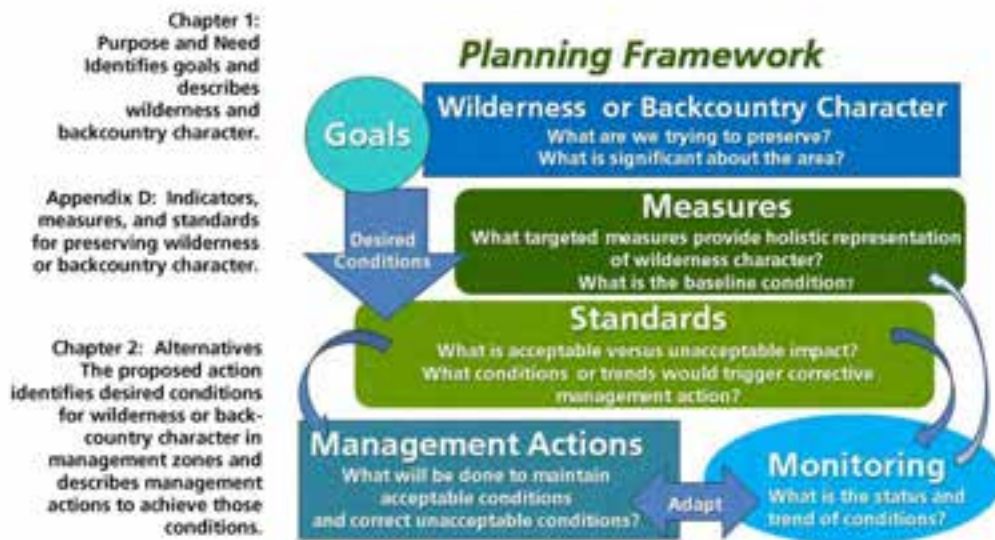


FIGURE 4. PLANNING FRAMEWORK FLOW CHART

The character and conditions would be monitored over time, providing an indication of trends. Indicators, measures, and standards have been developed and would be applied to the management zones (appendix D). Indicators are distinct and important elements of wilderness quality and measures provide quantitative ways to assess the trend of the indicator. Measures are assessed against the standards, and if trends indicate that wilderness character is diminishing, management actions would be implemented.

Different actions would be taken by the National Park Service in different zones with regard to desired conditions, trends, and management actions. Five management zones have been developed: three for Black Canyon NP wilderness and backcountry areas and two for Curecanti NRA backcountry. In addition, subzones have been identified to effectively address Black Canyon NP wilderness areas (four subzones) and backcountry (one subzone).

TABLE 1. WILDERNESS AND BACKCOUNTRY MANAGEMENT ZONES

National Park System Unit	Zones	Subzones
Black Canyon of the Gunnison National Park	Inner Canyon (IC) Wilderness	IC Primitive Wilderness
		IC Pristine Wilderness
	Uplands (UP)	UP Backcountry
		UP Primitive Wilderness
		UP Pristine Wilderness
Gunnison Gorge Interface Wilderness		
Curecanti National Recreation Area	East Portal-Morrow Point Backcountry	
	Blue Mesa Backcountry	

BLACK CANYON OF THE GUNNISON NATIONAL PARK

Three management zones are proposed for the backcountry and designated and eligible wilderness areas (figure 5). Additional visitor activities are proposed in some zones.

Black Canyon: Inner Canyon Wilderness Zone

The inner canyon wilderness zone includes the canyon rims, canyon walls, and the canyon floor including the Gunnison River.

The principal desired conditions for the inner canyon wilderness zone would be wild, natural, and rugged. The zone is remote and provides for adventure. The experience would be challenging and the visitor would need to be self-reliant and equipped with wilderness skills. The objectives for wilderness qualities would be to protect and improve the untrammeled character, protect and improve natural quality, maintain and improve the undeveloped character, and preserve and improve opportunities for solitude.

Two subzones have been developed and would be applied to more efficiently manage the inner canyon wilderness zone: the primitive wilderness and pristine wilderness subzones described herein.

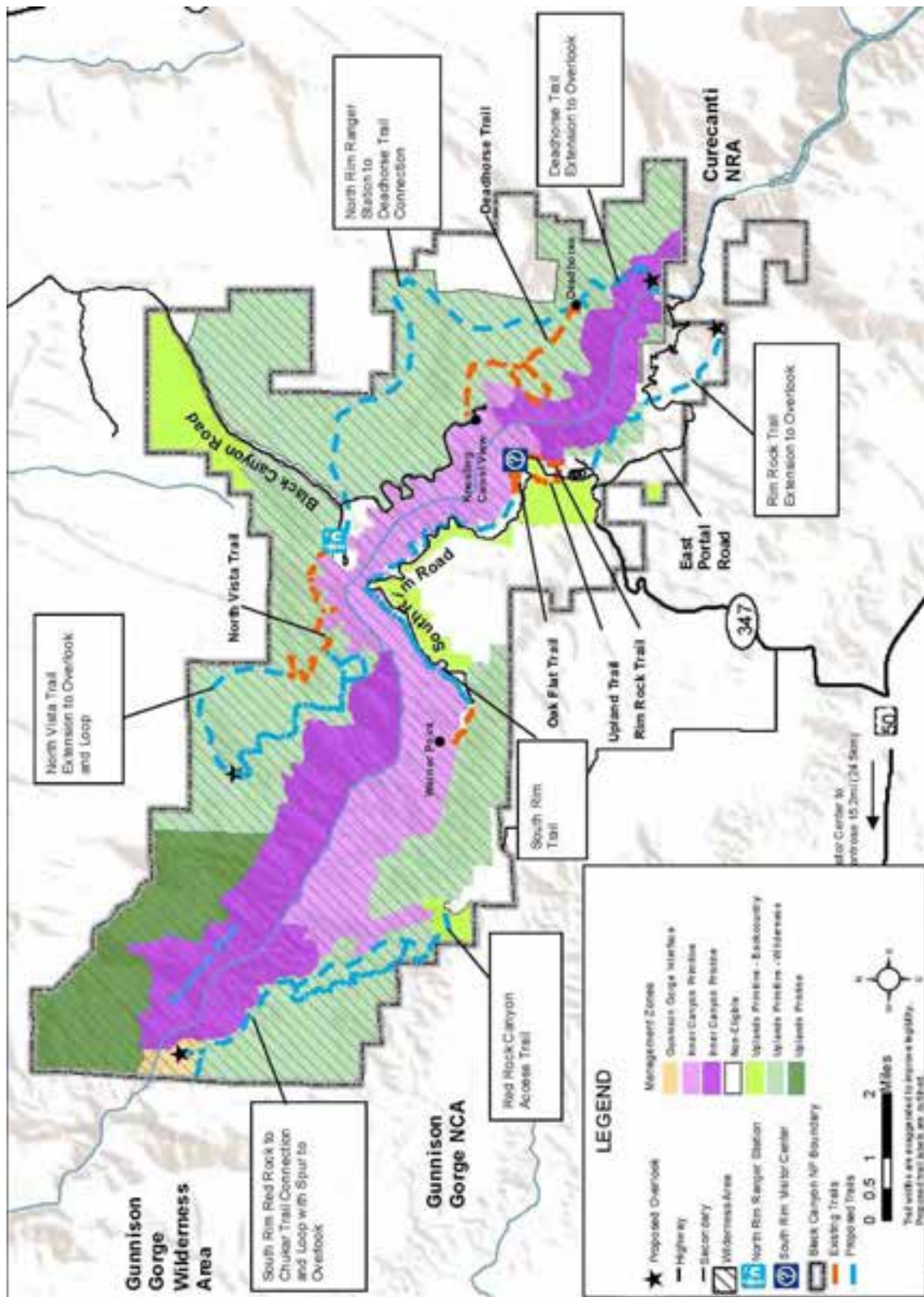


FIGURE 5. BLACK CANYON OF THE GUNNISON NATIONAL PARK PROPOSED MANAGEMENT ZONES

Inner Canyon Primitive Wilderness Subzone. The desired conditions described for this subzone would be unspoiled and uncrowded. Objectives would include improving solitude and reducing recreational facilities to improve primitive and unconfined recreation, self-reliance, and natural qualities. In the inner canyon primitive wilderness subzone, the natural qualities of the canyon floor and opportunities for solitude would be improved by designating campsites.

Inner Canyon Pristine Wilderness Subzone. The desired conditions described for this subzone are untamed, isolated, pure, and free. Visitors would need to be independent and skilled to safely access the subzone, and the area would foster peoples' connection to wild places. Objectives include: keeping the wildest area in Black Canyon NP wild; keeping the zone untrammeled; preserving premier opportunities for solitude and primitive, unconfined recreation; and inspiring those who enter and those who view from overlooks to value wild places.

Proposed Actions for Inner Canyon Wilderness Zones— To maintain and enhance existing opportunities for solitude for hikers, anglers, backcountry campers, climbers, and kayakers, the existing access permit system for the inner canyon wilderness zone would be continued to disperse use and avoid crowding. Visitor experience and resource conditions would be monitored (see indicators, measures, and standards) and if there are significant changes, adjustments to the permit system may be warranted. Self-reliance, challenge, and adventure would continue to be valued, and routes would remain unimproved, except for minor re-routing to mitigate specific erosion problems. There are no trails, and new trails would not be constructed. Pets would continue to be prohibited. A requirement for visitors to store their food and trash in rodent- and bear-proof containers would be implemented to keep wildlife from becoming dependent on humans. No livestock use would be allowed in the inner canyon wilderness zone.

The primary difference in the management of the inner canyon pristine subzone and the inner canyon primitive wilderness subzone would be the management of overnight use and climbing.

Campsites would be designated in the inner canyon primitive wilderness zone, and would not be designated in the inner canyon pristine zone. Campsites would be monitored and adjusted to ensure that natural qualities are maintained or improved and to provide solitude by ensuring adequate distance between campsites.

In the inner canyon primitive wilderness subzone, natural qualities and self-reliance would be further improved by the removal of vault toilets and implementation of a pack-it-in/pack-it-out system using personal human waste pack-out bags for storage and transport. As part of maintaining and improving self-reliance, comprehensive guidance for signs in wilderness would be developed to ensure they are essential for route finding and as minimal and unobtrusive as possible.

The proposed climbing management plan would be adopted in the inner canyon wilderness zone to protect the natural and undeveloped quality of wilderness. The proposed climbing management plan would permit new fixed anchors or bolts in the inner canyon primitive zone with NPS authorization, but not in the inner canyon pristine zone. Motorized drills would not be allowed in either wilderness subzone. The impacts of fixed hardware and access routes on wilderness character would be monitored; management may be adjusted if warranted by a

change in conditions. The peregrine falcon nesting activities would continue to be monitored and seasonal closures would be implemented to protect active nesting sites (ledges and alcoves in canyon walls).

To maintain and improve natural qualities in the inner canyon wilderness zone, tamarisk shrubs or small trees would continue to be monitored, and management actions enacted to reduce infestation and/or establishment. Obtaining a more natural flow regime would remain the centerpiece for the Gunnison River ecosystem and the National Park Service would continue to work with the Bureau of Reclamation to meet requirements of the Black Canyon water right decree and improve the untrammeled quality of wilderness. The National Park Service would pursue appropriate means to further recognize and protect the water quality of the Gunnison River. Management of wildland fires in the inner canyon wilderness zone would follow the current fire management plan and future fire management plans would focus on further enhancement of wilderness character. Baseline soundscape and night sky data would be collected and conditions monitored. To maintain and improve the untrammeled quality, Black Canyon NP would follow the MRDG process to ensure that administration of the backcountry seeks to minimize mechanized activities, including the use of chainsaws and helicopters, and to minimize manipulation of the natural environment. Black Canyon NP would also enhance guidelines for research and scientific installations in wilderness that would be consistent with the preservation and management of wilderness.

To maintain and improve opportunities for challenge, self-reliance, and adventure that are integral to the wilderness character of the inner canyon wilderness zone, it has been determined that no commercial services would be necessary or appropriate in the Black Canyon inner canyon wilderness zone. Introducing commercial services would diminish general public recreational opportunities and would monopolize limited access opportunities at the expense of visitors participating in hiking, camping, and fishing activities. To maintain and improve opportunities for challenge, self-reliance, and adventure that are integral to the wilderness character of the inner canyon wilderness zone, guided climbing would not be authorized. Detailed information about conditions for climbing and kayaking would be available to visitors so they may make informed choices about challenges, planning, and assuming risks. An analysis of commercial services can be found in appendix E.

In the inner canyon wilderness zone, B.A.S.E. jumping and paragliding activity would diminish natural qualities through potential effects on nesting peregrine falcons and impacts to soils and vegetation at launch and landing sites and retrieval routes. The activities of jumping, flying, and retrieval would significantly diminish opportunities for solitude and primitive and unconfined recreation for other visitors. There would be concern for visitors who could be jeopardized by B.A.S.E. jumpers at proposed designated campsites at the bottom of the canyon. Therefore, it is determined that paragliding and B.A.S.E. jumping are inconsistent with the wilderness character of the inner canyon and would not be authorized.

Black Canyon: Uplands Zone

The desired conditions for the upland wilderness zone would be wild, natural, expansive, peaceful, and adventuresome; the experience would be of solitude. Objectives for wilderness quality would be to accept short-term “trammeling” for the long-term benefits to the natural

and untrammeled qualities. Also, maintain and improve the undeveloped qualities, protect opportunities for solitude, and enhance opportunities for primitive recreation.

Three subzones have been developed and would be applied to more efficiently manage the uplands zone. These subzones are the uplands primitive wilderness, uplands pristine wilderness, and uplands backcountry described herein.

Uplands Primitive Wilderness Subzone. The desired condition for the uplands primitive wilderness subzone would be described as remote and approachable. Objectives would include maintaining opportunities for solitude, maintaining expansive natural views, reducing the impacts of invasive plants and livestock grazing, and providing a quality wilderness character that invites visitors to enjoy the experience of wilderness.

Uplands Pristine Wilderness Subzone. The desired conditions for the uplands pristine wilderness subzone are described as untamed, isolated, and free. Visitors would need to be independent and skilled to safely access the subzone and the area would foster people's connection to wild places. Objectives would include maintaining wildness, improving naturalness, preserving outstanding opportunities for solitude and primitive and unconfined recreation, providing opportunities for self-reliance and adventure, and inspiring those who enter and those who view wilderness from overlooks to value wild places.

Uplands Backcountry Subzone. The desired conditions for the uplands backcountry subzone would be described as untamed and isolated; visitors would need to be skilled to safely access the subzone and the area would foster people's connection to wild places. Objectives would include maintaining wildness, improving naturalness, preserving outstanding opportunities for solitude and primitive and unconfined recreation, providing opportunities for self-reliance and adventure; minimal recreational developments; and inspiring those who enter and those who view the area from overlooks to value wild places. The uplands backcountry subzone would be managed similarly to the uplands primitive wilderness subzone without the legal and policy requirements of wilderness.

Proposed Actions for the Black Canyon Upland Zone. To emphasize restoration of natural qualities, the uplands zone would be the focus of the most active and intensive program of invasive plant removal and native plant/habitat restoration. The National Park Service would become more engaged with the Bureau of Land Management regarding management of grazing permits to ensure the maintenance and enhancement of natural, untrammeled, and undeveloped qualities of wilderness. Unnecessary facilities and structures would be removed, including livestock structures that are unused. Additional fencing, while it would diminish the undeveloped quality of wilderness, may be necessary to improve natural qualities by discouraging trespass grazing. The park would continue to engage with other agencies and nongovernmental organizations to monitor and improve the habitat for Gunnison sage-grouse, a candidate species under the Endangered Species Act. Elk would continue to be managed by the Colorado Division of Wildlife, and the National Park Service would emphasize protection of wilderness character (e.g., scrutiny of radio collaring). Guided by the current fire management plan, managers would seek opportunities to enhance the role of natural fire in the ecosystem, when appropriate.

The uplands zone (wilderness and nonwilderness) would remain relatively free of recreational development, with freedom to hike, cross-country ski, and camp. There would be no designated campsites or toilet facilities. Visitors would be expected to follow appropriate leave-no-trace guidance for human waste (using personal human waste pack-out bags for storage and transport) and for minimum impact camping. Outstanding opportunities for solitude would be maintained by monitoring wilderness character and making management adjustments possible if change occurs. As part of maintaining and improving self-reliance, comprehensive guidance for signs in wilderness would be developed to ensure they are essential for route finding and as minimal and as unobtrusive as possible.

The main difference between the uplands primitive wilderness and the uplands pristine wilderness subzones would be trail presence. The uplands primitive wilderness subzone has existing trails, a few signs, and more trails could be added (table 2), while the pristine wilderness subzone has no trails and would remain trail-less and without signs. Horse use would continue to be allowed on Deadhorse Trail and on possible future extensions of this trail. Leashed pets would only be allowed on Rim Rock Trail, Cedar Point Nature Trail, and North Rim Chasm View Nature Trail. Pets would not be allowed elsewhere in the uplands backcountry or wilderness.

TABLE 2. PROPOSED NEW TRAILS

Trail	Zone	Use	Approx Length
South Rim Red Rock to Chukar Trail connection and loop, including spur to overlook	Uplands Primitive and Gunnison Gorge	Hike	8.0 miles
North Rim Ranger Station to Deadhorse Trail connection	Uplands Primitive	Hike	7.0 miles
North Vista Trail extension to overlook and loop	Uplands Primitive	Hike	5.0 miles
South Rim Trail	Uplands Primitive and Frontcountry	Hike	3.0 miles
Red Rock Canyon Access Trail – on NPS connecting to BLM trailhead	Uplands Primitive	Hike	1.0 mile
Red Rock Trail extension to overlook, possible future connection to Coffee Pot Hill	Uplands Primitive	Hike	2.5 miles
Deadhorse Trail extension to overlook	Uplands Primitive	Hike and Horse	2.0 miles

In the wilderness areas, regardless of being designated wilderness or eligible for wilderness study, Black Canyon NP would follow the MRDG process to minimize mechanized activities, including the use of chainsaws and helicopters, and to minimize manipulation of the natural environment. The park would also implement guidelines for research and scientific installations in wilderness that would be consistent with the preservation and management of wilderness.

Baseline soundscape and night sky data would be collected, and conditions monitored in the uplands zone. To protect the Class I air quality around Black Canyon of the Gunnison Wilderness, an air monitoring station would be established near, but outside the wilderness area.

There are presently no commercial services provided in the uplands zone. Opportunities for climbing, fishing, and kayaking/rafting do not exist in the upland terrain. Commercial service opportunities for hiking, camping, overnight use, and educational tours would protect and enhance the desired wilderness character in this zone. These activities are determined necessary for realizing the wilderness purposes of the area or for protecting and enhancing the desired conditions for wilderness character for this zone, which is peaceful, expansive, and has opportunities for solitude. These commercial services could foster new opportunities for visitors with limited previous wilderness experience. There is only one horse trail, which does not make commercial use for this activity viable in this zone. An analysis of commercial services can be found in appendix E.

Black Canyon: Gunnison Gorge Interface Wilderness Zone

The Gunnison Gorge interface wilderness zone encompasses both inner canyon and uplands along the western boundary of Black Canyon NP, adjacent to the Gunnison Gorge Wilderness within the BLM-managed Gunnison Gorge National Conservation Area. This zone provides access to Black Canyon NP from the Gunnison Gorge National Conservation Area.

Black Canyon opens slightly and is less deep within the rugged Gunnison Gorge; river morphology becomes more amenable to rafting, which becomes more feasible and common from a point 1 mile within Black Canyon NP. All lands within the Gunnison Gorge wilderness zone are designated wilderness.

The desired conditions for the Gunnison Gorge interface wilderness zone would be wild, natural, rugged, awesome, remote, challenging, unspoiled, and uncrowded. The visitor experience would be challenging for individuals who are adventurous, self-reliant, and possess wilderness skills.

Objectives for wilderness qualities would be to maintain and improve the untrammeled character, protect and improve natural quality, maintain and improve the undeveloped character, and maintain and improve opportunities for solitude. The National Park Service and Bureau of Land Management would continue to coordinate activities to meet these objectives.

Proposed Actions for the Gunnison Gorge Interface Wilderness Zone. The two agencies currently cooperate on management of this area, and this cooperation would continue to be enhanced. The Bureau of Land Management and National Park Service would develop an interagency agreement to formalize joint management to preserve and improve wilderness character. The agreement would address management of and access to the campsites, permits, and blending regulations between agencies to achieve consistency for visitor enjoyment, resource protection, and preserving wilderness character. For example, leashed dogs may be allowed at the two campsites in Margaritaville to be consistent with rules downstream. The two agencies would also cooperate on developing a proposed new trail following the undesignated

trail from Chukar Road to a canyon overlook within the park (part of the proposed South Rim Red Rock to Chukar Trail connection).

Within this cooperative management zone, current commercial services would continue, and the Bureau of Land Management would continue to manage the commercial use authorizations.

An analysis of commercial services can be found in appendix E. The two agencies would cooperate in developing joint connecting trail opportunities (South Rim Red Rock to Chukar Trail connection, loop, and overlook spur). Pets would not be allowed on the connecting trail to provide consistent rules within the park.

CURECANTI NATIONAL RECREATION AREA

Two management zones are proposed for the backcountry of Curecanti NRA (figure 6). Additional visitor activities are proposed in some zones.

Curecanti East Portal-Morrow Point Backcountry Zone

This zone includes the backcountry undeveloped areas in Curecanti NRA from Blue Mesa Dam to the boundary with Black Canyon NP. There is no designated or eligible wilderness in the East Portal-Morrow Point backcountry zone.

The desired conditions for the EPMP backcountry zone would be remote, uncrowded, natural, scenic, peaceful, relaxing, rugged, and secluded. The objectives for backcountry qualities would be to protect and improve natural qualities, keep nonrecreational development to a minimum, and recognize and enhance unique and remote backcountry experiences while protecting solitude.

Proposed Actions for EPMP Backcountry Zone. Visitors would continue to enjoy a peaceful setting for hiking, camping, fishing, hunting, canoeing, kayaking, climbing, and viewing this extraordinary and remote canyon segment above Morrow Point and Crystal reservoirs. A new hiking trail would be considered on the south side of Morrow Point Reservoir from Pine Creek to Blue Creek. Horse use, bicycling, and motorized use of trails would not be allowed in the EPMP backcountry zone. Leashed pets would be allowed on trails. Backcountry campsites would be maintained and made available on a first-come, first-served basis. Signs in the backcountry would be kept to the minimum necessary for route finding, and would be small and wood-routed to fit with the environment.

TABLE 3. PROPOSED NEW TRAILS

Zone	Trail	Use	Approx Length
EPMP	Pine Creek to Blue Creek (south side of Morrow Point Reservoir)	Hike	3.0 miles

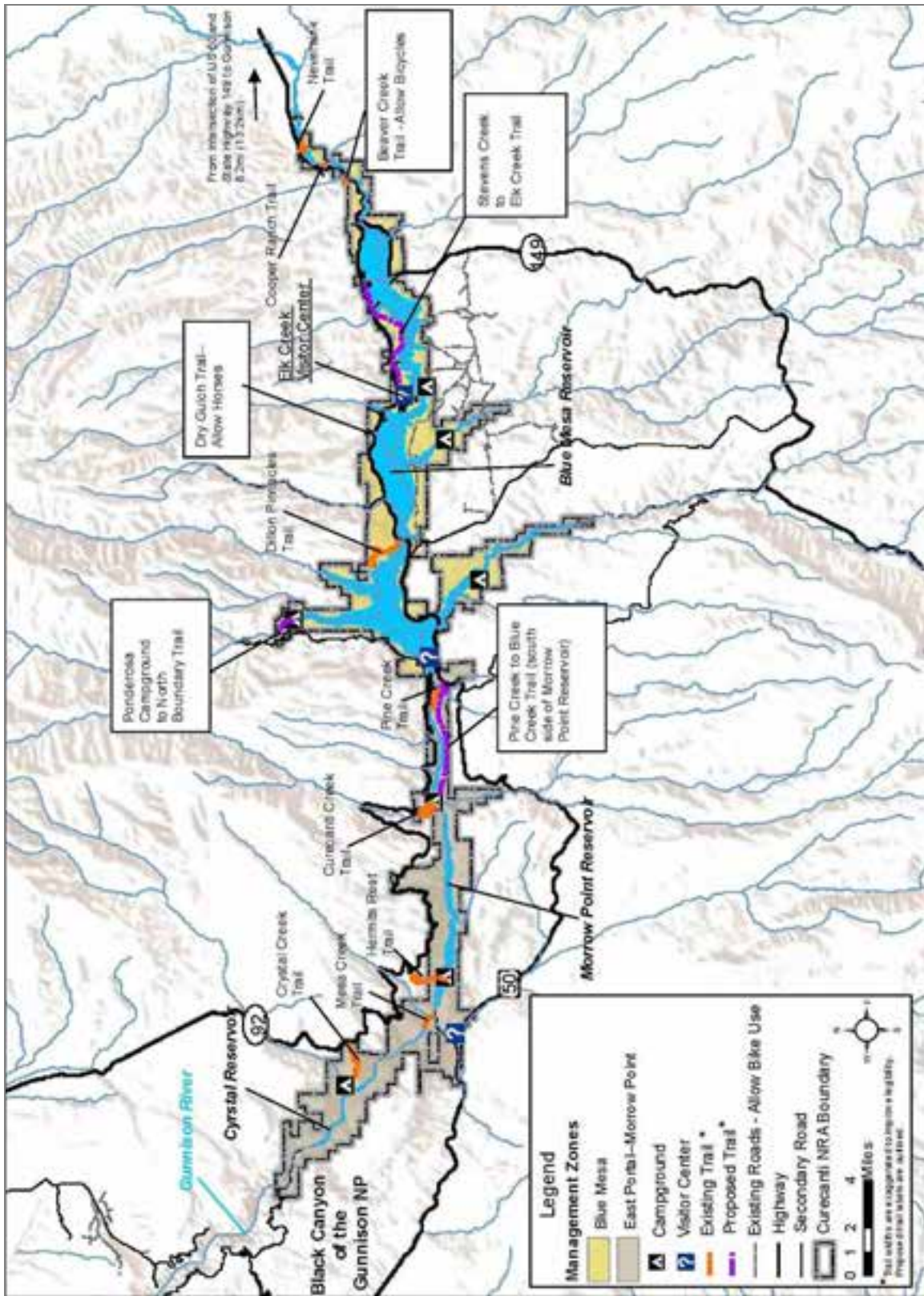


FIGURE 6. CURECANTI NRA PROPOSED MANAGEMENT ZONES

Managers would continue present treatments and would likely increase efforts to remove invasive plant species while restoring native habitat. Rare and/or sensitive plant species would continue to be monitored and managed in consultation with other federal and state agencies. The current fire management plan would guide actions regarding wildfire. Baseline soundscape and night sky data would be collected, and conditions monitored in the EPMP zone. To protect natural qualities and the remote experience provided visitors using this backcountry zone, key indicators and measures would be monitored and possible management adjustments may be incorporated should conditions change.

There is some climbing activity in the EPMP zone; thus, the proposed climbing management plan for Curecanti NRA would address the unique needs of this area (appendix C). In general, new fixed anchors or bolts would be allowed with prior NPS authorization; replacement hardware would be allowed under specific guidance. Access permits would not be required in this zone, and no change is foreseen, although use, hardware, and access impacts would be monitored. Peregrine falcons would continue to be monitored and seasonal closures implemented to protect active nests (ledges and alcoves in the canyon walls and on other geologic exposures).

There are currently no commercial services on the land-based backcountry of the EPMP zone, but the activities of hiking, climbing, and educational tours meet all of the criteria for necessary and appropriate commercial services, and could be authorized in the future. Some activities were determined not to be necessary or appropriate for commercial services. Camping, fishing, or boating at Crystal Reservoir would compromise public safety because of unpredictable and swift water releases. Horseback riding in the steep terrain would risk excessive erosion and vegetation impacts. Due to the limited campsites available, guided camping or overnight use would monopolize opportunities for the general public in this zone. Based on recommendations from the Colorado Division of Wildlife, commercially guided fishing would significantly impact the fishery in East Portal. Proposals for necessary and appropriate commercial services would be evaluated, with consideration of the goals of protecting and enhancing the natural and remote backcountry in this zone. An analysis of commercial services can be found in appendix E.

Paragliding, hang gliding, and B.A.S.E. jumping would continue to be prohibited.

Curecanti: Blue Mesa Backcountry Zone

This zone includes the land between the eastern Curecanti NRA boundary near Neversink, west to Blue Mesa Dam. The desired conditions for this zone would be remote, uncrowded, natural, expansive, open, and rural. The overall objectives for backcountry qualities include protect and improve natural qualities, keep nonrecreational development to a minimum, and enhance land-based recreational opportunities.

Proposed Actions for Blue Mesa Backcountry Zone. Visitors would continue to enjoy hiking, horseback riding, camping, off-highway motorized access in designated areas, and hunting and fishing with valid state licenses. Backcountry recreation opportunities would be increased in Blue Mesa by creating additional opportunities for hikers, bicyclists, and equestrians. A new multipurpose trail (for hiking, bicycling, and equestrian use) could be constructed from Stevens Creek to Elk Creek, and a new trail for hiker and equestrian use would be considered near

Ponderosa Campground to connect with adjacent USFS lands. Equestrian use would be allowed through Dry Gulch Campground and on Dry Gulch Trail to connect with adjacent public lands; bicycles would be allowed on Beaver Creek Trail. These trails would provide opportunities for hikers, mountain bikers, and horses. Horse use would be allowed in areas and on routes that are proposed for motorized vehicle access in the Motorized Vehicle Access Plan. Additional areas below the high water line would be considered for horse use as the necessary cultural resource evaluations are conducted. Leashed pets would be allowed on trails. Motorized use would continue to be allowed on designated routes and shore areas identified in the *Off-Highway Vehicle Evaluation and Interim Management Plan* (NPS 2007), and final *Curecanti National Recreation Area Motorized Vehicle Access Plan / Environmental Assessment*, when completed and implemented. Bicycles and horses would be allowed in the same areas as the off-highway vehicles; for more detail see the *Off-Highway Vehicle Evaluation and Interim Management Plan*.

TABLE 4. PROPOSED CHANGES TO EXISTING TRAILS

Zone	Trail	Current Use	Proposed Additional Uses
Blue Mesa Backcountry	Dry Gulch	Hike	Allow horses to connect to BLM and state lands
Blue Mesa Backcountry	Beaver Creek Trail	Hike	Allow bicycles to connect to BLM and state lands

TABLE 5. PROPOSED NEW TRAILS

Zone	Trail	Proposed Use	Approx Length
Blue Mesa Backcountry	Stevens Creek to Elk Creek (north of reservoir, south of U.S. 50)	Hike, Horse, Bicycles	4.0 miles
Blue Mesa Backcountry	Ponderosa (new trail from campground/horse corral to access road into USFS lands)	Hike, Horse	2.0 miles

Boat-in camping along the shoreline would continue, both at developed campsites and elsewhere in the backcountry. Signs in the backcountry would be kept to the minimum necessary for route finding, and would be small and wood-routed to fit with the environment.

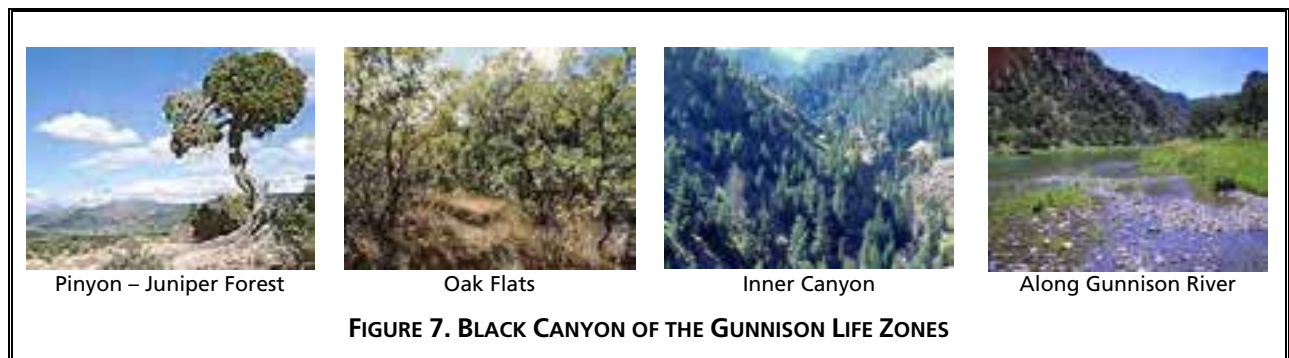
Managers would continue to increase efforts to remove invasive plants and restore natural habitat. Rare and sensitive plant species would continue to be monitored and managed in consultation with other federal and state agencies. The National Park Service would become more engaged with the Bureau of Land Management with respect to management of livestock grazing permits to ensure the enhancement of the natural qualities of the backcountry. The park would continue to engage with appropriate agencies and nongovernmental organizations to monitor and improve the habitat for the Gunnison sage-grouse, a candidate species under the Endangered Species Act. Elk would continue to be managed by the Colorado Division of

Wildlife. The current fire management plan would guide actions regarding wildfire. Baseline soundscape and night sky data would be collected and conditions monitored in the Blue Mesa zone. To protect natural qualities and the backcountry experience in this zone, a few key indicators and measures would be monitored, and possible management adjustments enacted should conditions change.

Current commercial uses in the Blue Mesa backcountry zone include a commercial use authorization for horses. Necessary and appropriate commercial services for this zone include hiking, climbing, camping, fishing, boating, kayaking, horseback riding, educational tours, and motorized vehicles on routes and areas designated in the Motorized Vehicle Access Plan. Proposals would be evaluated with consideration of the goals of protecting and enhancing the natural and remote backcountry in this zone. An analysis of appropriate commercial services can be found in appendix E.

There are no suitable locations for launching paragliders, hang gliders, or B.A.S.E. jumps in the Blue Mesa backcountry management zone. While emergency landing of paragliders and hang gliders launching from nearby BLM land would continue, there would be no need to provide a permanent landing site within NPS-managed lands as there is adequate opportunity for safe landings elsewhere in the area.

Tables 6 and 7 provide a summary of the desired conditions and objectives for each zone and subzone, and actions for each wilderness and backcountry quality under each zone and subzone.



**Black Canyon of the Gunnison National Park and Curecanti National Recreation Area
Wilderness and Backcountry Management Plan**
(Color-coding in the following two tables corresponds to the proposed management zoning shown on figures 4 and 5)

TABLE 6. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – BLACK CANYON NP				
+ Increase Wilderness Quality = Wilderness Quality Stable - Decrease Wilderness Quality	Untrammeled	Natural	Undeveloped	Solitude or Primitive and Unconfined
<p>Black Canyon Inner Canyon Wilderness Zone (overall)</p> <p>Desired condition - wild, natural, and rugged. The zone is remote and provides for adventure. The experience would be challenging and the visitor would need to be self-reliant and equipped with wilderness skills.</p> <p>Objectives - to protect and improve the untrammeled character, protect and improve natural quality, maintain and improve the undeveloped character; and preserve and improve opportunities for solitude as a priority, while accepting additional visitor regulations that may result in some decrease of freedom.</p>	<p>Overall: Protect and improve untrammeled quality.</p> <p>= Natural and cultural resource management actions remain generally limited by terrain</p> <p>+ Reduce human influence on wildlife by requiring visitors to carry rodent- and bear-proof food/trash storage containers</p> <p>+ Implement guidelines for research and scientific activities</p>	<p>Overall: Protect and improve natural quality.</p> <p>= Continue to monitor tamarisk and other invasive species, possible management action to reduce infestations</p> <p>= Continue to work with BOR on achieving more natural river flows</p> <p>+ Seek appropriate waters designation to further protect water quality</p> <p>= Continue to monitor peregrine falcons and other sensitive species; visitor closures as necessary</p> <p>= Continue to use natural fires to meet resource objectives</p> <p>+ Establish baselines and monitor for natural soundscapes and dark night skies</p> <p>+ Establish baselines and monitor for air quality</p> <p>= Continue regulation of no pack livestock</p> <p>= Continue policy of no fish stocking</p> <p>= Continue regulation of no campfires</p>	<p>Overall: Maintain and improve undeveloped quality.</p> <p>= Continue to inventory, monitor, and protect cultural sites</p> <p>= Continue to follow MRDG process to minimize prohibited uses</p> <p>+ Implement guidelines for research and scientific activities</p>	<p>Overall: Priority for preservation and improvement of opportunities for solitude, while accepting additional visitor regulations that may result in some decrease of freedom. Reduce recreational facilities to improve primitive and unconfined recreation, and natural qualities.</p> <p>= Continue to manage visitor numbers at access points with permits to protect solitude, monitor and adjust</p> <p>= Keep routes unimproved, with minor adjustments to reduce erosion</p> <p>= Continue to have no improved trails</p> <p>= Continue to have no trail signs</p> <p>= Generally no new permanent climbing hardware, no motorized drills; monitor and adjust</p> <p>+ No commercial services (no new ones, discontinue climbing guides) to allow opportunities for self-reliance</p> <p>= B.A.S.E. jumping prohibited</p>

TABLE 6. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – BLACK CANYON NP

+ Increase Wilderness Quality = Wilderness Quality Stable - Decrease Wilderness Quality	Untrammeled	Natural	Undeveloped	Solitude or Primitive and Unconfined
		+ Improve natural quality through visitor management actions, monitor and adjust regulations to protect natural quality		
<p><u><i>IC Primitive Wilderness Subzone</i></u></p> <p>Desired condition - unspoiled and uncrowded.</p> <p>Objectives - improving solitude and reducing recreational facilities to improve primitive and unconfined recreation, self-reliance, and natural qualities.</p>		+ Rehabilitate dispersed camping impacts, toilet sites, eroded routes		+ Remove toilets, require visitors to use pack-it-out human waste bags + - Require visitors to use designated campsites, install campsite markers
<p><u><i>IC Pristine Wilderness Subzone</i></u></p> <p>Desired condition - untamed, isolated, imagination, whole, pure, independence, and freedom.</p> <p>Objectives - the wildest area in Black Canyon NP, keeping the zone whole and untrammeled, preserving outstanding opportunities for solitude and primitive and unconfined recreation, and inspiring those who enter and those who view from overlooks to value wild places.</p>				+ Freedom to choose campsite = Visitors must follow leave-no-trace ethics - Limits on length of stay = Continue to have no toilets, require appropriate leave-no-trace

TABLE 6. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – BLACK CANYON NP

+ Increase Wilderness Quality = Wilderness Quality Stable - Decrease Wilderness Quality	Untrammeled	Natural	Undeveloped	Solitude or Primitive and Unconfined
<p>Black Canyon Uplands Zone (overall)</p> <p>Desired condition - wild, natural, expansive, peaceful, and adventure-some; the experience would be of deep solitude.</p> <p>Objectives - accept short-term trammeling for long-term improvements to the natural quality; emphasize improvement of natural quality; maintain and improve undeveloped qualities; and protect a level of deep solitude and enhance opportunities for primitive recreation.</p>	<p>Overall: Accept short-term trammeling for long-term improvements to the natural quality.</p> <p>- Active resource management programs increase trammeling in the short term, could improve when natural condition achieved</p> <p>+ Scrutinize radio collaring and tagging of wildlife</p> <p>+ Reduce human influence on wildlife by requiring visitors to carry rodent- and bear-proof food/trash storage containers</p>	<p>Overall: Emphasize improvement of natural quality.</p> <p>+ Active program of invasive plant removal and native plant/habitat restoration</p> <p>+ Become more engaged with BLM management of grazing permits</p> <p>+ Some increase in fencing to reduce trespass grazing</p> <p>+ Monitor use of prescribed fire, use natural fire to restore natural conditions</p> <p>= Continue to monitor and improve Gunnison sage-grouse habitat in cooperation with other agencies and non-governmental entities.</p> <p>+ Establish baselines and monitor for natural soundscapes and dark night skies</p> <p>+ Establish baselines and monitor for air quality</p> <p>= Continue regulation of no campfires</p>	<p>Overall: Maintain and improve undeveloped quality.</p> <p>+ /-While there may be some increase in fencing, unnecessary structures would be removed (stock ponds, fences, irrigation ditches, etc.)</p> <p>= Continue to inventory, monitor, and protect cultural sites</p> <p>+ Implement guidelines for research and scientific activities</p>	<p>Overall: Protect a level of deep solitude, enhance opportunities for primitive recreation.</p> <p>= Continue allowing hiking, backpacking, cross-country skiing throughout this zone or without assigned campsites. Encourage "leave-no-trace" ethics (monitor for desired conditions and adapt rules if necessary).</p> <p>= Continue allowing horse use on Deadhorse Trail (and possible extension)</p> <p>= Continue to have no toilets, require appropriate leave-no-trace</p> <p>+Commercial services would be evaluated and allowed as appropriate in wilderness and backcountry</p>
<p><u>Uplands Primitive Wilderness Subzone</u></p> <p>Desired condition - remote and approachable.</p> <p>Objectives - maintaining opportunities for deep solitude, maintaining expansive natural views, reducing the impacts of invasive plants and livestock grazing, and providing high quality wilderness character that invites visitors to enjoy and learn</p>			<p>= Continue to follow MRDG process to minimize prohibited uses</p>	<p>= Maintain existing trails</p> <ul style="list-style-type: none"> • Deadhorse (hike and equestrian) • North Vista • Oak Flat • Warner Point <p>+ - Possible additional new trail opportunities for visitors</p> <ul style="list-style-type: none"> • North Vista Trail extension to overlook and loop

TABLE 6. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – BLACK CANYON NP

+ Increase Wilderness Quality = Wilderness Quality Stable - Decrease Wilderness Quality	Untrammeled	Natural	Undeveloped	Solitude or Primitive and Unconfined
about wilderness.				<ul style="list-style-type: none"> • North Rim ranger station to Deadhorse Trail connection • Deadhorse extension • South Rim Trail connections (from Visitor Center to other view points) • Red Rock Canyon Access Trail (connecting to BLM trailhead) • Rim Rock Trail Extension to overlook • South Rim Red Rock to Chukar Trail connection and loop (on BLM lands) = Continue to use minimal signs at trail heads and junctions
<u><i>Uplands Backcountry Subzone</i></u> The uplands backcountry subzone would be managed similarly to the uplands primitive wilderness subzone without the legal and policy requirements of wilderness	Not applicable	Same as Uplands Primitive Wilderness Subzone	= MRDG process not required	Same as Uplands Primitive Wilderness Subzone
<u><i>Uplands Pristine Wilderness Subzone</i></u> Desired condition - untamed, isolated, untouched, freedom, and independence; visitors would need to be skilled to safely access the subzone and the area would foster people's connection to wild places. Objectives - maintaining wildness, improving naturalness, preserving outstanding opportunities for deep solitude and primitive and unconfined recreation, providing opportunities for self-reliance and adventure, lack of recreational developments; and inspiring those who enter and those who view wilderness from overlooks to value wild places.			= Continue to follow MRDG process to minimize prohibited uses	= Keep routes unimproved, with minor adjustments to reduce erosion = Continue to have no improved trails = Continue to have no signs

TABLE 6. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – BLACK CANYON NP

+ Increase Wilderness Quality = Wilderness Quality Stable - Decrease Wilderness Quality	Untrammeled	Natural	Undeveloped	Solitude or Primitive and Unconfined
<p>Gunnison Gorge Interface Wilderness Zone <i>Transition to Gunnison Gorge Wilderness (BLM) (includes uplands and inner canyon)</i></p> <p>Desired condition - wild, natural, rugged, awesome, remote, challenging, unspoiled, and uncrowded. The visitor experience would be challenging for individuals who are adventurous, self-reliant, and possess wilderness skills.</p> <p>Objectives - maintain and improve the untrammeled character in coordination with the BLM, protect and improve natural quality in coordination with the BLM, maintain and improve the undeveloped character in coordination with the BLM; and maintain and improve opportunities for deep solitude in coordination with the BLM.</p>	<p>Overall: Maintain and improve the untrammeled quality, in coordination with the BLM.</p> <p>= Natural and cultural resource management actions remain generally limited by terrain</p> <p>+ Reduce human influence on wildlife by requiring visitors to carry rodent- and bear-proof food/trash storage containers</p>	<p>Overall: Maintain and improve the natural quality, in coordination with the BLM.</p> <p>+ Develop joint tamarisk monitoring and removal program</p> <p>= Continue to use natural fires to meet resource objectives</p> <p>+ Continue to not stock fish in Black Canyon NP</p> <p>+ Improve natural quality through visitor management actions, monitor and adjust regulations to protect natural quality</p>	<p>Overall: Maintain and improve the undeveloped quality, in coordination with the BLM.</p> <p>= Continue to inventory, monitor, and protect cultural sites</p> <p>= Continue to follow MRDG process to minimize prohibited uses</p> <p>+ Implement guidelines for research and scientific activities</p>	<p>Overall: Maintain and improve opportunities for deep solitude and primitive and unconfined recreation, in coordination with the BLM.</p> <p>= Develop an interagency agreement between BLM and National Park Service to jointly manage river recreation, blending regulations between the agencies for consistency for visitor enjoyment and resource protection</p> <ul style="list-style-type: none"> • permits required, fees • designate 2 river sites, maximum group size 12 • no wood fires, charcoal fires allowed in pans at the 2 designated sites • dogs on leash allowed at two campsites • human waste bags or containers - pack it out • commercial services – river guides managed by BLM • through hikers/anglers/campers to Red Rock Canyon and beyond – must purchase and carry a BLM wilderness permit (day use for passing through and camping permit for overnight use at Margaritaville River sites with a two-night maximum stay limit) <p>+ - Possible additional new trail opportunities for visitors</p> <ul style="list-style-type: none"> • A portion of the proposed South Rim Red Rock to Chukar Trail (on BLM lands) may cross into this zone

TABLE 7. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – CURECANTI NRA

+ Increase Backcountry Quality = Backcountry Quality Stable - Decrease Backcountry Quality	Backcountry Natural Resources	Backcountry Undeveloped	Backcountry Visitor Opportunities
<p>East Portal-Morrow Point Backcountry Zone</p> <p>Desired conditions - remote, uncrowded, natural, scenic, peaceful, relaxing, rugged, and secluded.</p> <p>Objectives - protect and improve natural qualities, keep nonrecreational development to a minimum, and recognize and enhance unique and remote backcountry experiences while protecting solitude.</p>	<p>Overall: Protect and improve natural qualities.</p> <p>+ Increase program of invasive plant removal and native plant/habitat restoration</p> <p>= Continue to monitor peregrine falcons and other sensitive wildlife species; visitor closures as necessary</p> <p>= Continue to monitor sensitive plant populations and consult with other entities on management</p> <p>= Follow current fire management plan; fire has limited role in resource management because of narrow tracts of NPS land and fuel characteristics</p> <p>+ Establish baselines and monitor for natural soundscapes and dark night skies</p> <p>+ Establish baselines and monitor for air quality</p> <p>= Allow campfires in designated campsite fire rings</p> <p>= Continue policy of no horse use on trails in this zone (potential resource impacts)</p> <p>+ Reduce human influence on wildlife by providing rodent- and bear-proof food/trash storage systems at designated campsites</p>	<p>Overall: Keep nonrecreational development minimal.</p> <p>+ Inventory existing nonrecreational development, remove structures and facilities determined no longer necessary, minimize proposed new development in this zone</p> <p>= Continue to inventory, monitor, and protect cultural sites</p>	<p>Overall: Recognize and enhance unique, remote backcountry experiences, protect solitude.</p> <p>= Continue to allow unrestricted hiking, camping, fishing, and hunting with valid state license, cross-country skiing</p> <p>+ Begin to monitor visitor use and possible impacts to protect solitude and natural conditions</p> <p>= Maintain existing trails</p> <ul style="list-style-type: none"> • Crystal Creek • Mesa Creek • Pioneer Point • Hermits Rest • Curecanti Creek • Pine Creek <p>+ Possible additional new hiking trail opportunities for visitors</p> <ul style="list-style-type: none"> • Along south side of Morrow Point Reservoir from Pine Creek to Blue Creek <p>+ Possible long-range future connection from Crystal Creek to Deadhorse if a new Curecanti NRA resource protection boundary is enacted</p> <p>= Continue policy of no motorized vehicle use or bicycle use on trails in this zone</p> <p>= Provide consistent, unobtrusive signs as necessary in the backcountry</p> <p>= Extend climbing management policies to this zone: generally limited permanent climbing hardware</p> <p>= Continue to maintain backcountry campsites on edges of the reservoirs – picnic tables, fire rings, toilets</p> <p>+ Commercial services would be evaluated</p> <p>= B.A.S.E. jumping prohibited</p>

TABLE 7. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – CURECANTI NRA

+ Increase Backcountry Quality = Backcountry Quality Stable - Decrease Backcountry Quality	Backcountry Natural Resources	Backcountry Undeveloped	Backcountry Visitor Opportunities
<p>Blue Mesa Backcountry Zone</p> <p>Desired conditions - remote, uncrowded, natural, expansive, open, and rural.</p> <p>Objectives - protect and improve natural qualities, keep nonrecreational development to a minimum, and enhance land-based recreational opportunities.</p>	<p>Overall: Protect and improve natural resource conditions.</p> <ul style="list-style-type: none"> + Increase program of invasive plant removal and native plant/habitat restoration + Become more engaged with BLM management of grazing permits = Continue to monitor rare plant populations and consult with other entities on management + Follow current fire management plan; fire has limited role in resource management because of narrow tracts of NPS land and fuel characteristics = Continue to monitor and improve Gunnison sage-grouse habitat, in cooperation with other agencies and nongovernmental entities + Establish baselines and monitoring for natural soundscapes and dark night skies + Establish baselines and monitoring for air quality = Continue to allow campfires in designated campsite fire rings + Reduce human influence on wildlife by providing rodent- and bear-proof food/trash storage systems at designated campsites 	<p>Overall: Keep development minimal.</p> <ul style="list-style-type: none"> + Inventory existing nonrecreational development, remove structures and facilities determined no longer necessary, minimize proposed new development in this zone = Continue to inventory, monitor, and protect cultural sites 	<p>Overall: Enhance land-based recreational opportunities.</p> <ul style="list-style-type: none"> = Continue to allow unrestricted hiking, camping, fishing, and hunting with valid Colorado license, cross-country skiing + Begin to monitor visitor use and possible impacts to protect solitude and natural conditions = Maintain existing trails <ul style="list-style-type: none"> • Dillon Pinnacles (hike and horse) • Beaver Creek (hike) • Cooper Ranch (hike) + Possible additional new trail opportunities for visitors <ul style="list-style-type: none"> • connect Stevens Creek and Elk Creek (hike, horse, or bike) • work with state, BLM, and USFS on connections with adjoining lands at Ponderosa • specific connections on these hiking trails would authorize new use on segments of the following NPS trails: <ul style="list-style-type: none"> – Dry Gulch – horses – Beaver Creek Trail – bicycles – Ponderosa – horses = Continue to follow NPS Off-Highway Vehicle Plan for use of motorized vehicles in designated areas + Allow bicycles to use routes and designated areas below high water line as identified in the Off-Highway Vehicle Plan Expand equestrian opportunities by allowing horse use in areas and on routes that are proposed for motorized vehicle access in the Motorized Vehicle Access Plan. Additional areas below the

TABLE 7. SUMMARY OF PROPOSED ACTIONS TO PROTECT OR IMPROVE WILDERNESS / BACKCOUNTRY CHARACTER – CURECANTI NRA

+ Increase Backcountry Quality = Backcountry Quality Stable - Decrease Backcountry Quality	Backcountry Natural Resources	Backcountry Undeveloped	Backcountry Visitor Opportunities
			<p>high water line would be considered for horse use as the necessary cultural resource evaluations are conducted. Possible additional connections with adjacent BLM or USFS lands for access</p> <p>= Provide consistent, unobtrusive signs as necessary in the backcountry</p> <p>= Continue to maintain backcountry campsites on edge of the reservoir – picnic tables, fire rings, toilets; continue to allow camping at sites or elsewhere in backcountry by boaters; permit needed for boating but not camping</p> <p>+ Commercial services would continue and new services would be evaluated</p> <p>= Continue policy of no landing of paragliders/hang gliders</p>

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In accordance with Director's Order 12, the National Park Service is required to identify the environmentally preferred alternative in all environmental documents, including environmental assessments. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act, which is guided by the Council on Environmental Quality. The council provides direction that: "[t]he environmentally preferred alternative is the alternative that would promote the national environmental policy as expressed in section 101 of NEPA, which considers:

1. fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations
2. assuring for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings
3. attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
4. preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice
5. achieving a balance between population and resource use that would permit high standards of living and a wide sharing of life's amenities

enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources" (NEPA, section 101).

The no-action alternative is not the environmentally preferred alternative because it would not:

- fulfill the responsibilities for preserving wilderness character (criterion 1)
- attain the widest range of beneficial uses of the environment within a wilderness setting (criterion 3)
- preserve important wilderness and natural aspects of our national heritage (criterion 4)

The National Park Service preferred alternative is the environmentally preferred alternative because it would:

- fulfill the responsibilities for preserving wilderness character (criterion 1)
- attain the widest range of beneficial uses of the environment within a wilderness setting (criterion 3)
- preserve important wilderness and natural aspects of our national heritage (criterion 4)

In short, the preferred alternative would provide protection for wild and undeveloped qualities of Black Canyon NP wilderness and backcountry areas and Curecanti NRA backcountry areas for which they are recognized.

ALTERNATIVES CONSIDERED BUT DISMISSED

Another alternative was considered during this planning process and included additional actions to enhance visitor use and recreational opportunities. These actions considered for inclusion in this alternative included:

- Additional trails in Blue Mesa backcountry zone were considered, but potential resource impacts were a concern and the difficulty of locating new trails to connect with other trails resulted in this action being dismissed.
- Campfires in the inner canyon and upland zones were considered—campfires may be considered in the Gunnison Gorge wilderness zone through the cooperative arrangement with the Bureau of Land Management; however, campfires in the inner canyon were dismissed due to concern for firewood collection and additional human-made features (fire pits) within the wilderness. This alternative was dismissed because it was inconsistent with resource protection and preserving Black Canyon NP wilderness character.

MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE

Mitigation measures are presented as part of the action alternative. These management practices have been developed to lessen the adverse effects of the proposed action. Mitigation measures would be funded through the construction budget unless specifically noted in table 8.

TABLE 8. MITIGATION MEASURES OF THE PREFERRED ALTERNATIVE

Resource Area	Mitigation	Responsible Party
Visitor Use and Experience	Park would provide sufficient advance notice and post information on the Web sites and backcountry interpretive boards regarding: <ul style="list-style-type: none"> - removal of vault toilets and switch to carry out requirements - plans to discontinue commercial use authorization for guided climbing in the inner canyon 	NPS
	Park would stock personal human waste pack-out system bags for sale at South Rim Visitor Center.	NPS
Threatened and Endangered Species	Prior to finalizing and constructing new trails, surveys would be conducted for threatened and endangered species, and trails designed and located to avoid these resources.	NPS
Wetlands	Prior to finalizing and constructing new trails, surveys would be conducted for wetlands, and trails designed and located to avoid these resources.	NPS
Cultural Resources	Prior to finalizing and constructing new trails, surveys would be conducted for archeological resources, and trails designed and located to avoid these resources.	NPS

TABLE 9. ALTERNATIVES COMPARISON TABLE – DIFFERENCES

	No Action Alternative				Proposed Action			
	<p>The wilderness backcountry management plan would not be implemented. The park staff would continue to implement existing management programs and practices in the backcountry and wilderness areas. The park staff would continue to respond to future needs and conditions without a framework and programmatic guidance for consistent direction in decision making in managing wilderness and backcountry.</p> <p><u>Meets project objectives?</u></p> <p>No. Continuing the existing management approach would neither improve or preserve wilderness and backcountry qualities in the long term.</p>				<p>The wilderness backcountry management plan would be implemented. The park staff would management programs, activities, and practices in the backcountry and wilderness areas with a framework and programmatic guidance for consistent direction in decision making in managing wilderness and backcountry.</p> <p><u>Meets project objectives?</u></p> <p>Yes. Implementation of the Plan would improve or preserve wilderness and backcountry qualities in the long term.</p>			
Visitor Activities and Management	No Action Alternative				Proposed Action			
	Black Canyon NP		Curecanti NRA		Black Canyon NP		Curecanti NRA	
	IC	UP	EPMP	BLUE	IC	UP	EPMP	BLUE
Climbing	Interim Climbing Management Plan (inner canyon) applies	N/A	Climbing occurs but not covered by Plan	N/A	Adopt Climbing Management Plan	N/A	Extend Climbing Management Plan to EPMP	N/A
Commercial services / concessions	Guided climbing	None	None	Existing commercial services would continue	None	Appropriate commercial services would be considered	Appropriate commercial services would be considered	Appropriate commercial services would continue and new services would be considered
B.A.S.E. Jumping	Illegal jumps	N/A	Illegal jumps	N/A	Park adopt regulation banning B.A.S.E. jumping	N/A	Park adopt regulation banning B.A.S.E. jumping	N/A
Paragliding and hang gliding	Not allowed	Not allowed	Lack of landing sites	Emergency landing only	Park adopt regulation banning paragliding and hand gliding	Park adopt regulation banning paragliding and hang gliding	Park adopt regulation banning paragliding and hang gliding	Park adopt regulation banning paragliding and hang gliding, except emergency landing
Visitor Activities	Black Canyon NP		Curecanti NRA		Black Canyon NP		Curecanti NRA	

TABLE 9. ALTERNATIVES COMPARISON TABLE – DIFFERENCES

	No Action Alternative				Proposed Action			
	IC	UP	EPMP	BLUE	IC	UP	EPMP	BLUE
Education	Wilderness education and outreach	Wilderness education and outreach	N/A	N/A	Incorporate wilderness and backcountry into interpretive planning Increase wilderness and backcountry awareness among visitors and staff Update and deliver current messages on wilderness and backcountry ethics			
-Horseback riding/ pack animals	-Not occurring	-Horse use of Deadhorse Trail	-Not occurring	-Allowed on -Dillon Pinnacles Trail	-No change	-No change	-No change	-Horse use would be allowed in areas and on routes that are proposed for motorized vehicle access in the Motorized Vehicle Access Plan and on selected connector trails -Additional areas below the high water line would be considered for horse use as the necessary cultural resource evaluations are conducted
-Hiking	-Trails and routes -Access permit per draft Resource Management Plan -Red Rock Canyon Lottery	-Two trails (1 horse) or cross-country -No permit	-A few trails -No permit	-A few trails No permit	-No new trails or routes -Continue access permit with adaptive management	-Consider new trails	-Consider new trails	-Consider new trails and connection to other federal lands
-Bicycles	-Not allowed	-Not allowed	-Not Allowed	-Not allowed	-No change	-No change	-No change	-Allow on motorized access routes and on Beaver Creek Trail

TABLE 9. ALTERNATIVES COMPARISON TABLE – DIFFERENCES

	No Action Alternative				Proposed Action			
-Camping	-Allowed at sites established or in undesignated sites. Access permits	-Allowed, undesignated sites, no permits	-No permit / registration -Lake edge campsites	-Permit to boat, but not to camp -Boat in sites – some developed with picnic tables, fire rings, toilets	-Camping subzones -Pristine – not designated sites -Primitive – designated sites	-No change	-No change	-No change
Natural Resources and Management	Black Canyon NP		Curecanti NRA		Black Canyon NP		Curecanti NRA	
	IC	UP	EPMP	BLUE	IC	UP	EPMP	BLUE
-Toilets	-Two vault toilets	-None	-Toilets	-Toilets	-Remove toilets, pack out waste, monitor human waste	-Monitor human waste	-Monitor human waste	-Monitor human waste
-Air	-Class 1 at wilderness -Closest monitoring Weminuche. Install air monitoring equipment outside wilderness	-Class 1 at wilderness -Closest monitoring Weminuche	-Closest monitoring Weminuche	-Closest monitoring Weminuche	-No change	-Install air monitor outside wilderness	-Install air monitor	-Install air monitor
-Water quality	-Gold Medal Water -Monitor water quality in mainstem Gunnison and Red Rock Canyon including selenium issues	N/A	-Monitor	-Monitor	-Pursue appropriate water designation	N/A	-No change	-No change
-Soil	-Some erosion on steep routes	N/A	N/A	N/A	-Improve route alignment, construction – to reduce erosion	N/A	N/A	N/A
-Plants – invasive	-Target tamarisk	-Very active management -Upland species	-Some management – tamarisk and other species	-Some management – tamarisk and other species	-No change	-Removal and restoration of native plants/habitat – more active	-More active	-More active

TABLE 9. ALTERNATIVES COMPARISON TABLE – DIFFERENCES

	No Action Alternative				Proposed Action			
-Plants – communities	N/A	-Affected by livestock grazing, BLM manages permits, trespass cattle, impounds for livestock; fences, ponds, soil erosion and compaction	N/A	-Affected by grazing, BLM manages permits, trespass cattle, impounds for livestock; fences, ponds, soil erosion, compaction	N/A	-Increase NPS consultation with BLM; fencing to control cattle; removal of unnecessary structures	N/A	-Increase NPS consultation with BLM; fencing to control cattle; removal of unnecessary structures
Natural Resources and Management	Black Canyon NP		Curecanti NRA		Black Canyon NP		Curecanti NRA	
	IC	UP	EPMP	BLUE	IC	UP	EPMP	BLUE
-Plants - Fire	-Terrain limiting - use wildland fire to meet resource objectives	-Fire management plan – some wildland fires to meet resource objectives	-Fire management plan – limited role of fire (lack of NPS land)	-Fire management plan – some wildland fires to meet resource objectives	-No change	-Monitor wildland fire to restore natural conditions	-No change	-No change
-Elk	N/A	-Some collaring, no hunting	-Some hunting	-Some hunting	N/A	-More scrutiny, MRA for collaring	-No change	-No change
-Gunnison sage-grouse	N/A	-Important habitat - interagency consultation	N/A	-Important habitat - interagency consultation	N/A	-Same with more restoration	N/A	-Same
-Soundscapes	-Natural water -Helicopters (administrative) rescue	-Good -Affected by adjacent land use	-Good	-Affected by motorized boat and adjacent land uses	-Establish inventory and monitoring Work with adjacent land owners Education	-Establish inventory and monitoring Work with adjacent land owners Education	-Establish inventory and monitoring Work with adjacent land owners Education	-Establish inventory and monitoring Work with adjacent land owners Education
-Dark skies	-Very good but narrow	-Wide, moderately good, some adjacent land/town issues	-Very good	-Okay, but affected by adjacent land use and towns / Gunnison	-Establish inventory and monitoring and work within park and neighbors to take actions to improve dark skies	-Establish inventory and monitoring and work within park and neighbors to take actions to improve dark skies	-Establish inventory and monitoring and work within park and neighbors to take actions to improve dark skies	-Establish inventory and monitoring and work within Park and neighbors to take actions to improve dark skies

TABLE 9. ALTERNATIVES COMPARISON TABLE – DIFFERENCES

	No Action Alternative				Proposed Action			
-Wilderness	-Apply MRDG process for prohibited uses – chainsaws, trail maintenance, some mechanism	-Apply MRDG process for prohibited uses – chainsaws, trail maintenance, some mechanism	N/A	N/A	-Stronger MRDG process and staff education -Programmatic MRA for use is needed	-Stronger MRDG s process and staff education Programmatic MRA for use is needed	N/A	N/A
-Pets	-Not allowed	-Pets on leash are allowed only on the Rim Rock Trail, Cedar Point Nature Trail, and North Rim Chasm View Nature Trail -Pets are not allowed elsewhere in backcountry or wilderness areas	-Pets are permitted in Curecanti and allowed on all hiking trails, but must be leashed at all times -Pets are not allowed on the Morrow Point boat tour	-Pets are permitted in Curecanti, and allowed on all hiking trails, but must be leashed at all times	-No change in inner canyon zone -Gunnison Gorge zone: allow leashed dogs in two campsites as part of developing consistent regulations with BLM	-No change in uplands zone -Gunnison Gorge zone: no dogs in backcountry or wilderness areas	No change	-No change
-Scientific Activities	-Research permits -Apply Minimum Requirements Analysis (MRA)	-Research permits -Apply Minimum Requirements Analysis (MRA)	-Research permits	-Research permits	-Implement scientific action framework for research permits and MRA -Monitor cumulative impacts	-Implement scientific action framework for research permits and MRA -Monitor cumulative impacts	-Research permits	-Research permits
-Signs –	-Minimal	-Minimal	-Minimal	-Minimal	-Develop more detailed guidelines for wilderness -Mark wilderness boundary on trails (outside wilderness)	-Develop more detailed guidelines for wilderness -Mark wilderness boundary on trails (outside wilderness)	-Keep minimal, only for route finding, wood, small	-Keep minimal, only for route finding, wood, small

TABLE 10. ACTIVITIES AND RESOURCE MANAGEMENT ACTIONS THAT ARE THE SAME IN BOTH ALTERNATIVES

	Black Canyon NP		Curecanti NRA	
	IC	UP	EPMP	BLUE
Winter activities	Ice Climbing	Cross-country skiing, snowshoeing on Black Canyon Road developed area	Snowshoeing, ice climbing	Cross-country skiing, snowshoeing
Visitor – mechanized equipment	Prohibited by wilderness	Prohibited by wilderness	None	Some mechanized use of transportation per Off-highway Motorized Vehicle Access Plan
Fishing	Allowed Gold Medal Waters, no fish stocking	Allowed	Allowed	Allowed
Hunting	N/A	N/A	Allowed	Allowed
Plants – rare and sensitive	Monitoring in consultation	Monitoring in consultation	Most sensitive species	More rare plant populations
Peregrines	Monitored during sensitive times, climbing closures during nesting	N/A	Monitored during sensitive times, climbing closures during nesting	N/A
Cultural resources	Inventory and monitor	Inventory and monitor	Inventory and monitor	Inventory and monitor
Water flow	Work with BOR to assure delivery of NPS decreed water right	N/A	N/A	N/A

**SUMMARY OF ENVIRONMENTAL CONSEQUENCES /
IMPACT COMPARISON MATRIX**

Potential Environmental Impacts		
Impact Topic	No-action Alternative	Preferred Alternative
Soils	There would be no change, resulting in short- and long-term negligible to minor adverse and short- and long-term negligible to minor beneficial impacts to soils.	Implementation of the preferred alternative would result in short- and long-term negligible to minor adverse and beneficial impacts.
Wildlife	No change, resulting in direct and indirect, short- and long-term negligible to minor adverse and beneficial impacts to wildlife species and habitats.	Implementation of the preferred alternative would result in short- and long-term negligible to minor adverse and beneficial impacts to wildlife and habitat.
Vegetation	There would be no change, resulting in short- and long-term negligible to minor adverse and beneficial impacts to upland vegetation.	Implementation of the preferred alternative would result in short- and long-term negligible to minor adverse and beneficial impacts to upland vegetation.
Wetlands (including riparian wetlands)	There would be no change, resulting in short- and long-term negligible to minor adverse and beneficial impacts to wetlands and riparian communities.	Implementation of the preferred alternative would result in short- and long-term negligible to minor adverse and beneficial impacts to wetlands and riparian communities.
Threatened, Endangered, and Species of Special Concern	There would be no change resulting in a combination of short- and long-term negligible to minor beneficial effects to TES species.	Implementation of the preferred alternative would result in short- and long-term negligible adverse and beneficial impacts to TES species and habitat.
Black Canyon / Curecanti Operations	There would be no change to the operation of each unit, resulting in negligible effects to operations.	Implementation of the preferred alternative would result in short- and long-term negligible to minor beneficial, and minor adverse impacts to NPS operations.

Summary of Environmental Consequences / Impact Comparison Matrix

Potential Environmental Impacts		
Impact Topic	No-action Alternative	Preferred Alternative
Visitor Use and Experience	There would be would be long-term minor to moderate beneficial effects in promoting backcountry and wilderness visitor use.	Implementation of the preferred alternative would result in long-term minor to moderate beneficial effects in promoting backcountry and wilderness visitor use.
Wilderness and Backcountry Character	Most wilderness and backcountry qualities in Black Canyon NP and the backcountry qualities of Curecanti NRA are trending downward. There would be negligible short-term and minor long-term adverse impacts to wilderness character in Black Canyon and backcountry character in Curecanti NRA.	Implementation of the preferred alternative would result in negligible to moderate, short- and long-term, beneficial, and negligible to minor short- and long-term adverse impacts to wilderness and back country character in Black Canyon NP and backcountry character in Curecanti NRA.

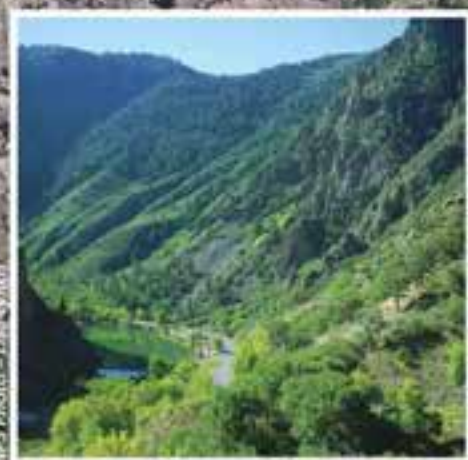
Chapter 3: Affected Environment and Environmental Consequences

Curecanti National Recreation Area

East Portal/ Morrow Point Zone

Desired Conditions-

<i>remote</i>	<i>peaceful</i>
<i>uncrowded</i>	<i>relaxing</i>
<i>natural</i>	<i>rugged</i>
<i>scenic</i>	<i>secluded</i>



CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a description and assessment of resources in Black Canyon NP and Curecanti NRA that may potentially be affected by implementation of the proposed action. A brief description of the general setting and climate are presented; followed by the methodology and assumptions for assessing potential impacts. This is followed by a description of projects and programs that make up the cumulative impacts scenario, and, as mandated by NPS policy, resource impairment is explained.

Each resource listed in the “Impact Topics Retained For Further Analysis” section in chapter 1 of this document is described in sufficient detail, followed by a discussion of the potential impacts of, first, the no-action alternative, followed by implementing the preferred alternative using the methodology described below.

LOCATION AND GENERAL DESCRIPTION OF THE PROJECT AREA

Black Canyon NP occupies the southwestern margin of the West Elk Mountains within the Canyonlands section of the Colorado Plateau physiographic province (Fenneman and Johnson 1946). Curecanti NRA occupies the locally indistinct boundary between the Colorado Plateau physiographic province to the west and the Southern Rocky Mountains physiographic province to the east, and is part of the Gunnison uplift formed some 60 million years ago as part of the Laramide Orogeny. The Colorado Plateau is a 130,000-square-mile basin ringed by highlands and dissected by deep canyons. The West Elk Mountains are volcanic in origin, actively erupting approximately 30 million years ago.

The Gunnison River watershed is bounded by the West Elk Mountains to the north, the Sawatch Range to the east, and the San Juan Mountains to the south. To the west, the elevation drops steeply to the broad river valley of Delta, Colorado. Curecanti NRA narrowly parallels the Gunnison River, which flows westerly across a relatively broad valley upriver of Blue Mesa Dam and into the deeply incised upper reaches of the Black Canyon of the Gunnison, downriver from Blue Mesa Dam and Reservoir. Morrow Point and Crystal dams were constructed deep in the steep-walled inner reaches of the Black Canyon, downstream of Blue Mesa Dam. Morrow Point Dam is the tallest of the three dams at 469 ft (143 m). Blue Mesa Reservoir is the largest body of water in Colorado, with 96 miles (155 km) of shoreline (Thornberry-Ehrlich 2005), a surface area of 9,180 acres at full pool, and a storage capacity of 940,700 acre-feet of water (Redmond 2000).

Elevations within Black Canyon NP range from 6,547 ft (1,996 m) at East Portal to 8,302 ft (2,532 m) at Warner Point and 8,774 ft (2,676 m) at Signal Hill on the South Rim and 9,040 ft (2,757 m) at Poison Spring Hill on the North Rim. Elevations within Curecanti NRA range from 6,547 ft (1,996 m) at East Portal to 9,500 ft (2,896 m) near Sheep Knob (O’Dell et al. 2005). Within Black Canyon, the Gunnison River loses elevation at an average of 43 ft/mile (8 m/km). At Warner Point, the canyon is 2,722 ft (829 m) deep. The western park boundary lies adjacent to the Gunnison Gorge Wilderness area at approximately 6,000 ft (1,829 m) elevation on the uplands and approximately 5,400 ft (1,646 m) on the Gunnison River.

Climate

Records of climatic conditions have been maintained continuously since 1951 near Black Canyon NP and the recreation area boundary at Cimarron (Station 051609), and since 1967 at Blue Mesa Reservoir (Station 050797) (WRCC 2010). Black Canyon NP and Curecanti NRA are characterized by a semiarid climate, averaging 9.5 inches to 13.4 inches (24.1 centimeters [cm] to 34.0 cm) of precipitation annually at the Cimarron and Blue Mesa Reservoir stations, respectively. Precipitation is relatively evenly distributed throughout the year and takes the form of afternoon showers and thunderstorms from July through October; total annual snowfall averages approximately 55.0 inches to 65.0 inches (139.7 cm to 165.1 cm), with December and January being the snowiest months. Southwest winds predominate with episodes of high velocity.

Conditions within Black Canyon NP and Curecanti NRA may change significantly during a day, from low to high elevations, and between seasons. Summers are short to moderate in length with hot days averaging 85.3 degrees Fahrenheit (°F) to 83.3°F (29.6 degrees Celsius [°C] to 28.5°C), and cool nights averaging 43.8°F to 47.0°F (6.6°C to 8.3°C) in July at the Cimarron and Blue Mesa Lake stations, respectively. Hot days typically approach 90.0°F (32.2°C); the hottest day on record was 98.0°F (36.7°C) on July 30, 1963. Winters are cold with an average maximum temperature of 33.8°F to 27.1°F (1.0°C to 2.7°C) and an average minimum temperature of 0.5°F to -1.1°F (-17.5°C to -18.4°C) occurring in January. The coldest day on record was -43.0°F (-41.7 °C) on January 13, 1963. Canyon bottoms are typically 10°F–15°F (5 °C–8°C) warmer than the canyon rims during summer months.

METHODOLOGY

The National Park Service bases impact analyses and conclusions on the review of existing literature and park studies, information provided by experts at the park and other agencies, professional judgments, and park staff insights.

Context, Duration and Intensity, and Type of Impact

The following definitions were used to evaluate the context, intensity, duration, and cumulative nature of impacts associated with project alternatives.

Context. Context is the setting within which an impact is analyzed such as local, parkwide, or regional. The Council on Environmental Quality requires that impact analyses include discussions of context. For this environmental assessment, local impacts would occur within the general vicinity of where the action takes place, while parkwide impacts would affect a greater portion of the park; regional impacts would extend outside the limits of the park.

Duration. The duration of an impact is the time period for which the impacts are evident and are expressed in the short term or in the long term. A short-term impact would be temporary in duration. Depending on the resource, impacts may last as long as construction takes place, or a single year or growing season, or longer. Impact duration for each resource is unique to

that resource. Impact duration for each resource is presented in association with impact intensities for each impact topic (resource).

Type of Impact. Impacts can be beneficial or adverse. Beneficial impacts would improve resource conditions, while adverse impacts would deplete or negatively alter resources.

Intensity. Impact intensity is the degree to which a resource would be adversely affected. The criteria that were used to rate the intensity of the impacts for each resource topic is presented for each topic (resource).

Cumulative Effects

Council on Environmental Quality regulations, which implement the National Environmental Policy Act, require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

Cumulative impacts are considered for all alternatives and are presented at the end of each impact topic discussion analysis.

Projects that Make Up the Cumulative Impact Scenario

To determine potential cumulative impacts, projects within the project area and surrounding the park were identified. Potential projects identified as cumulative actions included any planning or development activity that was completed, that is currently being implemented, or that would be implemented in the reasonably foreseeable future.

These cumulative actions are evaluated in the cumulative impact analysis, in conjunction with the impacts of each alternative, to determine if they would have any additive effects on a particular natural resource, cultural resource, visitor use and experience, or park operation. Because some of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project.

A number of projects and planning efforts ongoing in parks are described and evaluated as a part of the no-action alternative. Other actions and issues relative to cumulative impacts are:

- Minor boundary correction legislation.
- Acquisition of former Nicholas Property, now managed by the Bureau of Land Management, allows new access near the Red Rock Canyon area of Black Canyon NP. Montrose County has constructed a bridge across the drainage for access and the Bureau of Land Management has constructed a recreation site at Elephant Skin Road associated with an off-highway vehicle site.

- Development outside the park boundaries.
- Adoption of the preferred alternative in the Motorized Vehicle Access Plan.

Impairment of National Park Values

In addition to determining the environmental consequences of the preferred and other alternatives, NPS *Management Policies 2006* and Director's Order 12 require analysis of potential effects to determine if 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. NPS managers must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give NPS 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 NPS management discretion to allow certain impacts within parks, that discretion is limited by statutory requirements 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 NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent that it affects 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 to opportunities for enjoyment of the park
- identified as a goal in the park general management plan or other relevant NPS planning documents

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. The National Park Service does not analyze recreational values / visitor experience (unless impacts are resource based), socioeconomic values, health and safety, or park operations for impairment. An impairment determination is included in appendix I.

SOILS

The Gunnison River has exposed a wide range of rocks from which soils have developed, including 1.7-billion-year-old gneiss and schist of the Precambrian era to Mesozoic fossiliferous sedimentary rocks and Cenozoic volcanic rocks, and modern unconsolidated

sediments (Taylor 1999). Precambrian rocks are usually buried beneath overlying rock layers, and the Black Canyon of the Gunnison is considered one of the best exposures of these ancient rocks in the world. Lying on top of the Precambrian rocks are Mesozoic sedimentary strata. No intermediate Paleozoic sedimentary rocks exist within Black Canyon NP and Curecanti NRA—approximately 370 million years of earth history are missing from the landscape. The region includes geologic processes from Laramide times to present—uplifted rocks have been eroded and covered, then weathered and eroded into the mountain, plateau, and canyon landscape.

Nearly all rock outcrops in Black Canyon NP and Curecanti NRA are metamorphic or igneous; however, on the canyon rims and plateaus sedimentary geologic formations are also exposed. The metamorphic geologic formations are middle Precambrian (formed about 1.7 billion years to 542 million years ago); the sedimentary geologic formations were deposited during the Mesozoic era (about 285 to 70 million years ago); volcanic breccia and tuff were deposited during the Cenozoic era (about 70 million years ago to present times); and overlying recent surficial deposits are readily observable. Generally, the processes of weathering, erosion, and sedimentation contribute to the formation of soil, eolian sands and loess, new alluvium (stream and lake sediments), talus, colluvium, and landslide deposits. Surficial deposits may be devoid of vegetation and appear as rock slides, channel bottoms, erosion fans, barrens, open water, or other unvegetated sites. A large area formerly covered with soils and surficial deposits in Curecanti NRA is underwater part or all of the year.

Soil of portions of Gunnison and Montrose counties appear in nine U.S. Forest Service and U.S. Department of Agriculture, Natural Resources Conservation Service-Soil Conservation Service soil surveys. Soil series or other soil combinations are described for Black Canyon NP and Curecanti NRA and vary widely in erodibility and productivity, depending on topographic position, parent material, local hydrology, slope, and other factors influencing soil formation processes (NRCS-SCS 2007). Soil texture consists primarily of variations of loam and sand, although heavier soils occur on slopes and mountains. Gravels are present in river wash associated with streambeds, gulches, and floodplains. See appendix J for a complete listing of soil associations.

Biological soil crusts are present on some sites within Black Canyon NP and more rarely in Curecanti NRA; they historically received little disturbance and stabilize and protect soil surfaces from erosive forces. The crusts reduce wind and water erosion, fix atmospheric nitrogen, and contribute to soil organic matter (Eldridge and Green 1994 *in* Belnap et al. 2001). The biological soil crusts also function as living mulch that retains soil moisture and discourages growth of annual nonnative plant species including cheatgrass (*Bromus tectorum*) (Belnap et al. 2001). Biological soil crusts within Black Canyon NP occupy the nutrient-poor openings between tree canopies and clumps of vascular plants and also hold thin soils over bedrock.

Soils Environmental Consequences

All available information on geologic parent materials, landscape features, and soils of Black Canyon NP and Curecanti NRA with the potential to be impacted was compiled from agency databases, previous earth science studies, and vegetation inventory projects. Predictions

concerning short- and long-term site impacts were based on previous projects in mid-elevation montane woodlands and shrublands and shale badlands environments with similar steep slopes, exposures, and soils. The thresholds of change for the intensity of an impact to soils are defined as follows:

Impact Intensity	Intensity Definition
Negligible	Soils would not be affected by compaction, burial, erosion, removal, etc., or the effects to soils would be below or at the lower levels of detection. Any effects to soils would be slight with no measurable or perceptible changes.
Minor	The effects to soils due to compaction, burial, erosion, removal, etc., would be detectable, small, and localized. Changes would not be expected to be outside the natural range of variability and would be short term.
Moderate	The effect on soils due to compaction, burial, erosion, removal, etc., would be readily apparent and result in a long-term change to the soils character, including erosion patterns in a localized area.
Major	The effect on soils due to compaction, burial, erosion, removal, etc., would be readily apparent, substantially change the character of the soils and erosion patterns over a large area, and likely would be permanent.

Soil impacts would be considered short term if the soils recover in less than three years and long term if the recovery takes longer than three years.

Soils Environmental Consequences Under the No-action Alternative

Under the no-action alternative, soils of Black Canyon NP and/or Curecanti NRA would be managed under the general management plan (NPS 1997), related planning documents for research, inventory, monitoring, fire, grazing, and maintenance, and future amendments. Occasional slides and rock falls (mass wasting) would naturally occur from geologic formations and slopes, typically associated with precipitation events and would result in soil movement, covering some developed soils, and produce sedimentation to the drainages and reservoirs. Soils of the canyon rims and slopes are naturally subject to slumping, rockfall, exposure, and erosion from runoff.

Soils of the Black Canyon inner canyon slopes and rims are presently disturbed during hiking and scrambling activities necessary to access the Gunnison River on 10 named routes, resulting in short- and long-term negligible to minor adverse impacts due to compaction and exposure to wind and water erosion. Soils of Black Canyon NP inner canyon floodplain and riverbank are presently disturbed due to campsite, cache, and access trail establishment and use resulting in short- and long-term negligible to minor adverse impacts due to compaction, surface scraping, litter displacement, and herbaceous vegetation removal making soils vulnerable to wind and water erosion and nonnative species invasion. Removing tamarisk shrubs from riverbanks and other mesic sites would reduce the vegetative cover and increase erosion of sediments, resulting in short-term negligible impacts to floodplain soils due to scouring; there would be long-term environmental quality benefits.

Visitor use in Black Canyon NP and Curecanti NRA includes hiking existing trails of Black Canyon NP uplands (North Vista, Oak Flat, Rim Rock, Warner Point, Upland, and Deadhorse, Curecanti NRA EPMP zone (Hermit's Rest and Pine, Mesa, Curecanti, and Crystal creeks), and Blue Mesa zone (Neversink and Dillon Pinnacles) and low levels of off-trail hiking, angler and hunter access, and camping. Other uses and actions include livestock grazing, recreation development, and some management actions. These activities and actions result in short- and long-term negligible to minor adverse impacts due to soil and biotic crust compaction, surface scraping, litter displacement, and herbaceous vegetation removal making affected soils vulnerable to wind and water erosion and nonnative species invasion. Soils of Grizzly Gulch near Black Canyon Road that were previously disturbed by waterline installation would receive impacts during maintenance activities, resulting in long-term negligible adverse impacts due to soil compaction and/or mixing, making soils vulnerable to erosion and nonnative species invasion. Within Curecanti NRA, soils of developed campsites (Elk Creek, Lake Fork, and Stevens Creek) have been sealed under pavement; soils of reservoir shorelines and boat-in campsites are affected due to campsite establishment and use resulting in short- and long-term negligible to minor adverse impacts due to compaction and vegetation removal making soils vulnerable to wind and water erosion and nonnative species invasion.

Livestock grazing would compact soils and break up biotic soil crusts, resulting in short- and long-term minor adverse impacts due to exposure of soils to erosion and nonnative species invasion. Naturally ignited wildfires would be managed under the fire management plan resulting in short- and long-term negligible to minor adverse impacts to soils due to heating, exposure, and subsequent erosion by wind and water. The 80-acre Green Grizzly prescribed burn exposed some soils to heating and erosion resulting in short-term negligible adverse impacts. Early development of site-specific hydric soils would be interrupted and revert to upland soil development following removal of an illegal stock pond, resulting in long-term negligible beneficial impacts to formerly upland soils.

Removal or other treatment of nonnative plant species from upland sites would reduce the vegetative cover and increase exposure to wind and water erosion; reseeding or otherwise revegetating treated sites would reduce effects to short term negligible to minor and adverse, but in the long term, the effects of revegetation would be minor and beneficial to soils. Access to clear downed tree branches and trunks from fencelines and trails would result in short-term negligible beneficial impacts to soils by reducing compaction related to trespass cattle access and opening trails, thus reducing social trailing around downed trunks and branches.

For both Black Canyon NP and Curecanti NRA, research of soil properties, erosion potential, and biotic crust, among other soils research, would inform natural resource management programs resulting in long-term minor beneficial impacts. Using the MRDG process to evaluate administrative actions in wilderness and minimize impacts by determining appropriate techniques and equipment would result in short-term negligible to minor beneficial impacts on wilderness soils and biotic soil crusts. Management actions to close and rehabilitate historically disturbed sites, including selected two-track roads, would result in long-term negligible to minor beneficial impacts to soils by allowing soil development to naturally occur.

Cumulative Impacts. The no-action alternative consists of actions under current management and other plans and the cumulative impact scenarios previously described. Cumulative effects

of implementing future management actions and plans with respect to soils (e.g., Black Canyon NP resource management plan, Curecanti NRA resource protection study, fire management plan, and applying the MRDG process) would be likely to result in a combination of short- and long-term negligible to minor beneficial effects due to the resource management focus. Past, present, and reasonably foreseeable future projects with the potential to affect soils and biotic crust include implementation of the minor boundary correction legislation in the Black Canyon uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan, which would have short- and long-term negligible beneficial impacts. The no-action alternative would contribute a negligible to minor effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse, and short- and long-term negligible to minor beneficial impacts to Black Canyon NP and Curecanti NRA soils and biotic soil crusts under the no-action alternative. The no-action alternative would contribute short- and long-term negligible to minor beneficial impacts due to cumulative effects to soils and biotic soil crusts (when present).

Soils Environmental Consequences Under the Preferred Alternative

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA. Many of the natural processes, visitor use, grazing, and management actions that are currently affecting soils and biotic crusts, as described under the no-action scenario, would remain the same. Management actions and strategies associated with the preferred alternative that would have the potential to affect soils and biotic crusts include new trail development, increased recreational opportunities, and implementing management strategies when necessary.

Potential new trail construction on the Black Canyon uplands zone (North Vista Trail extension to overlook and loop, North Rim Ranger Station to Deadhorse Trail, South Rim Trail, Red Rock Canyon access, and Chukar Trail to Red Rock Canyon); Curecanti NRA Blue Mesa zone (Stevens Creek to Elk Creek and Ponderosa Campground to the access road into Forest Service lands); and the Curecanti NRA EPMP zone (Pine Creek to Blue Creek) would disturb up to 9.7 acres of soils, some with biotic crust, resulting in short- and long-term negligible adverse impacts due primarily to loss of vegetation cover, wind and water erosion, and nonnative species invasion.

Impacts to soils resulting from natural or prescribed fires, BLM Grizzly Gulch waterline maintenance or removal, nonnative plant species control and site restoration, chainsaw use to maintain fences and open trails, and permitted or trespass livestock grazing would be the same as described under the no-action alternative.

Effects to soils related to any additional research and monitoring, MRDG process, maintenance activities, and management actions to control nonnative species and rehabilitate sites would be the same as described under the no-action alternative. The soils and biotic crusts of Black Canyon NP and Curecanti NRA would generally remain intact and would be managed under the proposed Wilderness and Backcountry Management Plan and existing

general, resource, and fire management plan provisions; therefore, there would be short- and long-term direct and indirect negligible adverse impacts to soils management.

Cumulative Impacts. The preferred alternative consists of actions under the Wilderness and Backcountry Management Plan and the management and other plans previously described. Cumulative effects of implementing future management actions and plans with respect to soils (e.g., defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA) would likely result in a combination of short- and long-term negligible to minor beneficial effects due to the resource protection and management focus. Past, present, and reasonably foreseeable future projects with the potential to affect soils include implementation of the minor boundary correction legislation in Black Canyon NP uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan, which would have short- and long-term negligible beneficial impacts. The preferred alternative would contribute a negligible to minor effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse and beneficial impacts to soils of Black Canyon NP and Curecanti NRA under the preferred alternative. The preferred alternative would contribute short- and long-term negligible to minor beneficial effects to cumulative impacts to soils and biotic crusts (when present).

WILDLIFE

Vertebrate wildlife species that have been observed or could reasonably occur within Black Canyon NP (BLCA) and Curecanti NRA (CURE) include:

Mammals		Birds		Reptiles		Amphibians		Fish	
BLCA	CURE	BLCA	CURE	BLCA	CURE	BLCA	CURE	BLCA	CURE
67	71	173	276	11	7	2	3	18	22

Source: NPS 2007

Fewer species may occur in Black Canyon NP due to dry upland habitats, large areas of exposed geology, and the narrow canyon. The large reservoirs of Curecanti NRA provide habitat for several additional species, particularly waterfowl and shorebirds.

The most common large mammals of Black Canyon NP and Curecanti NRA include elk, mule deer, bighorn sheep, American black bear, and mountain lion. Elk use tall shrubland, woodland, and forest habitats of Black Canyon NP and Curecanti NRA during the late fall through spring seasons. Mule deer use many habitat types within Black Canyon NP and Curecanti NRA and are year-around residents; mule deer spend late summer to winter at the lower elevations around the reservoirs and rivers, in the pinyon – juniper woodland stands, and in adjacent agricultural land and migrate higher in elevation with the snow melt. The bighorn sheep use shrubland, woodland, and forest habitat north and south of the reservoirs

and are often observed near the highway seeking water from the reservoir, roadside forbs, and possibly minerals from winter road treatments.

Among the smaller mammal species, the American beaver (*Castor canadensis*) builds dams in pond water where willow and cottonwood stands used for forage and dam construction have become established. Typically, beaver activity occurs within the stream tributary to the reservoir system and occasionally along reservoir shorelines. Riparian, stream, pond, and lakeshore habitats and human developments are also typically used by the northern raccoon (*Procyon lotor*). Another common small mammal is the striped skunk (*Mephitis mephitis*), which uses a variety of shrubland habitats and may occur around human dwellings and outbuildings. The deer mouse (*Peromyscus maniculatus*) is perhaps the most abundant small mammal in the area, occupying most habitats within Black Canyon NP and Curecanti NRA; species of squirrels (*Tamiasciurus* spp.), ground squirrels (*Spermophilus* spp.), and chipmunks (*Neotamias* spp.) are also common. There are 15 species of bats that forage and roost in and adjacent to Black Canyon NP and Curecanti NRA.

Mammal species that may be occasionally to rarely observed in Black Canyon NP and Curecanti NRA include species of bats, voles, shrews, and mice. Lagomorphs include the desert and mountain cottontail (*Sylvilagus audubonii* and *S. nuttallii*) and may include rare sightings of the snowshoe hare (*Lepus americanus*) and white-tailed jackrabbit (*L. townsendii*). North American porcupine (*Erithizon dorsatum*) was positively identified in both national park system units; porcupines often leave gnaw marks and strip bark from branches and tree trunks of pine species. The house mouse (*Mus musculus*) is the single confirmed nonnative small mammal occurring in Black Canyon NP and Curecanti NRA.

A variety of avian species have been listed as common to abundant within the available Black Canyon NP and Curecanti NRA grassland, shrubland, woodland, forest, cliff, shoreline, and open water habitats (NPS 2007). Corvids that are considered common within Black Canyon NP and Curecanti NRA include the black-billed magpie (*Pica hudsonia*) and common raven. Some commonly occurring sparrows include Brewer's, Vesper, and song (*Spizella breweri*, *Pooecetes gramineus*, and *Melospiza melodia*), which use upland shrubland and woodland habitats. Additional common to abundant passerine bird species include the thrushes, American robin (*Turdus migratorius*) and sage thrasher (*Oreoscoptes montanus*); the warblers, black-throated gray (*Dendroica nigrescens*), orange-crowned (*Vermivora celata*), Virginia's (*Vermivora virginiae*), and yellow (*Dendroica petechia*); the vireos, Plumbeous (*Vireo plumbeous*) and warbling (*Vireo gilvus*); the wrens, rock (*Salpinctus obsoletus*) and house (*Troglodytes aedon*); the towhees, green-tailed (*Pipilo chlorurus*) and spotted (*Pipilo maculatus*); and the horned lark (*Eremophila alpestris*), mountain bluebird (*Sialia currucoides*), ruby-crowned kinglet (*Regulus calendula*), blue-gray gnatcatcher (*Polioptila caerulea*), common nighthawk (*Chordeiles minor*), dusky flycatcher (*Empidonax olberholseri*), mourning dove (*Zenaidura macroura*), northern flicker (*Colaptes auratus*), dark-eyed junco (*Junco hyemalis oreganus*), western tanager (*Piranga ludoviciana*), and black-headed grosbeak (*Pheucticus melanocephalus*).

Waterfowl and shorebirds use the reservoir habitats of Curecanti NRA. Of these avian species, the Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), spotted sandpiper (*Actitis macularia*), and killdeer (*Charadrius vociferus*) are abundant. Avian species common to the region and that forage and nest largely over or near water bodies include the cliff

swallow (*Petrochelidon pyrrhonota*), violet-green swallow (*Tachycineta thalassina*), white-throated swift (*Aeronautes saxitalis*), and red-winged blackbird (*Agelaius phoeniceus*). The American peregrine falcon is a common raptor species that nests on cliff faces and often targets waterfowl chicks when hunting; species of raptors that occasionally occur in the area include the owls, barn (*Tyto alba*) and flammulated (*Otus flammeolus*). Nonnative avian species using habitats within Black Canyon NP and Curecanti NRA seasonally or year-round include the ring-necked pheasant (*Phasianus colchicus*), Chukar or partridge (*Alectoris chukar*), rock dove or pigeon (*Columba livia*), European starling (*Sturnis vulgaris*), and house sparrow (*Passer domesticus*).

Limited numbers of herpetile species occur in habitats of Black Canyon NP and Curecanti NRA. Reptiles considered abundant or common include the common sagebrush lizard (*Sceloporus graciosus*), plateau lizard (*Sceloporus tristichus*), eastern collared lizard (*Crotophytus collaris*), plateau striped whiptail (*Cnemidophorus velox*), tree lizard (*Urosaurus ornatus*), and terrestrial garter snake (*Thamnophis elegans*). The terrestrial garter snake occurs predominantly in riparian and wetland habitats while the lizard species occur primarily in sagebrush and pinyon-juniper habitats. The tiger salamander (*Ambystoma tigrinum*) is the most common amphibian within Black Canyon NP and Curecanti NRA. While small patches of habitat suitable for the western chorus frog (*Pseudacris triseriata*) exists in the very eastern edge of Curecanti NRA, its presence has not been confirmed. The northern leopard frog (*Rana pipiens*) is status unconfirmed in both units. This amphibian species typically occurs in aquatic, emergent wetland, and riparian habitats. The National Park Service does not allow collection of any natural materials (rocks, plants, animals, etc.), including capturing the tiger salamander larvae from within Black Canyon NP or Curecanti NRA boundaries.

The construction of dams on the Gunnison River inundated riparian habitat, altered stream flow patterns and temperature regimes, modified or eliminated native fish spawning habitat, and along with stocking programs, changed the composition of fish species and fish-food organisms in the reservoirs and river habitats downstream of the dams (O'Dell et al. 2005). One native trout species, the Colorado River cutthroat (*Onchorhynchus clarkii pleuriticus*), persists in headwater streams tributary to the reservoirs. The white sucker (*Catostomus comersoni*), a native to the Colorado eastern slope, is also common, but introduced in the reservoirs.

The introduction of seven nonnative coldwater fish species into the stream and reservoir system has created a valuable sport fishing resource with approximately 3 million fish stocked into the system annually (NPS 2010a). Fish common to Curecanti NRA are the rainbow trout, brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), and lake trout or mackinaw (*Salvelinus namaycush*). Additionally, Blue Mesa Reservoir provides the largest kokanee salmon (*Oncorhynchus nerka*) fishery in the United States (NPS 2010c). An illegal stocking prior to 2000 also introduced the warm water game fish yellow perch (*Perca flavescens*) into Blue Mesa Reservoir (NPS 2010c).

The Colorado Division of Wildlife manages the sport fishery of Black Canyon NP and Curecanti NRA with input from the National Park Service and determines bag and possession limits for anglers. Fishing within Blue Mesa, Morrow Point, and Crystal reservoirs is important to the economy of Gunnison and Montrose counties and the region. Beyond the immediate economic effects in the Gunnison County region, kokanee salmon production at Blue Mesa Reservoir is important for other sport fisheries in Colorado (approximately 60% of the eggs

needed to stock fingerlings in 26 other lakes and reservoirs in the state are acquired from Blue Mesa Reservoir kokanee salmon).

Since the late 1990s, the kokanee salmon fishery has seen a 70% decline in the population even though the number of kokanee salmon fingerlings stocked has been increased. It is thought that lake trout are consuming significant numbers of kokanee salmon and that the predator-prey relationship is dangerously out of balance (CDOW 2010c). To restore a balance between kokanee salmon and lake trout, the Colorado Division of Wildlife is removing lake trout that are 38 inches (96.5 cm) or less. Research into prey items, possible regulation changes, increased law enforcement, as well as the active removal of some lake trout would continue until Colorado Division of Wildlife determines that the fishery of Blue Mesa Reservoir is once again balanced.

Annual population estimates conducted in the Gunnison Gorge have shown a marked shift in trout species in the last 10 years due to the presence of whirling disease in the Aspinnall Unit and the Gunnison River. These estimates can be easily extrapolated to the Gold Medal Waters of the Black Canyon and show a dominant brown trout fishery with little recruitment of rainbow trout to the system. The Colorado Division of Wildlife is beginning to introduce more whirling disease-resistant rainbow stock to the Gunnison Gorge and the East Portal area of Curecanti NRA.

The Gunnison River within Black Canyon, beginning 200 yards (183 m) below Crystal Dam, is designated as a Gold Medal stream by the Colorado Division of Wildlife (a portion of 168.0 miles (270.4 km) of Colorado rivers and streams so designated). The Gold Medal designation indicates this Gunnison River reach is managed for populations of large fish and further stipulates that fishing is by use of artificial flies and lures only and all rainbow trout must be returned to the water immediately after landing (CDOW 2010d). Fishing the Black Canyon and Gunnison Gorge reaches of the river is extremely popular during the annual stonefly hatch, which occurs in late spring/early summer.

Wildlife Environmental Consequences

Impact Intensity	Intensity Definition
Negligible	There would be no measurable effect or perceptible changes in native wildlife species/populations or habitats in terms of size, integrity, or continuity. Any effects would be on a small localized scale.
Minor	Impacts would be measurable or perceptible, localized, and occur in a relatively small area. The overall viability of the native wildlife species/populations or habitats would not be affected and adverse impacts would recover naturally if no further impact occurs.
Moderate	Impacts would cause changes in the native wildlife species/populations (e.g., abundance, distribution, quantity, or quality) or habitats and would be localized within Black Canyon NP and Curecanti NRA.

Impact Intensity	Intensity Definition
Major	Impacts to the native wildlife species/populations or habitats would be substantial, observable, and occur over a large area of Black Canyon NP and Curecanti NRA, including adjacent lands.

The duration of wildlife impacts is considered short term if the recovery is less than one year from implementation of an action or visitor use, and long term if the recovery is longer than one year.

Wildlife Environmental Consequences Under the No-action Alternative

Under the no-action alternative, wildlife habitat that has become established in the NPS management zone would remain intact and subject to planned or emergency management and maintenance under the general management plan and related planning document provisions for wildlife species. Wildlife habitat types occurring within Black Canyon NP and Curecanti NRA include upland and riparian forest and woodland stands, upland and riparian shrublands, upland dwarf shrublands, upland and riparian herbaceous vegetation, and sparse badlands and scree slope vegetation, in addition to cliffs, rock outcrops, hills and slopes, draws, riparian and emergent wetlands, and aquatic. The floristic components are described in more detail in the “Vegetation” and “Wetlands” sections of this document. Each habitat may be used exclusively by wildlife species, or more typically, a variety of habitats are used by individual species within each species’ home range.

Common wildlife species in the Black Canyon NP inner canyon include birds, small mammals, and reptiles, in addition to black bears. When inner canyon recreation peaks in the summer, some wildlife species may be attracted to campsites in search of alternative food sources resulting in short term negligible adverse impacts. Seasonal use of campsites, including boat-in sites, would affect some wildlife due to human presence resulting in short-term negligible adverse impacts due to avoidance of or attraction to campsite locations.

Wildlife may experience occasional brief displacement or disruption of behavior as recreationalists move along the rim or into and through the canyon on established routes. These disruptions would not cause measurable impacts on native wildlife species and are short term and negligible. In general, trail use and off-trail hiking (where permitted) within Black Canyon NP and Curecanti NRA expose local wildlife to users on a short-term basis. Existing trails include those of Black Canyon NP uplands (North Vista, Warner Point, Deadhorse, and Oak Flat and Rim Rock) and Curecanti NRA EPMP zone (Hermit’s Rest and Pine, Mesa, Curecanti, and Crystal creeks), and Blue Mesa zone (Dillon Pinnacles, Cooper Ranch, Neversink, and Beaver Creek). Wildlife experienced minor habitat removal from the trails upon construction and could be affected in the short term by user presence resulting in short- and long-term negligible adverse impacts.

Removing invasive, nonnative tamarisk shrubs from riverbanks temporarily reduces small patches of cover for some individual songbirds and small mammals. However, this removal

improves overall native riparian habitat quality and therefore promotes native wildlife populations, having a long-term minor beneficial effect. Presently, established nonnative plant species stands provide potential wildlife cover, but no low quality habitat resulting in long-term minor adverse impacts to wildlife habitat. Removing or otherwise treating nonnative plant species from upland sites may reduce low quality wildlife habitat structure or forage resulting in long-term negligible beneficial impacts due to establishment of diverse native upland plant species.

Hunters accessing and using upland and riparian habitats would result in short-term negligible adverse impacts to individual game species of wildlife due to take, avoidance of areas, and human presence. Culling game wildlife populations by legal hunting methods has a long-term negligible to minor beneficial impact on habitat health. Anglers accessing and using river and streambanks for fishing would result in short-term negligible adverse impacts to individual wildlife using emergent wetland and riparian habitats causing short-term avoidance of the area and possible damage to nesting sites.

Livestock grazing would have no negligible effects to wilderness upland wildlife species. Wildlife that have become accustomed to using a livestock pond planned for removal and restoration would seek different watering sources; rehabilitation would result in long-term negligible beneficial wildlife impacts.

Ongoing weed management and native vegetation restoration at the restored Grizzly Gulch stock ponds may result in short-term negligible adverse impacts due to wildlife individual avoidance of the area. Wildlife would also be affected by loud noise and human presence during rare chainsaw and helicopter use within Black Canyon NP and Curecanti NRA, resulting in short-term negligible adverse impacts. Management use of helicopters and chainsaws in the inner canyon and elsewhere in the parks rarely occurs and is conducted under a MRDG process.

Black Canyon NP and Curecanti NRA may continue to conduct wildlife monitoring and habitat restoration projects in accordance with the general management plan. Possible impacts to wildlife include potential stress on wildlife due to human presence and short-term disturbance of habitat. Impacts would be short term and negligible. Some long-term minor beneficial impacts to wildlife populations may be realized as study results lead to improved management decisions.

Cumulative Impacts. The no-action alternative consists of actions under current management and other plans and the cumulative impact scenarios previously described. Cumulative effects of implementing future management actions and plans with respect to wildlife (e.g., Black Canyon NP Resource Management Plan, Curecanti NRA Resource Protection Study, fire management plan, and applying the MRDG process) would be likely to result in a combination of short- and long-term negligible to minor beneficial effects due to the resource management focus.

Past, present, and reasonably foreseeable future projects with the potential to affect wildlife include implementation of the minor boundary correction legislation in Black Canyon uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The no-

action alternative would contribute a negligible adverse and negligible to minor beneficial effect to cumulative impacts.

Conclusion. There would be direct and indirect short- and long-term negligible to minor adverse and beneficial impacts to wildlife species and habitats of Black Canyon NP and Curecanti NRA under the no-action alternative. The no-action alternative would contribute short- and long-term negligible to minor beneficial and adverse cumulative impacts on wildlife and wildlife habitat.

Wildlife Environmental Consequences Under the Preferred Alternative

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA. Many of the visitor use and management actions that are currently affecting wildlife, as described under the no-action scenario, would remain the same. Management actions and strategies associated with the preferred alternative that would have the potential to affect wildlife include new trail development, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary. Interpretive information prepared under the proposed Plan to educate the user public concerning wildlife species, behavior, life cycles, and habitats would result in long-term minor beneficial impacts because natural resource education is important to preserving wildlife and habitat.

Common wildlife species in the Black Canyon NP inner canyon include birds, small mammals, and reptiles, in addition to black bears. When inner canyon recreation peaks in the summer, some wildlife species may be attracted to campsites in search of alternative food sources. At these sites and elsewhere within Black Canyon NP and Curecanti NRA, wildlife would not have access to nonnative food. An extensive visitor education and food storage regulation enforcement program would severely limit or eliminate wildlife obtaining food sources from campsites. This would result in short- and long-term negligible to minor beneficial impacts due to wildlife avoidance of campsites. The Black Canyon NP and Curecanti NRA food storage and trash regulations would mitigate impacts of wildlife seeking food at campgrounds.

Potential new trail construction on the Black Canyon uplands zone (North Vista Trail extension to overlook and loop, North Rim Ranger Station to Deadhorse Trail, South Rim Trail, Red Rock Canyon access, and Chukar Trail to Red Rock Canyon); Curecanti Blue Mesa zone (Stevens Creek to Elk Creek and Ponderosa Campground to the access road into Forest Service lands); and the Curecanti EPMP zone (Pine Creek to Blue Creek) would affect up to 9.7 acres of upland woodland and less extensive shrubland habitat resulting in short- and long-term negligible to minor adverse impacts due to loss of wildlife habitat to construction, wind and water erosion, and nonnative species invasion. Wildlife species potentially affected by new trail construction and use include mammals (mule deer, American elk, bighorn sheep, chipmunks, ground squirrels, deer mice, etc.), birds (corvids, sparrows, thrushes, warblers, wrens, and doves), and reptiles (species of lizards), among other wildlife species. Wildlife, including birds, mammals, and reptiles, would be disturbed by construction and worker presence, hiker presence, and noise generation resulting in short-term negligible to minor

adverse impacts during construction and short-term negligible adverse impacts while hikers are present due to wildlife avoidance. Adverse impacts of trail construction and use would be mitigated to a negligible level by planning routes to avoid important wildlife habitat, and control erosion using best management practices, and by monitoring and controlling nonnative plant species along new trails.

In the inner canyon zone, common wildlife, including birds and small mammals, would have access to additional habitat following vault toilet removal at two sites, resulting in long-term negligible beneficial impacts due to site restoration using native plant species.

Impacts to wildlife resulting from natural or prescribed fires, ongoing stock pond restoration, nonnative plant species control, helicopter access and chainsaw use, hunter and angler access and game harvest, permitted livestock grazing, and unpermitted stock pond closure would be the same as described under the no-action alternative.

Effects related to any additional research and monitoring, applying the MRDG process, and management actions to control nonnative species and rehabilitate sites would be the same as described under the no-action alternative. The wildlife within Black Canyon NP and Curecanti NRA would generally remain undisturbed and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions for wildlife species; therefore, there would be short- and long-term direct and indirect negligible to minor adverse impacts to wildlife management.

Cumulative Impacts. The preferred alternative consists of actions under the Wilderness and Backcountry Management Plan and other plans previously described. Cumulative effects of implementing future management actions and plans with respect to wildlife, e.g., defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA would likely result in a combination of short- and long-term negligible to minor beneficial effects due to the resource protection and management focus. Past, present, and reasonably foreseeable future projects with the potential to affect wildlife include implementation of the minor boundary correction legislation in Black Canyon NP uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan, which would have short- and long-term negligible beneficial impacts. The preferred alternative would contribute a negligible to minor effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse and beneficial impacts to wildlife and habitat of Black Canyon NP and Curecanti NRA under the preferred alternative. The preferred alternative would contribute short- and long-term negligible to minor beneficial and adverse cumulative impacts to wildlife species and habitat within Black Canyon NP and Curecanti NRA.

VEGETATION

Black Canyon NP and Curecanti NRA occur within the Dry Domain on the edge between the Colorado Plateau Semidesert Province Tropical / Subtropical Steppe Division and Temperate

Steppe Division – Mountain Provinces and supports vegetation broadly classified as montane, temperate, or semidesert (Bailey 2001, Johnston et al. 2001). The area represents portions of the Upper and Middle Gunnison basins and the landscapes are characterized by river valleys, hills, ridges, plateaus, mountains, moderate to steep slopes, and deep, steep-walled canyons (NPS 2006). Woodlands and shrublands dominate the vegetation in addition to small grassland stands, sparsely vegetated badlands, and rock outcrops. The distribution of vegetation is driven by elevation, substrate (geology and soils), aspect, hydrology, and wildland fire. Environmental forces, particularly water and wind, carved the area’s geologic layers into its present topographic character.

The vegetation information provided in this upland and the ensuing wetlands subsections is adapted from two National Vegetation Inventory Project documents (vegetation classification and mapping) prepared separately for Black Canyon NP and Curecanti NRA (NPS 2010a, 2010b). Together, Black Canyon NP and Curecanti NRA support 23 ecological systems, 57 vegetation alliances, and 153 plant associations. Upland vegetation ranges from sparse saltbush (*Atriplex* spp.) and sagebrush shrublands, galleta (*Pleuraphis jamesii*) and bluegrass (*Poa* spp.) grasslands, and Utah juniper (*Juniperus osteosperma*) – two-needle pinyon pine (*Pinus edulis*) woodlands that have become established on badlands and steep slopes to dense forests of Douglas-fir and quaking aspen (*Populustremuloides*) occurring on mesic ridgetops, slopes, and drainage heads.

Natural and nonnative vegetation provide cover—over approximately 29,705 acres or 96.6% of Black Canyon NP and 31,849 acres or 77.2% of Curecanti NRA (NPS 2010a, 2010b). Land use/land cover elements, including unvegetated bedrock exposures, roads, open water, NPS facilities, etc., comprise approximately 1,046 acres or 3.4% of Black Canyon NP and 9,406 acres or 22.8% of Curecanti NRA.

The most common upland vegetation types mapped are Douglas-fir and quaking aspen forests, two-needle pinyon pine – Utah juniper woodlands, Gambel oak shrublands, and sagebrush (mountain, Wyoming, and basin big, and black) (*Artemisia tridentata* ssp. *vaseyana*, *A. t.* ssp. *wyomingensis*, *A. t.* ssp. *tridentata*, and *A. nova*) communities. Appendix K provides a complete listing of the upland forest, upland woodland, upland shrubland, and native and nonnative vegetation associations found in the Black Canyon NP and Curecanti NRA.

Presently, 73 of the 532 plant species (13.7%) known to occur within Black Canyon NP and 89 of the 679 plant species (13.1%) known to occur within Curecanti NRA are nonnative, and 23 are considered noxious weeds by the State of Colorado (Hogan et al. 2009). Some nonnative species were imported accidentally by livestock, maintenance and construction activities, and visitors. Other species were intentionally introduced for food, e.g., chicory (*Cichorium intybus*) and burdock (*Arctium minus*); forage, e.g., reed canarygrass (*Phalaris arundinacea*), smooth brome (*Bromus inermis*), and orchard grass (*Dactylis glomerata*); or bank/soil stabilization, e.g., crested wheatgrass (*Agropyron cristatum*), intermediate wheatgrass (*Thinopyrum intermedium*), and yellow sweetclover (*Melilotus officianalis*). Early settlers to the area arrived in the mid-1800s and established homesteads and ranches, introducing some of the first nonnative plants to the area for livestock forage and food. More recently, development of roads, water impoundments, campgrounds, trails, picnic areas, visitor centers, etc., to accommodate increased visitation since the 1960s contributed to the establishment of nonnative species. The upland vegetation has seen a nearly 130-year history of effects from

transportation corridors, communities, community, ranching, grazing, logging, water, and recreation development prior to the current wilderness planning effort.

Although no nonnative plant management plan now exists for Black Canyon NP or Curecanti NRA, invasive species are managed because of three concerns: (1) effects to native plant communities and the wildlife that use them, (2) effects to natural river processes and aquatic and riparian resources, and (3) concerns for downriver agricultural producers regarding increased invasions of nonnative forbs and grasses into irrigated pastures and other farmland. During the past decade, resource management staff have mapped populations of and controlled via mechanical, manual, and chemical methods the nonnative riparian shrubs tamarisk or salt-cedar, along with about 20 other nonnative plant species (Bockus 2010).

Vegetation Environmental Consequences

Available information on the vegetation of Black Canyon NP and Curecanti NRA with potential to be impacted was compiled primarily from recent vegetation inventory projects and annotated species lists. Predictions concerning short- and long-term impacts were based on previous projects in mid-elevation montane woodlands and shrublands and shale badlands environments with similar steep slopes, exposures, and soils. The thresholds of change for the intensity of an impact to vegetation are defined as follows:

Impact Intensity	Intensity Definition
Negligible	There would be no measurable effect or perceptible changes in plant community size, integrity, or continuity. Any effects would be on a small localized scale and appear natural.
Minor	Impacts would be measurable or perceptible, localized, and occur in a relatively small area. The overall viability of the plant community would not be affected and adverse impacts would recover naturally if no further impact occurs.
Moderate	Impacts would cause measurable changes in the plant community (e.g., abundance, distribution, quantity, or quality) or communities and would be localized within the Black Canyon NP and Curecanti NRA.
Major	Impacts to the plant community or communities would be substantial, observable, and occur over a large area of Black Canyon NP and Curecanti NRA including adjacent lands.

Duration of vegetation impacts is considered short term if the vegetation recovers in less than three years from implementation of action or visitor use, and long term if the vegetation takes longer than three years to recover.

Vegetation Environmental Consequences Under the No-action Alternative

Vegetation types occurring within Black Canyon NP and Curecanti NRA uplands include diverse forest, woodland, shrubland, herbaceous, and sparse types. Under the no-action alternative, the native and nonnative vegetation within Black Canyon NP and/or Curecanti NRA would be managed under the general management plan (NPS 1997), and related planning documents for research, inventory, monitoring, fire, grazing, nonnative species, restoration, and maintenance. Occasional slides and rock falls (mass wasting), fires, drought, and insect infestations would naturally occur, resulting in long-term minor changes in vegetation composition and structure due to loss of cover and potential conversion to different vegetation types.

Woodland, shrubland, and sparse shrubland vegetation of the Black Canyon NP inner canyon cliffs, slopes, and rims is presently disturbed during hiking and scrambling activities necessary to access the Gunnison River on 10 named routes/trails resulting in short- and long-term negligible to minor adverse impacts due to removal, soil compaction, root exposure, pruning, and/or breakage making plants and communities vulnerable to wind and water erosion, nonnative species invasion, and disease.

Vegetation of the Black Canyon NP and Curecanti NRA upland woodlands and shrublands is presently disturbed due to visitors (hikers, hunters, backpackers, etc.) recreating on established access trails and campsites and uncommon cross-country usage resulting in long-term negligible adverse impacts as described above for the inner canyon. Existing trails of Black Canyon NP uplands (North Vista, Warner Point, Kneeling Camel, Red Rock) and Curecanti NRA EPMP zone (Hermit's Rest and Pine, Mesa, Curecanti, and Crystal creeks) and Blue Mesa zone (Dillon Pinnacles). In addition, low levels of off-trail hiking reduce vegetation cover, compact soils, and results in litter displacement, which exposes soils to wind and water erosion and nonnative species invasion resulting in short- and long-term negligible to minor adverse impacts. Within Curecanti NRA, vegetation disturbance due to campsite establishment and use at boat-in locations adjacent to Blue Mesa Reservoir result in the same impact types and levels presented above for trails.

Mountain big sagebrush and Gambel oak shrublands have been bisected by the narrow BLM Grizzly Gulch waterline corridor resulting in long-term minor adverse impacts due to linear vegetation removal, soil compaction, and potential nonnative species invasion/management needs. Removing or otherwise treating nonnative plant species from upland sites would reduce the vegetative cover and allow native plant species to become established resulting in short-term negligible adverse impacts due to loss of wildlife habitat and long-term minor beneficial impacts due to establishment of native upland plant species and habitat.

Livestock grazing would potentially reduce herbaceous understory cover and open grassland patch size and distribution resulting in long-term negligible to minor adverse impacts due to upland vegetation transition to short and tall shrublands and possible need for prescribed burning. Livestock grazing would potentially provide sites for introduction of nonnative plant species resulting in long-term negligible to minor adverse impacts due to nonnative species control as described above. Upland plant species would re-establish on small reclaimed stock pond sites resulting in long term negligible beneficial impacts to upland plant communities.

Deadhorse Trail use by horses and pack animals does not require a livestock grazing permit stipulating packing-in weed-free hay for forage resulting in short term negligible adverse impacts to native plant communities adjacent to the trail.

Chainsaw use to clear downed tree branches and trunks from fencelines and trails within Black Canyon NP and Curecanti NRA would result in short term negligible to minor beneficial impacts to upland vegetation due to intact fencelines controlling trespass cattle access and open trails reducing social trailing around downed trunks and branches.

For both Black Canyon NP and Curecanti NRA, research and monitoring of canyon rim, slope, wall, plateau, hill, mountain, ridge, and floodplain plant species and communities, among other vegetation research, would inform distribution mapping and restoration programs resulting in long-term minor beneficial impacts. Applying the MRDG process to evaluate administrative actions and minimize impacts by determining appropriate techniques and equipment would result in short-term negligible to minor beneficial impacts on wilderness upland plant communities. Management actions to close and rehabilitate two-track roads and other historically disturbed sites would result in long-term negligible to minor beneficial impacts to vegetation by allowing native species recovery to naturally occur.

Cumulative Impacts. The no-action alternative consists of actions under current management and other plans and the cumulative impact scenarios previously described. Cumulative effects of implementing future management actions and plans with respect to upland vegetation (e.g., Black Canyon NP Resource Management Plan, Curecanti NRA Resource Protection Study, a fire management plan, and applying the MRGD process) would be likely to result in a combination of short- and long-term negligible to minor beneficial effects due to the resource management focus. Past, present, and reasonably foreseeable future projects with the potential to affect upland vegetation include implementation of the minor boundary correction legislation in Black Canyon uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The no-action alternative would contribute a negligible to minor effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse and beneficial impacts to upland vegetation within Black Canyon NP and Curecanti NRA under the no-action alternative. The no-action alternative would contribute short- and long-term negligible to minor beneficial effects to cumulative impacts to upland vegetation.

Vegetation Environmental Consequences Under the Preferred Alternative

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA. Many of the visitor use, grazing, research, monitoring, and management actions that are currently affecting vegetation as described under the no-action scenario would remain the same. Management actions and strategies associated with the preferred alternative that would have the potential to affect vegetation include new trail development, changes in use of existing trails, increased recreational opportunities, and implementing monitoring indicators and

standards for changes in wilderness and backcountry character and implementing management strategies when necessary.

Potential new trail construction on the Black Canyon uplands zone (North Vista Trail extension to overlook and loop, North Rim Ranger Station to Deadhorse Trail, South Rim Trail, Red Rock Canyon access, and Chukar Trail to Red Rock Canyon); Curecanti Blue Mesa zone (Stevens Creek to Elk Creek, and Ponderosa Campground to the access road into Forest Service lands); and the Curecanti EPMP zone (Pine Creek to Blue Creek) would disturb up to 9.7 acres of upland shrubland and woodland vegetation resulting in short- and long-term negligible adverse impacts due to loss of vegetation cover, wind and water erosion, and nonnative species invasion. Effects of horse use on trails in Curecanti NRA in addition to hiking and biking would be negligible and are discussed above under the no-action alternative.

Impacts to upland vegetation resulting from natural or prescribed fires, BLM Grizzly Gulch waterline maintenance or removal, nonnative plant species control and site restoration, helicopter access and chainsaw use, permitted or trespass livestock grazing, and horseback riding and pack animal use would be the same as described under the no-action alternative.

Effects related to any additional research and monitoring, applying the MRDG process, maintenance activities, and management actions to control nonnative species and rehabilitate sites would be the same as described under the no-action alternative. The vegetation that has become established on Black Canyon NP and Curecanti NRA would generally remain intact and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions for native and nonnative plant species; therefore, there would be short- and long-term direct and indirect negligible and adverse impacts to upland vegetation management.

Cumulative Impacts. The preferred alternative consists of actions under the Wilderness and Backcountry Management Plan and the management and other plans previously described. Cumulative effects of implementing future management actions and plans with respect to upland vegetation (e.g., defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA) would likely result in a combination of short- and long-term negligible to minor beneficial effects due to the resource protection and management focus. Past, present, and reasonably foreseeable future projects with the potential to affect upland vegetation include implementation of the minor boundary correction legislation in Black Canyon uplands and the adoption of the Motorized Vehicle Access Plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The preferred alternative would contribute a negligible to minor beneficial effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse and beneficial impacts to upland vegetation within Black Canyon NP and Curecanti NRA under the preferred alternative. The preferred alternative would contribute short- and long-term negligible to minor beneficial effects to cumulative impacts to upland vegetation.

WETLANDS

Wetlands, including riparian wetlands, occur from the eastern edge of Curecanti NRA (undammed Gunnison River near Neversink) to the lower portion of Black Canyon NP (controlled flows in the Gunnison River regulated by Crystal Dam). Between these loci, river flow volume, sediment movement/deposition, and flow periodicity/stage have been significantly altered since about 1935 by irrigation diversion structures and three dams regulated by the Aspinall Unit. Prior to development in the early 1900s, the Gunnison River and the adjoining mouths of tributary drainages likely supported extensive, linear stands of narrowleaf cottonwood (*Populus angustifolia*) forest and woodland canopy and willow (*Salix* spp.) shrublands over diverse understories, in addition to subirrigated sedge (*Carex* spp.) and rush (*Juncus* spp.) meadows, riparian grasslands, and riparian shrublands.

Little wetland or riparian vegetation established in the Black Canyon of the Gunnison bottom due to wall-to-wall scouring during spring runoff and floods following major precipitation events. Debris lines and channel scour presently indicate that intense flash flooding occurred and resulted in removal of some vegetation, redepositing boulders and sediments, drainage incision, and burying canyon floor vegetation under sediments, rock, and debris. The timing and magnitude of flows, water quality (particularly sediment loading), water temperature, and river habitats have been markedly altered by dam operations.

Named drainages supporting wetlands between Neversink and the boundary with Gunnison Gorge National Conservation Area include two rivers (Gunnison and Cimarron), 20 creeks, 5 gulches, and 2 draws. Also present are ephemeral/limited water resources in the form of intermittent streams, plunge pools, intermittently filled bedrock potholes, seeps, and springs. Intermittent streams in side canyons may support stands of riparian and wetland vegetation, especially below bedrock pour-offs where plunge pools form. Potholes develop in solution pits formed in level exposures of sandstone and limestone and are valuable water sources for wildlife, including aquatic invertebrates.

Presently, the easternmost portion of Curecanti NRA retains parts of the original riverine system, which are essentially unaltered, but were grazed and hayed until the 1980s, resulting in altered floodplain plant communities. Approximately 11 miles (18 km) of the Gunnison River and 53 miles (85 km) of tributary streams occur/flow within the boundary of Curecanti NRA; the portions inundated by reservoir impoundments (e.g., 10,416 acres) include approximately 38 river miles (61 km). Diverse riparian wetland communities, including mature narrowleaf cottonwood forest and woodland stands with shrubby and herbaceous understories, occur on the eastern portion of the recreation area along the Gunnison River and its tributary drainages (e.g., 622 acres). Riparian and wetland plant communities characterized by the disturbance-oriented boxelder (*Acer negundo*) trees and shrubs have become established on the edges of the Gunnison River and in tributary canyons (e.g., 551 acres). Perennial seeps and springs emerging from the canyon walls support rare hanging garden wetlands. Hanging gardens are a little-studied feature of the canyon walls, perched on small ledges, in alcoves, and in cracks hundreds of feet above the canyon floor. They support communities of unusual species including Mancos columbine (*Aquilegia micrantha*) and ditch reed grass (*Calamagrostis scopulorum*).

Riparian forest and woodland vegetation types consist entirely of narrowleaf cottonwood (11 plant associations), boxelder (three plant associations), blue spruce (two plant associations), and quaking aspen (two plant associations) stands. Except for quaking aspen, they occur along the Gunnison River floodplain and in its tributary canyons, in ravines, along small stream channels, along the reservoir shoreline, and adjacent to abandoned hay meadows. Most of the quaking aspen stands occur on steep north- or east-facing canyon slopes in Black Canyon NP and on the south- and west-facing North Rim of the East Portal-Morrow Point in Curecanti NRA. Riparian vegetation types were classified and mapped under the NPS National Vegetation Inventory Program (2010a, 2010b). The riparian and wetland associations defined through those projects are listed in appendix K. Boxelder woodlands characterize the riverside alluvium of the Black Canyon bottom where a lack of flushing river flows (releases are controlled by Crystal Dam) allowed establishment. Riparian forest and woodland associations of Black Canyon NP and Curecanti NRA cover 1,329 acres.

Riparian shrubland vegetation types are characterized by gray alder (*Alnus incana*), river birch (*Betula occidentalis*), redosier dogwood (*Cornus sericea*), choke cherry (*Prunus virginiana*), coyote willow (*Salix exigua*), and Geyer willow (*Salix geyeriana*) stands that occur along the Gunnison River and side channels and in its tributary canyons, in ravines, along small stream channels, and adjacent to abandoned hay meadows. Riparian shrubland associations covered 12.5 acres.

Riparian herbaceous vegetation types are regionally widespread, but uncommon and restricted in distribution to the Gunnison River floodplain, reservoir margins, small drainages and seeps, meadows, abandoned hayfields, and ponded water on mesa tops. Within Black Canyon NP, the majority of the flows associated with Red Rock Canyon/Creek are return flows from the Bostwick Park irrigation system. This creek is very entrenched to bedrock, has degraded water quality, and the banks often support nearly solid stands of introduced pasture grasses, particularly reed canarygrass and orchardgrass. A rare type of mixed forb and graminoid herbaceous species is restricted to hanging gardens of wet alcoves and seeps emerging from bedrock cracks. Species and stand diversity are numerous, but most stands occur in small patches. Riparian and wetland herbaceous associations of Black Canyon NP and Curecanti NRA covered 202 acres.

Wetlands Environmental Consequences

The National Park Service has adopted the policy of protecting and preserving wetlands. Wetland protection legislation and NPS procedural manuals considered and consulted for impact analyses included Executive Order 11990, "Protection of Wetlands," and NPS Director's Order 77-1: *Wetland Protection* (2008) and Director's Order 12. This guidance was used to: (1) avoid wetlands impacts to the extent practicable, (2) describe effects to wetland values, (3) provide effective mitigation measures, and (4) ensure no net loss of wetland functions and values. Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, or (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the annual growing

season (Cowardin et al. 1979). The thresholds of change for the intensity of an impact are defined as follows:

Impact Intensity	Intensity Definition
Negligible	Wetlands area and function would not be affected, could be avoided, or the effects to the resource would be below or at the lower levels of detection.
Minor	The effects to wetlands would be detectable, short-term, and relatively small in terms of area and the nature of the change; the wetland processes, functions, and integrity would remain unaffected.
Moderate	The effects to wetlands would be readily apparent, measurable, and temporary relative to the defining attributes; there would be short-term effects on wetland processes, function, and integrity. Wetland functional values may be affected in the long term. The action would change an existing wetland area function, but would be localized.
Major	The effects to wetlands would be readily apparent for the defining attributes; there would be loss of wetland processes, function, and integrity. The character of the wetland would be changed so that the functional values typically provided by the wetland would be substantially altered; the effects would be regionally important.

The effects to wetlands are considered short term if the wetland recovers in less than three years after implementation of an action or from visitor use. Impacts would be long term if the wetland requires more than three years for recovery.

Wetlands Environmental Consequences Under the No-action Alternative

Riparian and emergent wetlands that provide important wildlife habitat within Black Canyon NP and Curecanti NRA include diverse forest, woodland, shrubland, and herbaceous types. Under the no-action alternative wetlands within Black Canyon NP and/or Curecanti NRA would be managed under the general management plan and related planning documents and future amendments for research, inventory, monitoring, fire, grazing, nonnative species, restoration, and maintenance. Naturally occurring floods, drought, fires, and insect infestations would result in long-term negligible to minor changes in wetland composition and structure due to reduction or loss of cover and potential conversion to different vegetation types. Management to retain the present wetlands distribution, hydrology, and maintain the functional values would result in long-term negligible beneficial affects to wetland distribution, composition, and functional values.

Predominantly riparian woodlands of the Black Canyon NP inner canyon floodplain and tributary drainages have been affected due to campsite and access route establishment (10 routes) resulting in short- and long-term negligible to minor adverse impacts due to root exposure, vegetation removal, litter displacement, pruning, and/or breakage making sites vulnerable to nonnative species invasion and plants vulnerable to erosion and disease. Removing tamarisk shrubs from the riverbanks would reduce riparian wetland cover and

structure and allow native plant species to become established resulting in long-term minor beneficial impacts due to establishment of native riparian plant species.

Wetlands of Black Canyon NP and Curecanti NRA uplands are uncommon and associated with drainages, primarily; they include riparian shrubland and woodland types and are presently affected by recreationists (hikers, hunters, anglers, backpackers, etc.) using established trails and campsites resulting in long-term negligible adverse impacts as described above for the inner canyon. Existing trails of the Curecanti NRA EPMP zone (Pine, Mesa, Curecanti, and Crystal creeks) and Blue Mesa zone (Neversink, Cooper Ranch) result in short- and long-term negligible adverse impacts due to trail establishment and maintenance, erosion, and nonnative species invasion. Within Curecanti NRA, riparian vegetation disturbance due to campsite establishment and use at boat-in locations adjacent to shorelines and at Red Creek Campground result in the same impact types and levels as presented for trails.

Livestock grazing would reduce herbaceous understory cover in riparian stands along creeks due to grazing and resting activities, and provide disturbed sites for nonnative species invasion resulting in short- and long-term negligible to minor adverse impacts. Loss of wetland vegetation established around the banks of unpermitted stock ponds would result in short-term negligible adverse impacts to the artificial wetland community. Helicopter access and chainsaw use, as one step to remove tamarisk from wetland communities, results in short-term minor beneficial impacts to wetland species composition and functional values.

For both Black Canyon NP and Curecanti NRA, research and monitoring wetland plant species and communities, hanging gardens, floodplain dynamics, hydrology, and hydric soils, among other wetlands research, would inform distribution mapping and restoration programs resulting in long-term negligible to minor beneficial impacts. Administrative actions would result in short-term negligible impacts on wilderness wetland systems. Applying the MRDG process to evaluate administrative actions would minimize impacts by determining appropriate techniques and equipment. Management actions to rehabilitate historically disturbed wetlands would result in long-term negligible to minor beneficial impacts to wetlands by allowing the hydrology and plant species to recover naturally.

Cumulative Impacts. The no-action alternative consists of actions under current management and other plans and the cumulative impact scenarios previously described. Cumulative effects of implementing future management actions and plans with respect to wetlands (e.g., Black Canyon NP Resource Management Plan, Curecanti NRA Resource Protection Study, the fire management plan, and MRDG process) would likely result in a combination of short- and long-term negligible to minor beneficial effects due to the resource management focus. Past, present, and reasonably foreseeable future projects with the potential to affect wetlands include implementation of the minor boundary correction legislation in Black Canyon NP uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The no-action alternative would contribute a negligible to minor effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse and beneficial impacts to wetland and riparian communities within Black Canyon NP and Curecanti NRA under the no-action alternative. The no-action alternative would contribute short- and long-term negligible to minor beneficial effects to cumulative impacts to wetlands.

Wetlands Environmental Consequences Under the Preferred Alternative

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities at Black Canyon NP and Curecanti NRA. Many of the visitor use, grazing, research monitoring, and management actions that are currently affecting wetlands as described under the no-action scenario would remain the same. Management actions and strategies associated with the preferred alternative that would have the potential to affect wetlands include new trail development, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary.

Potential new trail construction on the Black Canyon uplands zone (North Vista Trail extension to overlook and loop, North Rim Ranger Station to Deadhorse Trail, South Rim Trail, Red Rock Canyon access, and Chukar Trail to Red Rock Canyon); Curecanti Blue Mesa zone (Stevens Creek to Elk Creek and Ponderosa Campground to the access road into Forest Service lands); and the Curecanti EPMP zone (Pine Creek to Blue Creek) would be sited to avoid wetlands; however, a small but unknown area of wetland and riparian woodland and shrubland habitat could be disturbed. This would result in short- and long-term negligible adverse impacts due to loss of vegetation cover, erosion, and nonnative species invasion.

Impacts to wetlands resulting from natural or prescribed fires, nonnative plant species control and site restoration, helicopter access and chainsaw use, permitted or trespass livestock grazing, and unpermitted stock pond closure would be the same as described under the no-action alternative.

Effects related to any additional research and monitoring (hydrology, hydric soils, hanging garden location and composition, etc.), applying the MRDG process, maintenance activities, and management actions to control nonnative species and rehabilitate sites would be the same as described under the no-action alternative. Wetlands that have developed on mesic sites within Black Canyon NP and Curecanti NRA would generally remain intact, retain functions and values, and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions for native and nonnative plant species; therefore, there would be short- and long-term direct and indirect negligible beneficial impacts to wetlands management.

A Clean Water Act section 404 permit and a NPS wetlands statement of findings would not be required.

Cumulative Impacts. The preferred alternative consists of actions under the Wilderness and Backcountry Management Plan and the management and other plans previously described. Cumulative effects of implementing future management actions and plans with respect to wetlands (e.g., defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA) would be likely to result in a combination of short- and long-term negligible to minor beneficial effects due to the resource protection and management focus. Past, present, and reasonably foreseeable future projects with the potential

to affect wetlands include implementation of the minor boundary correction legislation in Black Canyon uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The preferred alternative would contribute a negligible to minor effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible to minor adverse and beneficial impacts to wetlands and riparian communities within Black Canyon NP and Curecanti NRA under the preferred alternative. The preferred alternative would contribute short- and long-term negligible to minor beneficial effects to cumulative impacts to wetland and riparian habitats.

THREATENED, ENDANGERED, AND SPECIES OF SPECIAL CONCERN

Within the region of Gunnison and Montrose counties, which include Black Canyon NP and Curecanti NRA, there are four federally listed endangered fish species and two federally listed threatened species (one mammal and one bird). Two federal candidate species are known to occur (one bird and one mammal) and one candidate bird species may occur in Curecanti NRA (USFWS 2010a, 2010b, appendix L). Additionally, there are 7 special-status wildlife species, 9 rare and/or endemic plant species, and 14 critically imperiled plant associations. The principal references used to determine the special-status species and community lists were the CDO 2010a, Spackman et al. 1997 and 2002, Hogan et al. 2009, and NPS 2010a and 2010b. Not all of the species identified by the U.S. Fish and Wildlife Service (USFWS) (2010) occur or have critical habitat within the boundaries of Black Canyon NP and/or Curecanti NRA, nor are all the species analyzed in this environmental assessment, as presented in Appendix L: Special Status Animal and Plant Species.

The U.S. Fish and Wildlife Service (2010, appendix L) provided the list of endangered, threatened, and candidate wildlife species (TES) for Gunnison and Montrose counties, the two-county area surrounding Black Canyon NP and Curecanti NRA. Included were four federally endangered fishes: (1) bonytail (*Gila elegans*), (2) Colorado pikeminnow (*Ptychocheilus luscus*), (3) humpback chub (*Gila cypha*), and (4) razorback sucker (*Xyrauchen texanus*); two federally threatened species: (5) Canada lynx (*Lynx canadensis*) and (6) Mexican spotted owl (*Strix occidentalis lucida*); and three federal candidate species: (7) Gunnison sage-grouse (*Centrocercus minimus*), (8) yellow-billed cuckoo (*Coccyzus americanus*), and (9) Gunnison's prairie dog (*Cynomys gunnisonii*) (USFWS 2010). The U.S. Fish and Wildlife Service (2010, appendix L) further stated that: (1) the endangered fishes would be impacted if there are any water depletions associated with actions proposed in the Plan; (2) the Canada lynx is represented by a lynx analysis unit within or very close to the Soap Creek area of Curecanti NRA, near Blue Mesa Reservoir; (3) the Mexican spotted owl may occur in canyon habitat; (4) the Yellow-billed cuckoo may occur in riparian habitat; (5) the Gunnison sage-grouse is known to occur within sagebrush steppe habitat of Black Canyon NP and Curecanti NRA; and (6) the Gunnison prairie dog is known to occur within sagebrush steppe habitat of Curecanti NRA.

Several of the TES species were dismissed from further analysis in this environmental assessment for the following reasons:

1. The Bureau of Reclamation manages flows within the Gunnison River below Crystal Dam. The razorback sucker, humpback chub, Colorado pikeminnow, and bonytail do not occur within Black Canyon NP or Curecanti NRA. Water depletions that affect the hydrology and water quality of TES fish habitat in the Gunnison River below Crystal Dam and the Colorado River system below the confluence would not occur as a result of the proposed Plan implementation (appendix L).
2. The TES species do occur within Black Canyon NP or Curecanti NRA, including the ferruginous hawk, Mexican spotted owl (although not analyzed further, the National Park Service continues presence-absence surveys for Mexican spotted owl as described below), Canada lynx, skiff milkvetch, and Wetherill's milkvetch (appendix L).
3. The TES species occur in Black Canyon NP or Curecanti NRA, but are not monitored by the National Park Service, including the alcove columbine, giant helleborine, adobe desert parsley, and adobe hills penstemon (appendix L).
4. The TES species that occur, but only in the frontcountry of Curecanti NRA, and would not be affected by the proposed NPS Wilderness and Backcountry Management Plan implementation, includes Gunnison's prairie dog (appendix L).

Rare plant communities occur within Black Canyon NP and Curecanti NRA and are discussed below. There would be no further analysis of these communities in this environmental assessment because proposed NPS Wilderness and Backcountry Management Plan implementation would be protective and would not affect their status.

TES species that occur in Black Canyon NP and/or Curecanti NRA and would be analyzed for impacts include: Townsend's big-eared bat (*Corynorhinus townsendii*), northern river otter (*Lontra canadensis*), Gunnison sage-grouse, yellow-billed cuckoo, American peregrine falcon, bald eagle, Colorado River cutthroat trout, northern leopard frog (*Rana pipiens*), Gunnison milkvetch, adobe thistle, Black Canyon gilia, and Hapeman's sullivania. Additional information describing these TES species is presented herein.

Wildlife Species

Townsend's big-eared bat. Townsend's big-eared bat is a Colorado species of special concern that is known to occur within Black Canyon NP following capture and positive identification during the 2001–2002 NCPN Mammalian Inventory (Haymond et al. 2003). It is a western bat species occupying semidesert shrublands, pinyon-juniper woodlands, and open montane forests. Caddisflies appear to be a staple of the Townsend's big-eared bat diet, which also includes moths, flies, and other insects; they are gleaners (picking insects from leaves).

The Townsend's big-eared bat is medium-sized and colored brown to grayish brown. The species range in Colorado includes most of the western two-thirds of the state and extreme southeastern Colorado to elevations of about 9,500 ft (2,896 m) (CDOW 2010b).

Northern river otter. Northern river otter, a Colorado threatened species, was not detected during the 2001–2002 NCPN Mammalian Inventory; however, confirmed river otter observations have been documented in both national park system units. The river otter is an elongate, robust mustelid with a thick, tapering tail. River otters occur in the Colorado, Gunnison, Piedra, and Dolores rivers in western Colorado. River otters use riparian habitats that traverse a variety of other ecosystems ranging from semidesert shrublands to montane and subalpine forests. The species requires permanent water of relatively high quality and an abundant food base of fish or crustaceans. Other habitat features that may be important include the presence of ice-free reaches of streams in winter, water depth, stream width, and suitable access to shoreline (CDOW 2010b).

Mexican Spotted Owl. The Mexican spotted owl is a federally and Colorado threatened species (USFWS 2009) that has not been detected in Black Canyon NP or Curecanti NRA during ongoing presence/absence surveys beginning in 2006 (T. Childers, pers. comm., 2011). Additionally, there is no Mexican spotted owl critical habitat designated within Black Canyon NP or Curecanti NRA; however, both national park system units make up a portion of the Southern Rocky Mountain – Colorado Recovery Unit, one of 11 recovery units in the southwestern United States (USFWS 2009). The Mexican spotted owl is widely, but patchily, distributed throughout the occupied range in the United States with distribution reflecting the availability of forested mountains and canyons, and in some cases, rocky canyon lands; the habitat within the southwestern United States is therefore naturally fragmented.

The Mexican spotted owl is mottled in appearance with irregular white and brown spots on the abdomen, back, and head. Mexican spotted owls nest, roost, forage, and disperse in a diverse assemblage of plant communities. Mixed-conifer forests are commonly used throughout most of the range and may include Douglas-fir and/or white fir, with codominant species including southwestern white pine, limber pine, and ponderosa pine. The understory often contains the above coniferous species, as well as broad-leaved tall shrubs including Gambel oak, maple, boxelder, and/or New Mexico locust. In the northern part of the range, including southern Utah and southern Colorado, Mexican spotted owls occur primarily in rocky canyons (USFWS 2009).

Mexican spotted owls nest and roost primarily in closed-canopy forests or rocky canyons using cliff ledges, stick nests built by other birds, debris platforms in trees, and tree cavities. In southern Colorado, most nests are in caves or on cliff ledges in rocky canyons. Forests used for roosting and nesting often contain mature or old-growth stands with complex structure. A wider variety of trees are used for roosting, but Douglas-fir is the most commonly used species. Courtship begins in March and eggs are laid in late March through early April. Incubation begins shortly after the first egg is laid, and is performed entirely by the female. The eggs usually hatch in early May.

Mexican spotted owls are described as “perch and pounce” predators; locating prey from an elevated perch by sight or sound, then pouncing on the prey and capturing using talons. Specific prey groups identified from Mexican spotted owl pellets included woodrats, mice, voles, rabbits, gophers, bats, birds, reptiles, and arthropods.

Gunnison Sage-grouse. The Gunnison sage-grouse is a species of special concern in Colorado and is a candidate for listing under the federal Endangered Species Act (USFWS 2010).

Gunnison sage-grouse have been documented using both Curecanti NRA and Black Canyon NP year-round (T. Childers, pers. comm., 2011). The size of Gunnison sage-grouse range and quality of habitat has been reduced due to direct loss, fragmentation, and degradation from human developments, conversion of native habitat to hay or other crops, alteration or destruction of wetland and riparian areas, incompatible livestock management, competition for winter range by big game and creation of large reservoirs (RSC 2005). The Colorado Wildlife Commission eliminated hunting in areas occupied by Gunnison sage-grouse in 2000.

The Gunnison Sage-grouse Conservation Plan for the Gunnison Basin was published in 1997 and a conservation plan for the Crawford population was published in 1998 by the Crawford Working Group; the plans represented the first inter-agency and multiuser conservation planning efforts for these populations. In 2005, the Rangewide Conservation Plan was completed by the Rangewide Steering Committee, an inter-agency group. The Gunnison Basin Gunnison Sage-grouse Strategic Committee was established in about 2005 to further Gunnison Basin conservation efforts. The strategic committee is made up of agency officials and representatives from the public sector. The Gunnison Working Group was dissolved in 2009. The Gunnison Basin Sage-grouse Strategic Committee developed an action plan in 2010. The National Park Service, Bureau of Land Management, Colorado Division of Wildlife, U.S. Forest Service, Natural Resource Conservation Service, and others within the Crawford Working Group cooperated to update the Crawford Area Plan in 2011.

The Gunnison sage-grouse has become established south of the Colorado River, up to elevations of approximately 9,200 ft (2,804 m). Historically, the species occurred throughout the southwestern portion of Colorado and in southeastern Utah. It is estimated that approximately 3,900 breeding birds occur among seven separate populations; the largest population of approximately 3,600 birds inhabit the Gunnison Basin (CDOW 2010e). Separate populations in Colorado are: Pinion Mesa, Crawford, San Miguel basin, Gunnison Basin, Dove Creek, and Poncha Pass; the Utah population occurs near Monticello.

The National Park Service has recent, extensive documentation that Gunnison sage-grouse use Curecanti NRA for all life stages and have confirmed nests in the area during an extensive 12-year study of sage-grouse movements and habitat use (Childers, pers. comm., 2011). There is unpublished CDOW data from radio-collared hens in the Crawford population that confirm sage-grouse use in the summer, fall, and winter within the Black Canyon NP North Rim. The one lek located within Curecanti NRA is no longer active and is considered a historic lek by the Colorado Division of Wildlife. The National Park Service continues to enforce seasonal closure around this lek during the breeding season, should it again become an active lek site. A second lek is still active, but is not within the Curecanti NRA boundary.

To date, nesting has not been confirmed within Black Canyon NP boundaries, but suitable nesting habitat occurs in the park. Additionally, this nesting habitat is within close proximity to Crawford population active lek sites, well within the distance sage-grouse hens are known to travel from leks to establish nest sites.

The National Park Service is dedicated to the conservation of the Gunnison sage-grouse. The only lek site on NPS-managed lands is closed to human use during the breeding season. The National Park Service has recently completed an extensive 12-year field study gathering information about Gunnison sage-grouse seasonal movements, survival and habitat use in the

western portion of the Gunnison Basin. U.S. Geological Survey (USGS) researchers are cooperating with the National Park Service to use these data to develop statistically rigorous habitat use and survival models, which would help guide conservation efforts throughout the Gunnison Basin. Additionally, the National Park Service is conducting sagebrush habitat restoration and is cooperating with the U.S. Geological Survey, Bureau of Land Management, and Colorado Division of Wildlife to investigate sage-grouse range and seasonal movements within the Crawford population.

Yellow-billed Cuckoo. The yellow-billed cuckoo, a federal candidate species and Colorado species of special concern, has not been confirmed as breeding within Black Canyon NP or Curecanti NRA (NPS 2007). However, the presence of one adult yellow-billed cuckoo in Curecanti NRA was confirmed in June 2010. Riparian habitat does occur that could support this species (USFWS 2010). The species typically inhabits lowland riparian forests and urban areas with tall trees (CDOW 2010b). Within Black Canyon NP and Curecanti NRA, this habitat type is best represented by the narrowleaf cottonwood riparian forest and woodland and willow and alder tall shrubland stands that have become established adjacent to the Gunnison River near the Neversink area and tributary drainages in Curecanti NRA, and less so by the short-stature riparian boxelder woodland stands that occur along the Gunnison River and in tributary drainages within the inner canyon of Black Canyon NP.

The yellow-billed cuckoo is considered a rare spring and fall migrant and summer resident on the Colorado eastern plains west to Morgan and Otero counties, and rare west to the foothills of the Rocky Mountains (Andrews and Righter 1992). This species is also an uncommon local summer resident in western valleys, primarily from Mesa County southward (CDOW 2010b). Yellow-billed cuckoos occur in mountain park habitats (four records) and in foothill and lower mountain slope habitats (four records); numbers of individuals fluctuate widely from year to year (CDOW 2010b).

Yellow-billed cuckoos are medium-sized birds (26 to 30 cm long; 55 to 65 g) with long tails and uniform grayish brown plumage on the head and back with dull white underparts. Yellow-billed cuckoos begin breeding in mid- to late-May, typically breeding once per year (Hilt 2000). There is little information available about the lifespan and survivorship of yellow-billed cuckoos; the oldest banded yellow-billed cuckoo adults were four years old at recapture (Hughes 1999).

Yellow-billed cuckoos primarily forage on large insects including caterpillars, katydids, cicadas, grasshoppers, and crickets; also occasionally taken are bird eggs, snails, small vertebrates including frogs and lizards and some fruits and seeds. Some yellow-billed cuckoos parasitize other birds by laying eggs in the nests of other yellow-billed cuckoos or in the nests of other bird species including the black-billed cuckoo, American robin, gray catbird, and wood thrush (Hughes 1999).

American Peregrine Falcon. The American peregrine falcon, a Colorado special concern species, is present in both Curecanti NRA and Black Canyon NP (Boretti 1990, Chase 2000, Giroir 2004). Peregrine falcon territories and nests have been monitored yearly since 1990 in Black Canyon NP, and since 1998 in Curecanti NRA (Boretti 1990; T. Childers, pers. comm., 2011). In Black Canyon NP, there are three known established territories, which are occupied every year. In Curecanti NRA, there are also three known established territories. Climbing

routes near the Curecanti Needle in Curecanti NRA and the Painted Wall in Black Canyon NP are closed on March 15 each year until the nearby peregrine falcon nests are determined to be vacated, whether by successful fledging of the young or failure of the nest.

Typically, American peregrine falcon breeding pairs nest on cliffs and forage over adjacent coniferous and riparian forest habitats. Migrants and winter residents usually occur in the vicinity of reservoirs, rivers, and marshes, but may also occur in grasslands, agricultural areas, and other habitats. The species is described in the Colorado Wildlife Resource Information System (CDOW 2010b) as a rare spring and fall migrant in western valleys, foothills, lower mountains, mountain parks, and on eastern plains; a rare winter resident at Monte Vista National Wildlife Refuge (very rare in western valleys and on eastern plains near the foothills); and a rare summer resident in foothills and lower mountains statewide (CDOW 2010b).

Bald eagle. There are no known breeding bald eagle pairs in Black Canyon NP or Curecanti NRA, but a winter resident population occurs mostly within Curecanti NRA. Individuals primarily forage on fish until the reservoirs form surface ice. Typically, bald eagle habitat in the Gunnison River region includes reservoirs and rivers; in winter the species occurs locally in sagebrush semi-deserts and grasslands particularly near prairie dog towns. The Colorado Wildlife Resources Information System (CDOW 2010b) reports 10 to 13 breeding pairs in Moffat, Rio Blanco, Mesa, Montezuma, La Plata, Archuleta, Adams, and Weld counties in the past several years.

Colorado River cutthroat trout. Current distribution is limited to a few, small headwater streams and lakes in northwestern and western Colorado including the Gunnison River drainage. It was most likely outcompeted by nonnative trout species (brown, brook, and rainbow) in the late 19th and early 20th centuries, and displaced by the Aspinall Unit reservoirs constructed in Curecanti NRA. The species was listed as rare by Wiltzius in 1978. The Colorado River cutthroat trout spawns from April to June in running water; fertilized eggs are buried in a gravel nest by the females, and the eggs hatch during the summer. The Colorado River cutthroat trout feeds on terrestrial insects and aquatic invertebrates.

Northern leopard frog. The northern leopard frog is a Colorado species of special concern and was collected within the Black Canyon prior to damming in 1961. This specimen is preserved in the University of Michigan Museum of Zoology (UMMZ 122926). A resource management specialist observed the northern leopard frog within Black Canyon NP and Hammerson (2005) lists the status in Black Canyon NP and Curecanti NRA as unconfirmed. The species occurs throughout Colorado, excluding most of the southeastern and east-central portions of the state; elevations range from near 3,500 ft (1,065 m) in northeastern Colorado to above 11,000 ft (3,355 m) in southern Colorado (CDOW 2010b).

Typical northern leopard frog habitats include wet meadows and the banks and shallows of marshes, ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches (CDOW 2010b). Little information is available on northern leopard frog food habits in Colorado, but invertebrates dominate the diet of adults, including tenebrionid beetles in the diet of individuals from northwestern New Mexico. Known predators on larvae (tadpoles) in Colorado include the pied-billed grebe (*Podilymbus podiceps*) and tiger salamander. Reported predators on metamorphosed frogs include the great blue heron (*Ardea herodias*), burrowing

owl (*Athene cunicularia*), northern water snake (*Nerodia sipedon*), and western terrestrial garter snake (*Thamnophis elegans*).

Plant Species

The following four Colorado endemic plant species occur within Black Canyon NP and/or Curecanti NRA, are monitored by the National Park Service, and are evaluated within this environmental assessment:

Gunnison milkvetch. The Gunnison milkvetch (*Astragalus anisus*) is a Colorado endemic of Gunnison and Saguache counties, occurring between the elevations of 7,700 ft to 8,500 ft (2,347 m to 2,591 m) (Spackman et al. 1997). The species grows among black sagebrush or other low sagebrush shrubs on dry gravelly flats and hillsides. Typically, the soils are sandy clay that overlay granitic bedrock. The status within Black Canyon NP is “unconfirmed;” however, several voucher specimens have been collected outside Black Canyon NP boundary and one voucher specimen was collected from Curecanti NRA (Hogan et al. 2009).

Adobe thistle. The adobe thistle (*Cirsium perplexans*) is a Colorado endemic of the Colorado and Gunnison river valleys of Delta, Mesa, Montrose, and Ouray counties between the elevations of 5,000 to 8,000 ft (1,524 to 2,438 m) (Spackman and Anderson 2002). The species grows in open areas and disturbed sites in mixed shrublands and pinyon – juniper woodlands. There is a museum voucher specimen collected within Black Canyon NP (Hogan et al. 2009).

Black Canyon gilia. The Black Canyon gilia (*Gilia penstemonoides*) is a Colorado endemic in Gunnison, Montrose, Hinsdale, and Mineral counties between the elevations of 6,800 ft to 9,000 ft (2,073 to 2,743 m) (Spackman et al. 1997). The species grows from cracks on vertical canyon walls, narrow ledges, and cliff rims formed in Precambrian gneiss, schist, and shale exposures. There is a museum voucher specimen collected within Black Canyon NP (Hogan et al. 2009).

Hapeman’s (Hanging Garden) Sullivantia. The hanging garden Sullivantia (*Sullivantia hapemania* var. *purpusii*) is a Colorado endemic of mesic hanging gardens, occurring in west-central Colorado including Gunnison and Montrose counties between the elevations of 7,000 ft to 10,000 ft (2,134 m to 3,048 m) (Spackman et al. 1997). The species has become established on wet cliffs, in alcoves, and on wet boulders of various bedrock types including limestone, shale, and quartzite where seeps and springs emerge. There is a museum voucher specimen collected within Black Canyon NP (Hogan et al. 2009).

Plant Communities

The Nature Conservancy and the Natural Heritage Network assess plant communities as to rarity and degree of imperilment by applying a global conservation status rank ranging from 1 to 5, with a rank of “1” indicating critical imperilment due to rarity, endemism, and/or threats, and a rank of “5” indicating little or no risk of extirpation or elimination of the plant community. Particularly rare are the plant species associated with hanging gardens and seeping ledges that occur where there is contact between impervious rock layers or bedrock cracks and

seeps emerge. No plant associations occurring within Black Canyon NP and Curecanti NRA are considered critically imperiled (G1). There are 14 plant associations within Black Canyon NP and Curecanti NRA considered imperiled (G2) (NPS 2010a, 2010b): (1) *Achnatherum hymenoides* Shale Barren Herbaceous Vegetation; (2) *Amelanchier (utahensis, alnifolia) - Cercocarpus montanus* Shrubland; (3) *Amelanchier utahensis* - Mixed Shrub / *Carex geyeri* Shrubland; (4) *Hesperostipa comata - Achnatherum hymenoides* Herbaceous Vegetation; (5) *Leymus cinereus* Herbaceous Vegetation; (6) *Pascopyrum smithii* Herbaceous Vegetation; (7) *Pinus edulis - (Juniperus monosperma, Juniperus osteosperma) / Hesperostipa comata* Woodland; (8) *Populus angustifolia - Juniperus scopulorum* Woodland; (9) *Populus angustifolia / Crataegus rivularis* Woodland; (10) *Populus angustifolia / Prunus virginiana* Woodland; (11) *Populus angustifolia / Rosa woodsii* Forest; (12) *Populus tremuloides / Ceanothus velutinus* Forest; (13) *Pseudotsuga menziesii / Amelanchier alnifolia* Forest; and (14) *Salix exigua* / Mesic Forbs Shrubland. The remaining plant associations of Black Canyon NP and Curecanti NRA are ranked vulnerable to secure (G3, G4, and G5) or are not yet ranked/new to the National Vegetation Classification System (NPS 2010a and 2010b).

THREATENED, ENDANGERED, AND SPECIES OF SPECIAL CONCERN ENVIRONMENTAL CONSEQUENCES

Impact Intensity	Intensity Definition
Negligible	Changes to a population or individuals of a species would be so small that it would not be of any measurable or perceptible consequence. This impact intensity equates to a USFWS "no affect" determination.
Minor	Changes to a population or individuals of a species would be measurable, but small and localized, but within the range of natural variability. This impact intensity equates to a USFWS "may affect, not likely to adversely affect" determination.
Moderate	Changes to a population or individuals of a species would be measurable and outside the range of natural variability. The change would be long term or threaten the viability of the species locally. This impact intensity equates to a USFWS "may affect, likely to adversely affect" determination.
Major	Changes to a population or individuals of a species would be detectable and measurable, outside the range of natural variability, and could be permanent or threaten the viability of the species locally or regionally. This impact intensity equates to a USFWS "may affect, likely to jeopardize the continued existence of a species or adversely modify critical habitat for a species" determination.

Special-status species impacts are considered short term if the species recovers in less than one year and long term if it takes longer than one year for the species to recover.

Threatened, Endangered, and Species of Special Concern Environmental Consequences Under the No-action Alternative

Threatened, endangered, and species of special concern wildlife and plant species and rare vegetation types occur within many areas of Black Canyon NP and Curecanti NRA relative to habitat distribution (e.g., peregrine falcons nest on inner canyon rock faces and forage parkwide and Gunnison sage-grouse use habitat characterized by sagebrush for forage, cover, and nesting and brood-rearing). Under the no-action alternative, TES species habitat that occurs within Black Canyon NP and Curecanti NRA would remain intact and subject to planned or emergency management and maintenance under the general management plan provisions for sensitive species and under the fire and interim climbing management plans.

Townsend's big-eared bats are a state species of special concern that use woodland habitats of Black Canyon NP and Curecanti NRA for cover and foraging; the National Park Service protects this bat species and its habitat under the general management plan resulting in short- and long-term negligible beneficial impacts to the local population.

The National Park Service would manage potential aquatic, wetland, and riparian habitat of the state-threatened northern river otter under the provisions of Black Canyon NP and Curecanti NRA general management plan, director's orders focused on wetland and riparian habitat preservation and floodplain preservation, and CDOW management of the reservoir and river fisheries resulting in long-term negligible to minor beneficial impacts.

Sagebrush shrublands and the patches of bare ground and grasslands between stands are known to provide habitat for the federal candidate Gunnison sage-grouse in Black Canyon NP and Curecanti NRA. Gunnison sage-grouse habitat was partially fragmented by existing stock ponds, approximately 4.0 acres in size, along Black Canyon Road. The National Park Service is currently restoring those stock ponds to native sagebrush habitat, which may result in short-term negligible adverse impacts to sage-grouse due to noise and human disturbance during the few brief visits to control weeds and establish plantings in these areas. Continued treatment and removal of noxious and invasive weeds within the Crawford Gunnison sage-grouse range would result in long-term negligible beneficial impacts to the local Gunnison sage-grouse population by maintaining a healthy sagebrush ecosystem and limiting the spread of an invasive plant monoculture understory. Livestock grazing on the North Rim occurs for one month from September to October; there is no effect to the Gunnison sage-grouse population during that time.

Within Curecanti NRA, the Gunnison sage-grouse could be disturbed by human presence on the Dillon Pinnacles Trail. While the possibility that sage-grouse use this area exists, NPS staff has not recorded any occurrence of radio-marked grouse using this area during a 12-year grouse habitat use study in the area. Additionally, much of the area surrounding the Dillon Pinnacles Trail is dominated by grass and juniper, with very small patches of sagebrush habitat. Dogs are required to be leashed in Curecanti NRA, which minimizes the more serious impacts of hiker's possible effects (e.g., human presence and noise generation) on sage-grouse. Therefore, ongoing management under the general management plan would result in short-term negligible adverse impacts due to possible sage-grouse avoidance of the area.

The Colorado Wildlife Commission eliminated hunting of Gunnison sage-grouse in 2000, resulting in long-term minor beneficial impacts to Gunnison sage-grouse populations. Livestock grazing that maintains open areas used as leks would result in short- and long-term negligible beneficial impacts to the Gunnison sage-grouse population. Only one lek occurs within the eastern portion of Curecanti NRA. The modification of grazing allotments within Curecanti NRA to include Gunnison sage-grouse stipulations, have resulted in short- and long-term minor beneficial impacts. Because sagebrush shrubland habitat that could provide foraging areas, leks for courtship, and breeding and nesting cover for the federal candidate Gunnison sage-grouse are managed under the general management plan, fire management plan, and other approved plans, there would be no effect to the federal candidate Gunnison's sage-grouse.

While it is possible that riparian woodlands within eastern Curecanti NRA may support the candidate yellow-billed cuckoo, providing foraging and nesting habitat, this species is not currently known to breed within Curecanti NRA. The National Park Service would manage forest and shrubland riparian habitats of Curecanti NRA under the general management plan, fire management plan, and director's orders focused on wetland and riparian habitat preservation and floodplain preservation, and provide closures, if necessary, to protect yellow-billed cuckoo habitat resulting in short- and long-term negligible beneficial impacts. There would be no effect to the federal candidate yellow-billed cuckoo due to adherence to existing management plans and director's orders.

American peregrine falcon habitat of the Black Canyon NP inner canyon and Curecanti NRA EPMP zones occurs primarily on the cliff faces. Breeding activities of one peregrine falcon territory that is near many climbing routes within Black Canyon NP is protected by seasonal climbing closures and results in short-term minor to moderate beneficial impacts to the local peregrine falcon population. Breeding activities of two peregrine falcon territory near climbing routes within Curecanti NRA is protected by seasonal climbing closures and results in short-term minor to moderate beneficial impacts to the local peregrine falcon population.

American peregrine falcons would likely be affected by loud noise and human presence during rare chainsaw and helicopter use within Black Canyon NP and Curecanti NRA, resulting in short-term negligible adverse impacts. Management use of helicopters and chainsaws in the inner canyon and elsewhere in the park rarely occurs and is conducted under the *Minimum Requirements Decision Guide* so that the use does not interfere with the peregrine falcon breeding season. Removing tamarisk shrubs from riverbanks would result in long-term negligible beneficial impacts to the local peregrine falcon population due to the increased health of riparian bird habitat, which may provide increased hunting opportunities for peregrine falcons.

The National Park Service would manage potential aquatic, wetland, and riparian habitat of the state-threatened bald eagle predominantly under the provisions of the Curecanti NRA general management plan, director's orders focused on wetland and riparian habitat preservation and floodplain preservation, and CDOW management of the reservoir and river fisheries resulting in long-term negligible to minor beneficial impacts.

Many cooperating agencies manage the potential habitat for Colorado River cutthroat trout. Proper habitat management of rivers and streams, along with adequate regulatory safeguards,

Threatened, Endangered, and Species of Special Concern Environmental Consequences

would result in long-term minor beneficial impacts to this state species of concern. Colorado Division of Wildlife and the National Park Service would assess rivers and tributaries as potential reintroduction habitat for the Colorado River cutthroat trout. This assessment would result in long-term minor beneficial impacts to this state species of concern.

The National Park Service would manage potential habitat (aquatic, wetland, and riparian) of the state sensitive species northern leopard frog under the provisions of Black Canyon NP and Curecanti NRA general management plan, director's orders focused on wetland and riparian habitat preservation and floodplain preservation, resulting in long-term negligible to minor beneficial impacts.

Endemic plant species occur in Black Canyon NP and Curecanti NRA and would be protected under the general management plan provisions for appropriate habitats resulting in short- and long-term minor beneficial impacts. Black Canyon NP and Curecanti NRA staff currently monitor four endemic plant species populations resulting in long-term minor beneficial impacts resulting from informed management decisions due to population trends and the ability to mitigate adverse effects. The Black Canyon gilia could be affected during hiking and scrambling activities at the canyon edge resulting from scenic viewing, hiking canyon routes, and climbing; the extent of these impacts is unknown, but are likely to be short- to long-term negligible and adverse due to endemic plant crushing, removal, soil compaction, erosion, and/or nonnative species invasion. Hapeman's sullivania is monitored in hanging garden, bedrock seep, and spring habitat of the canyon walls resulting in long-term minor beneficial impacts due to informed management decisions concerning climbing routes and population trends. Hapeman's sullivania could be affected during climbing and scrambling activities on alcoves and rock cracks and are likely to be long term negligible and adverse. The Gunnison milkvetch and adobe thistle are monitored in sagebrush and mixed shrublands and adjacent pinyon-juniper woodland habitat of the uplands resulting in long-term minor beneficial impacts due to informed management decisions relative to upland land use. The Gunnison milkvetch could be affected during cross-country hiking and camping activities resulting in short-term negligible adverse impacts due to crushing, removal, soil compaction, erosion, or nonnative species invasion.

Results of consultation among federal, state, and local agencies and citizens would provide long-term minor to moderate beneficial impacts to the Gunnison sage-grouse population using sagebrush habitats due to access to additional resources, expertise, and funding. Applying the MRDG process to evaluate administrative actions and minimize impacts by determining appropriate techniques and equipment would result in short-term negligible to minor beneficial impacts on listed candidate, sensitive, and endemic species and populations of wildlife and plants. Peregrine falcon monitoring would continue and includes noting territory occupancy and success by year; this monitoring informs management actions (e.g., when climbing closures can be lifted) resulting in short- and long-term minor beneficial impacts. Monitoring selected endemic plant species by Black Canyon NP and Curecanti NRA staff to determine distribution, habitat requirements, and relative health would result in long-term minor beneficial impacts due to informed management decisions under existing plans. Imperiled plant communities have been identified, described, and mapped within Black Canyon NP and Curecanti NRA resulting in long-term minor beneficial impacts due to protective management decisions based on map overlay information. Future NPS monitoring of imperiled plant communities and incorporation of the data into fire management and

wildlife habitat planning would result in long-term minor beneficial effects due to informed management decisions.

Cumulative Impacts. Past, present, and reasonably foreseeable future management plans with the potential to affect TES species include implementation of the Curecanti Resource Protection Strategy and Black Canyon fire management plan and minor boundary correction legislation in Black Canyon uplands. The implementation of the Curecanti Resource Protection Strategy would have long-term minor beneficial impacts on wildlife due to working in partnership with adjacent landowners and managers, conservation of natural resources, and landscape-level management. The implementation of the Black Canyon fire management plan, and the minor boundary correction legislation in Black Canyon uplands would have short-term negligible to minor adverse, and long-term minor beneficial impacts on TES and their habitats due to the short-term effects of prescribed fires to TES species and the long-term effect of more diverse habitat establishment. The cumulative impacts of these past, present, and reasonably foreseeable future actions, in conjunction with the no-action alternative, would have short- and long-term negligible to minor beneficial and adverse impacts to TES species.

Conclusion. The no-action alternative consists of actions under the current management and other plans and the cumulative impact scenarios previously described. Cumulative effects of implementing future management actions and plans with respect to TES species (e.g., *Black Canyon NP Resource Management Plan*, Curecanti NRA Resource Protection Study, fire management plan, and MRDG process) would be likely to result in a combination of short- and long-term negligible to minor beneficial effects due to the resource management focus. Past, present, and reasonably foreseeable future projects with the potential to affect TES species include implementation of the minor boundary correction legislation in Black Canyon uplands and the adoption of the preferred alternative in the motorized vehicle access plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The no-action alternative would contribute a negligible to minor adverse to minor beneficial effect to cumulative impacts.

Threatened, Endangered, and Species of Special Concern Environmental Consequences Under the Preferred Alternative

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA. Many of the visitor use and management actions that are currently affecting TES species as described under the no-action scenario would remain the same. Management actions and strategies associated with the preferred alternative that would have the potential to affect TES species include new trail development, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary. Interpretive information prepared under the proposed Plan to educate the user public concerning TES species, behavior, life cycles, and habitats would result in long-term negligible beneficial impacts because natural resource education is important to preserving TES species and habitat.

Threatened, Endangered, and Species of Special Concern Environmental Consequences

Potential new trail construction on the Black Canyon uplands zone (North Vista Trail extension to overlook and loop, North Rim Ranger Station to Deadhorse Trail, South Rim Trail, Red Rock Canyon access, and Chukar Trail to Red Rock Canyon); Curecanti Blue Mesa zone (Stevens Creek to Elk Creek and Ponderosa Campground to the access road into Forest Service lands); and the Curecanti EPMP zone (Pine Creek to Blue Creek) would affect up to 9.7 acres of upland woodland and less extensive shrubland habitat. In general, adverse impacts of trail construction and use would be mitigated by planning locations to avoid TES species habitat, control erosion using best management practices, and monitor and control nonnative plant species along new trails.

Within the Black Canyon NP uplands and Curecanti NRA Blue Mesa zones, the candidate Gunnison sage-grouse would be disturbed by trail construction activities through sagebrush habitats. New trail locations would be planned and designed to avoid occupied Gunnison sage-grouse habitat and impacts to the extent possible. The lek within Curecanti NRA would be avoided and no work or hiking would be allowed in its vicinity during the breeding season resulting in short-term negligible beneficial impacts. New trail siting, construction, and use by hikers in Gunnison sage-grouse habitat would result in short-term negligible adverse impacts due primarily to human presence and noise generation. New trail construction through occupied habitat for the Gunnison's sage-grouse would result in a determination of "may affect, not likely to adversely affect" this species.

Within the Black Canyon NP uplands and Curecanti NRA EPMP zones, the Townsend's big-eared bat, a state species of special concern, would be disturbed by trail construction activities through woodland habitats. New trail locations would be planned and designed to avoid Townsend's big-eared bat habitat to the extent possible. New trail siting, construction, and use by hikers in Townsend's big-eared bat habitat would result in short-term negligible adverse impacts due to human presence and noise generation.

Populations of endemic plants occurring in Black Canyon NP and Curecanti NRA would be avoided using existing map overlays and/or new field surveys during the new trail planning and siting phase resulting in no impacts. Any off-trail hiking and camping activities once the trails are constructed could result in short-term negligible adverse impacts to endemic plant species due to crushing and soil disturbance.

In the inner canyon zone, habitat restoration following vault toilet removal at two sites may provide increased hunting opportunities for peregrine falcons resulting in long-term negligible beneficial impacts.

Effects related to any additional research and monitoring, the MRDG process, and management actions to control nonnative species and rehabilitate sites would be the same as described under the no-action alternative. The TES species within Black Canyon NP and Curecanti NRA would generally remain undisturbed and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, fire management, and climbing plan provisions for TES species; therefore, there would be short- and long-term direct and indirect negligible adverse impacts to TES species management.

Cumulative Impacts. The preferred alternative consists of actions under the Wilderness and Backcountry Management Plan and the management and other plans previously described.

Cumulative effects of implementing future management actions and plans with respect to TES species (e.g., defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA would be likely to result in a combination of short- and long-term negligible to minor beneficial effects due to the resource protection and management focus. Past, present, and reasonably foreseeable future projects with the potential to affect TES species include implementation of the minor boundary correction legislation in Black Canyon uplands and the adoption of the preferred alternative in the Motorized Vehicle Access Plan in Curecanti NRA, which would have short- and long-term negligible beneficial impacts. The preferred alternative would contribute a short-term negligible to minor adverse and long-term minor beneficial effect to cumulative impacts.

Conclusion. There would be short- and long-term negligible adverse and beneficial impacts to TES species and habitat of Black Canyon NP and Curecanti NRA under the preferred alternative. The preferred alternative would contribute short-term negligible to minor adverse and long-term minor beneficial cumulative impacts to TES species and habitat within Black Canyon NP and Curecanti NRA.

BLACK CANYON NP / CURECANTI NRA OPERATIONS

A number of federal, state, and local agencies have lands and/or facilities within the existing Curecanti NRA, including National Park Service, Bureau of Reclamation, Bureau of Land Management, U.S. Forest Service, Colorado Division of Wildlife, and Western Area Power Administration. The National Park Service has the responsibility for managing Black Canyon NP. The implementation of this Wilderness and Backcountry Management Plan would be the responsibility of the National Park Service, so other agencies are not discussed in this section.

The National Park Service manages the natural and cultural resources, public recreation, and associated facilities at Curecanti NRA and Black Canyon of the Gunnison National Park as one operating unit with two districts. The NPS superintendent has overall authority and utilizes five divisions for operating the two areas: (1) Resource Stewardship and Science; (2) Interpretation, Education, and Technology; (3) Visitor Protection and Fee Collection; (4) Facility Management; and (5) Administration and Concession Management. The staff consists of approximately 32 permanent positions, 5 term positions, and 44 seasonal positions. This work force is supplemented by over 5,000 hours per year of Volunteers-in-Parks service (NPS 2008).

Staff expertise is provided by a number of specialized positions in outdoor education, information technology, ecology, hydrology, aquatic ecology, terrestrial biology, archeology, interpretation, law enforcement, climbing/backcountry, GIS, fee collection, and maintenance and administration (NPS 2008).

Currently, NPS staff comply with numerous federal and state laws, regulations, and NPS policies; manage and implement numerous plans and actions to protect resources; address visitor use, safety, and experience; provide access and law enforcement; and maintain facilities. Just a few of these regulations, plans, and actions include:

- Endangered Species Act
- National Historic Preservation Act
- executive orders
- NPS director’s orders and policies
- general management plan
- superintendent’s compendium
- *Interim Climbing Management Plan*
- Curecanti NRA Resource Protection Strategy
- fire management plan
- nonnative plant management
- wilderness permits
- interagency memorandum of agreements
- concessions contracts
- *Curecanti National Recreation Area Off-Highway Vehicle Evaluation and Interim Management Plan*
- interpretive material and programs
- *Minimum Requirements Decision Guide*
- Clean Water Act

Black Canyon NP / Curecanti NRA Operations Environmental Consequences

NPS staff knowledge regarding operational efficiency was used to determine the intensity levels of potential impacts. For purposes of analyzing potential impacts, the threshold of change is defined as follows:

Impact Intensity	Intensity Definition
Negligible	The impact could change Black Canyon NP and Curecanti NRA operations, but the change would be addressed within current operations (staff, facilities, and funding).
Minor	The impact could require a slight change in Black Canyon NP and Curecanti NRA operations, with few measurable consequences that would require a need for additional staff, facilities, or funding.
Moderate	The impact would result in readily apparent changes to Black Canyon NP and Curecanti NRA operations with measurable consequences that would require a need for additional staff, facilities, and/or funding.
Major	The impact would result in a substantial change in Black Canyon NP and Curecanti NRA operations. These changes would require a need for additional staff, facilities, and/or funding that could not be obtained.

The effects to operations are considered short term if the impact lasts less than three years after the implementation of an action. Impacts would be long term if they last more than three years.

Black Canyon NP / Curecanti NRA Operations Environmental Consequences Under the No-action Alternative

Over the long term, visitor use at Black Canyon NP and Curecanti NRA would be expected to increase. Law enforcement and emergency services staff would continue to respond to calls at current or near current levels, maintenance staff would continue to service backcountry and wilderness facilities not operated by the concessioner, resource management staff would continue monitoring and restoration activities, and interpretive staff would offer educational and interpretive programs. The *Interim Climbing Management Plan*, inner canyon permit system, and Red Rock Canyon lottery system would continue to be implemented in Black Canyon NP inner canyon. The National Park Service would continue to implement the current MRDG process for prohibited uses in the wilderness. The *Minimum Requirements Decision Guide* does not apply to operations in the East Portal-Morrow Point or Blue Mesa. NPS staff activities would be expected to increase as visitor use increases. The no-action alternative would not measurably change current NPS operations associated with wilderness and backcountry management.

Cumulative Impacts. Cumulative effects of implementing other management actions and plans, development of private lands near Curecanti and the Black Canyon, and activities by other federal, state, and local agencies with respect wildlife, water, transportation, and other resources in the area, would be likely to cumulatively result in a combination of short-term and long-term minor adverse effects on park operations due to additional staff time required. The no-action alternative would contribute a negligible effect to cumulative impacts.

Conclusion. Under the no-action alternative, existing conditions in the wilderness and backcountry area of Black Canyon NP and Curecanti NRA would continue. The no-action alternative would contribute a negligible effect to cumulative impacts.

Black Canyon NP / Curecanti NRA Operations Environmental Consequences Under the Preferred Alternative

Many of the current plans and programs under the no-action alternative would continue. Law enforcement and emergency services staff would continue to respond to calls at current or near-current levels, maintenance staff would continue to service backcountry and wilderness facilities not operated by the concessioner, resource management staff would continue monitoring and restoration activities, and interpretive staff would offer educational and interpretive programs. The permit system would continue to be implemented in the inner canyon, and the proposed climbing management plan adopted.

The National Park Service would streamline the MRDG process for prohibited uses in the wilderness, and some structures would be removed, resulting in a negligible to minor beneficial long-term impact on park operations.

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and character. Some projects would require additional funding (new trails, removing structures), which is not guaranteed by the adoption of this Plan. New programs would be implemented; for example, implementing the climbing management plan in East Portal-Morrow Point, which would require additional staff effort. To successfully implement the wilderness and backcountry management plan, NPS staff would be required to monitor change and trends in wilderness character and implement management strategies for degradation. If the North Rim ranger station is used for visitor orientation, additional interpreters would be needed. These additional responsibilities on staff would result in a minor to moderate adverse long-term impact on park operations.

Implementation of the Wilderness and Backcountry Management Plan would also require local and national reporting (Landres et al. 2008). These reports would require data tracking and compilation, although the NPS staff is currently tracking and collecting data for up to 75% of the measures and standards. Evaluating resources and monitoring change in wilderness character, implementing management strategies to correct downward trends, and data tracking and compilation for reports would result in a short- and long-term minor adverse impact to NPS operations.

Cumulative Impacts. Cumulative effects of implementing other management actions and plans, development of private lands near Curecanti and the Black Canyon, and activities by other federal, state, and local agencies with respect to wildlife, water, transportation, and other resources in the area, would be likely to cumulatively result in a combination of short-term and long-term, minor to moderate adverse effects on park operations due to additional staff time required. The preferred alternative would contribute a short- and long-term minor adverse effect to cumulative impacts on park operations.

Conclusion. The preferred alternative would result in a short- and long-term negligible to minor beneficial, and minor adverse impact to NPS operations. The preferred alternative would contribute short- and long-term minor adverse effects to cumulative impacts on park operations.

VISITOR USE AND EXPERIENCE

Overall Use

In south-central Colorado, a region known for an abundance of scenic, cultural, and year-round recreation opportunities, as well as wildlife, vegetation, and other resources. Curecanti NRA and Black Canyon of the Gunnison NP offer exceptional high-quality outdoor recreation, wilderness, and educational opportunities for residents of the region as well as for travelers and visitors to the area.

Water-based recreation is the predominant draw attracting visitors to Curecanti NRA. Recreation includes power boating, boat fishing, sailing, windsurfing, waterskiing, fly fishing,

rafting, kayaking, and canoeing. Rafting, kayaking, and canoeing occur on Morrow Point and Crystal reservoirs; and kayaking and canoeing occur in Blue Mesa. Land-based activities include shore fishing, hiking, camping, both in developed campgrounds and at boat-in shoreline sites, picnicking, biking, cultural study, horseback riding, nature study, and photography. Hunting is permitted in Curecanti NRA, subject to prohibitions on discharging firearms near developed or popular areas. Winter recreation includes ice fishing, ice climbing, cross-country skiing, and snowshoeing.

Backcountry use at Curecanti NRA consists primarily of hiking, camping, rock climbing, boating, fly fishing, and visitors seeking solitude. Visitor use has trended modestly upward over the long term. Annual visitor use to Curecanti NRA within the past decade averaged just over 942,000 visitors per year and ranged from 732,713 in 2002 to 1,022,320 (table 11). The 2002 low reflected the effects of drought that dropped the pool elevation of Blue Mesa Reservoir to its lowest levels in 25 years. The all-time high of 1,125,447 visitors to Curecanti NRA occurred in 1989.

TABLE 11. ANNUAL RECREATION VISITOR USE, 2000 TO 2010, CURECANTI NRA AND BLACK CANYON NP

Year	Curecanti NRA	Black Canyon of the Gunnison NP
2000	1,022,320	191,506
2001	879,776	181,018
2002	732,713	173,687
2003	1,008,810	167,247
2004	1,006,102	175,581
2005	882,768	180,814
2006	936,380	160,450
2007	964,640	219,576
2008	1,007,444	160,185
2009	953,169	171,451
2010	969,541	170,940
10-Year Average	942,151	177,496

Annual recreation use at Black Canyon averaged 177,496 visitors per year over the past decade, ranging from 160,450 to 219,576 and trending lower. The all-time high of 373,600 visitors to Black Canyon NP occurred in 1976. In contrast to Curecanti NRA, where many of the major activity sites enjoy relatively good highway access via U.S. 50, most activity sites at Black Canyon NP, including the visitor center, North Rim ranger station, overlooks, trailheads, and access to the Gunnison River, are further removed from a major highway. Water-based recreation opportunities in Black Canyon NP include kayaking, fishing, and boating up from Gunnison Gorge Wilderness Area. The Gunnison River is undammed as it courses through the Black Canyon; however, its flow is largely regulated by the Gunnison Diversion and Crystal Dams upstream in Curecanti NRA. Key visitor opportunities at Black Canyon NP include

the scenic, educational, and almost spiritual experience associated with the canyon, wildlife observation, technical rock climbing, hiking, fly fishing, and camping. In keeping with federal law, possession of firearms is allowed, but hunting and discharging firearms is prohibited within Black Canyon NP. Winter recreation activities include cross-country skiing, ice climbing, and snowshoeing. Congress designated the inner canyon lands below the rims as wilderness, which affords visitors opportunities for primitive recreation and solitude.

Selected Characteristics of Visitor Use

Seasonality. Visitor use at both parks is seasonal, reflecting the concurrent influences of summer travel patterns, weather conducive to camping, fishing, and other outdoor activity, and high pool elevations for Blue Mesa Reservoir. Peak use, representing approximately 20% of total annual use, occurs in July. The annual stonefly hatch at the end of June and early July prompts a surge in fishing activity in the canyon. Visitation and fishing also increases on the reservoirs during this time when the weather is favorable, fishing is good, and pool elevations are high. August and June are the next highest months in terms of visitor use, with 15% to 17% occurring in each month (figure 8). Between 60% and 65% of total annual recreation use occurs in the four-month period of June through September.

Winter use is low with less than 10% of the total annual visitor use at each park occurring from December through March. Although the Elk Creek and South Rim visitor centers are open year-round, Blue Mesa Reservoir ices over and the North Rim, East Portal, and South Rim (beyond the visitor center) roads in the Black Canyon are closed during the winter.

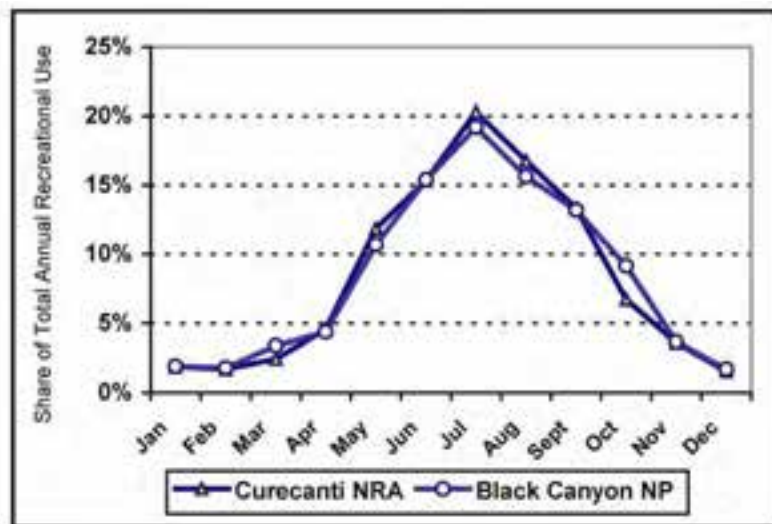


FIGURE 8. SEASONAL PATTERN OF RECREATIONAL VISITOR USE – BLACK CANYON NP AND CURECANTI NRA

Day Use / Overnight Use. Day use accounts for the majority of all visitor use at both parks; 94% at Curecanti (approximately 900,000 visitors annually) and 91% at Black Canyon of the

Gunnison (approximately 160,000 visitors annually). Peak overnight use occurs in July. During the five-year period, 2005 through 2009, overnight use averaged nearly 17,000 visits at Curecanti NRA and 3,400 visits at Black Canyon NP.

Geographic Distribution of Use. Use at Curecanti is heavily concentrated on and around Blue Mesa Reservoir (frontcountry zoning). Facilities supporting such use include two marinas, each with a small store, multiple boat ramps, picnic areas, and campgrounds. Private recreational vehicle parks/campgrounds near the park, primarily situated along U.S. 50, also cater to park visitors.

The majority of recreation use at Black Canyon NP occurs on the South Rim, where most of the visitor service facilities are located. In addition to the visitor center and South Rim campground, visitor service facilities include picnic areas, comfort stations, hiking trails, and numerous overlooks providing visitors opportunities to enjoy spectacular views into the inner canyon, including the Painted Wall. Most of the rock climbers attracted by the exceptional advanced climbing opportunities at Black Canyon, base their climbs from the North Rim, although climbing also occurs on the South Rim. A free wilderness use permit is required for all inner canyon activities.

Commercial Services. A broad range of commercial services are provided to visitors by concessioners and commercial use authorizations at Curecanti NRA and Black Canyon NP. Concessioners operate authorized facilities and services under multiyear contracts with the National Park Service that commonly involve an established business location(s) within a park, and return a franchise fee to the government. The Elk Creek Marina at Curecanti is a concession operation.

Commercial use authorizations typically involve the provision of a specific or limited range of services associated with uses that have been determined to be appropriate to the specific park. Services provided via commercial use authorizations do not have established business locations within a park, requiring arrangements for services to be made outside the park. Commercial use authorizations are typically issued for a year or two, are renewable subject to review by the park, and are limited to commercial operations with annual gross receipts of not more than \$25,000 associated with services provided within the park, or the incidental use of resources for services provided, which originate and terminate outside the park (Public Law 105-391 and NPS *Management Policies 2006*).

Current commercial use services authorized at Black Canyon NP and Curecanti NRA include:

- Concessioners
 - Elk Creek and Lake Fork marinas, including boat rentals, repair services and store (Curecanti NRA)
 - Pappy's full service restaurant (Curecanti NRA)
- Commercial Use Authorizations
 - horseback riding (Curecanti NRA)
 - hiking guides (Curecanti NRA)
 - boating, kayaking, rafting, and canoeing (Curecanti NRA)

- hunting guide service (Curecanti NRA)
- photography tours (Curecanti NRA)
- rock climbing guide services (Curecanti NRA, Black Canyon NP)
- fishing guide services, including ice fishing (Curecanti NRA)

Currently, commercial services provided in areas covered by the Plan include rock climbing guide services, limited horseback riding, and fishing and hunting guide services.

Wilderness and Backcountry Use. Current levels of wilderness and backcountry use are estimated based on information self-reported by users obtaining free wilderness use permits (Black Canyon NP), entrance permit sales, camping fees, traffic counts, and field observations of park staff.

Water-based use, including shoreline use and camping at developed campgrounds, account for the majority of all use at Curecanti NRA. Permits are not required for land-based recreation in the EPMP and Blue Mesa zones. Estimated backcountry use at Curecanti accounts for a small percentage of total annual visitor use, and much of that is linked to water-based activity.

In the EPMP zone, use outside of the immediate vicinity of the road corridors is access constrained. Most visitors view the lands between the Blue Mesa Dam site and the boundary of Black Canyon NP from overlooks. River/reservoir and access to the bottom of the canyons is available at East Portal, Cimarron Dam, and Pine Creek and via the few trails along the North Rim. Kayaking and canoeing in the EPMP necessitates visitors to carry in their equipment, as there are no boat ramps. The trails are steep and challenging. Campground capacity is limited. There are campsites with picnic tables, tent pads, and vault toilets on the reservoir shoreline, and some visitors hike down for overnight camping. A few visitors hike to the reservoir shoreline to fish, some carrying light boats. Except for the boat tours and motorized access adjacent to Cimarron, the soundscape in the EPMP backcountry is largely natural. The overall experience is remote and natural in an isolated canyon.

Most visitors access the Blue Mesa backcountry by boat and use the shoreline for fishing, picnicking, swimming, and camping. Neversink and Cooper Ranch are popular for fly fishing. Camping is allowed along the South shore, and on Red Creek island, except within 0.5 mile of any developed area, bridge, maintained public road, or backcountry campsite. There are several boat-in campsites with vault toilets, tent pads, and picnic tables. There are a few, lightly used hiking trails and one horse trail. Some climbing occurs in the Gunnison River Canyon of the Blue Mesa area. Hang gliders and paragliders launch on adjacent BLM lands, occasionally landing illegally in Curecanti NRA. Natural soundscapes are affected by traffic on the major highways through Curecanti NRA, boating on Blue Mesa Reservoir, and nearby development.

Backcountry use comprises approximately 2% to 3% of annual recreation use at Black Canyon NP. Day users, other than climbers, including those visitors accessing the established wilderness in the uplands portion of Black Canyon, account for approximately 50% of backcountry use. Rock climbing represents 30% of wilderness use, with modest overnight and multiday visitor use in the uplands portion of Black Canyon NP accounting for the remaining 20% of wilderness use.

The narrow, nearly vertical walls of the inner canyon, with many faces in excess of 1,800 vertical feet, draw advanced-skill climbers, and inspire awe from visitors peering in from the rim. Ledges on the canyon walls support nests of the peregrine falcon, raven, and canyon wren, among other wildlife species. The Gunnison River, with flows of outstandingly clean water, supports a rich aquatic life that entices anglers to the canyon bottom for unparalleled fly-fishing experiences, particularly during the annual stonefly hatch.

Hikers and campers are also drawn to the canyon bottom. Most of the hiking routes into the canyon are steep, mostly rocky, have few signs, and are lightly maintained. A permit system with a fixed number of permits available to enter the inner canyon during a particular period, regulates use in the inner canyon. Most visitors are accommodated. Within the canyon, campers select from unoccupied and undesignated sites. Fires are not permitted. Two composting toilets serve users of popular hiking routes, although human waste proliferation represents a management concern. The canyon environment is primarily influenced by natural forces, showing little visual influence of humans. The canyon area below the rim comprises the Black Canyon of the Gunnison Wilderness.

The uplands within Black Canyon NP include woodlands, open stands of Gambel oak, mountain big sagebrush providing habitat for many avian species, small mammals, elk, and mule deer. Open vistas are viewed during the day and the wide open, night skies offers serenity to visitors. The western portion of Black Canyon NP is adjacent to other federally managed land, including the Gunnison Gorge National Conservation Area (BLM), providing additional recreation opportunities to visitors.

Backcountry and wilderness use, particularly in Black Canyon NP, is more seasonally concentrated than is overall use. Approximately 25% to 30% of total wilderness use occurs during July, and 75% to 80% of total annual use occurs in the four-month period of June through September. In part, weather is a major factor influencing seasonal use, as climbing, camping, and hiking use in the inner canyon increases with longer days and warmer weather.

Individuals and those in small parties (two to four individuals) account for most of the use in the wilderness.

Residents of Colorado account for the majority of use at Black Canyon NP and Curecanti NRA. However, the exceptional fly-fishing and rock climbing opportunities within the inner canyon draw national and international visitors. Many become repeat visitors to the park.

Rock climbing opportunities within the inner canyon are technically challenging, requiring advanced skill. Climbing activity is presently guided by the *Interim Climbing Management Plan*. Black Canyon NP has long been established as a traditional area where use of climbing bolts is minimized. Sixteen new climbing routes were established from 2006 to 2009, with a total of 59 bolts in the inner canyon (Mims 2010). Most climbing parties consist of multiple members and are self-supporting. Other climbers, particularly those unfamiliar with the canyon or unaccompanied by a support party, employ the services of climbing guides holding commercial use authorizations authorizing them to provide support services to climbers. Park staff estimate that approximately 15% to 20% of all ascents use such services.

Visitor Use and Experience Environmental Consequences

National Park Service *Management Policies 2006* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the National Park Service is committed to providing appropriate, high-quality opportunities for people to enjoy the parks.

In designating the Black Canyon of the Gunnison as a national park, Congress recognized that Black Canyon NP and adjacent lands include, among other values:

- Unique ecological, geological, scenic, historical, and wildlife components enhanced by the serenity and rural western setting of the area.
- Extensive opportunities for educational and recreational activities, including public use for hiking, camping, and fishing, and for wilderness value.

At Curecanti NRA, the park purpose includes providing for public use and enjoyment, ensuring public safety and resource preservation and conservation. Water- and land-based recreation, as well as scenic, historical, and archeological resources, is recognized as providing opportunities for visitor use.

Public scoping input and observation of visitation patterns, combined with an assessment of what is available to visitors under current management, were the basis for assessing the potential effects of the actions in the various alternatives of this document. The potential for change in visitor use and experience in the backcountry and in wilderness was evaluated by identifying projected changes in accessibility, activity, or use associated with the alternatives.

Visitor experiences are multidimensional, involving a variety of characteristics including:

- accessibility to backcountry and/or wilderness opportunities
- the diversity of backcountry opportunities provided
- opportunities for solitude and the degree of self-reliance required

The thresholds of change for the intensity of an impact to visitor use and experience are defined as follows:

Impact Intensity	Intensity Definition
Negligible	The visitor would not be affected or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.
Minor	Changes in backcountry and wilderness visitor use and/or experience would be slight, but detectable. Changes would not appreciably alter critical characteristics of the visitor experience. Visitor satisfaction would generally remain unchanged.

Impact Intensity	Intensity Definition
Moderate	Many visitors to the backcountry and wilderness would be aware of the effects of associated changes, and the number of participants accessing the backcountry and/or wilderness could be affected. Visitor satisfaction would begin to change and visitors would likely be able to express an opinion about the changes.
Major	Changes in visitor use and/or experience would be apparent to many visitors to the parks, and/or the number of visitors to the backcountry and/or wilderness would be greatly reduced or increased. Visitors would be aware of the effects associated with the alternative, visitor satisfaction would markedly decline or increase and many would likely express strong opinions about the changes.

Effects to visitor use and experience are considered short term if the effects occur and persist for up to two years following the implementation of an action. Effects extending beyond two years are considered long term. Long term is not, however, synonymous with permanent because some actions involve natural processes.

Visitor Use and Experience Environmental Consequences Under the No-action Alternative

Visitor use and experience at Curecanti and Black Canyon under the no-action alternative would reflect a continuation of current management, maintenance of existing opportunities, and access. Over the long term, visitor use at Curecanti NRA and Black Canyon NP would be expected to increase modestly, primarily in response to population growth in the surrounding region. Year-to-year fluctuations in visitor use, for instance, in response to drought affecting pool elevations in Blue Mesa Reservoir, could result in multiyear periods of decreased use. The long-term increases in overall visitor use, as well as the year-to-year fluctuations, would be most noticeable in the frontcountry, for instance, in the level of boating and fishing use on and camping at the developed campgrounds around Blue Mesa Reservoir.

Backcountry and wilderness visitor use and experience at Curecanti NRA and Black Canyon NP under the no-action alternative would continue essentially unchanged from the current situation. Wilderness in the inner canyon and backcountry areas in the uplands would provide visitor opportunities in a natural, largely untrammled and undeveloped setting. Existing trails would provide backcountry access to the canyon bottoms and shorelines along Crystal and Morrow Point reservoirs. River and shoreline access by canoes and kayaks for day-use and some overnight use would be facilitated by access points at East Portal, Cimarron, and Pine Creek. Backcountry campsites at Blue Mesa would be accessed primarily via boats. Visitor use at Red Rock Canyon would be managed using the current lottery system, with current seasonal use limits on the daily number of visitors, maximum party size, and length of stay. Backcountry recreation use would continue between the inner canyon and the neighboring Gunnison Gorge National Conservation Area.

Rock climbing opportunities in the inner canyon would attract climbers from across the nation and around the world. Climbing in the inner canyon would continue under management direction established in the *Interim Climbing Management Plan*. Guided climbing would be available, authorized under commercial use authorizations, catering primarily to climbers

unfamiliar with the Black Canyon and those seeking to advance their climbing skills. Rock climbing opportunities would be maintained in the EPMP, but without an established management plan to protect resources, promote safety, and address commercial services.

Existing developed backcountry visitor facilities, including campgrounds, picnic tables, vault toilets, and interpretive kiosks/signs would be maintained in East Portal-Morrow Point and Blue Mesa zones. Overnight use in the inner canyon would be managed via the existing permit system, with campers selecting from among unoccupied campsites. Over time, increases in wilderness use may result in an increased number of potential visitors who are not accommodated by the permit system. Permits would not be required for overnight use in the uplands, EPMP, and Blue Mesa. Over the long term, occasional crowding/overuse may occur at some campgrounds, diminishing the quality of experience of affected visitors.

New trails or trail rerouting would occur only where necessary to protect resources.

The National Park Service would continue to manage wildlife populations and fish habitat within the parks, as well as provide input to regulation changes. Fishing and hunting regulations would continue to be the responsibility of the Colorado Division of Wildlife

Efforts to address nonnative/invasive species, remove existing unwanted structures and improvements, address grazing impacts, and identify wilderness boundaries would continue.

The National Park Service would manage eligible and potentially eligible wilderness lands in the same manner as the designated wilderness pending further action by Congress with respect to wilderness designation.

The National Park Service would continue to implement the current MRDG process for prohibited uses in the inner canyon and uplands. The *Minimum Requirements Decision Guide* does not apply to operations in the EPMP or Blue Mesa zones.

Most visitors would be satisfied with and value the quality of their backcountry and wilderness experiences at Curecanti and Black Canyon under the no-action alternative. Management actions undertaken under the no-action alternative, for example, vegetation treatment, may result in temporary, short-term minor adverse effects on visitor experience for some visitors. Long-term minor adverse effects on visitor experience could also arise from increasing use and potential resource damage. The net result of the no-action alternative would be long-term minor to moderate beneficial effects on visitor use, and long-term minor adverse effects on visitor experience.

Cumulative Effects. Cumulative effects of other management actions, development of private lands near Curecanti and the Black Canyon, and activities by other federal, state, and local agencies with respect to wildlife, water, transportation, and other resources in the area, would be likely to cumulatively result in a combination of short-term and long-term minor to moderate effects on visitor experience. Both beneficial and adverse effects could result, with the net result being indeterminate. These actions may individually and cumulative increase signs of, or awareness of human activity in the backcountry, and impact visual quality.

Conclusion. The continuation of current management would likely result in long-term minor to moderate beneficial effects in promoting backcountry and wilderness visitor use at Curecanti NRA and the Black Canyon NP. Opportunities to experience solitude and natural sights and sounds in an outdoor setting and to engage in outdoor pursuits challenging physical capabilities and promoting self-reliance would be available and accessible; however, the increase in use may result in some short-term adverse effects on visitor experience. Together with the effects of other actions, the cumulative effects on visitor use would be minor to moderate and beneficial in the long term and minor long term and adverse with respect to visitor experience. The effects of the no-action alternative would make a modest contribution to the total cumulative effects.

Visitor Use and Experience Environmental Consequences Under the Preferred Alternative

Over the long-term, visitor use at Curecanti NRA and Black Canyon NP would be expected to increase modestly under the preferred alternative, both in response to population growth in the surrounding region and management actions to provide additional recreation and educational opportunities in the backcountry and wilderness while protecting the character of these areas. Year-to-year fluctuations in use, in response to factors including drought that affects water levels in Blue Mesa reservoir, would result in some multi-year periods of decreased use. The long-term increases in overall visitor use, as well as the year-to-year fluctuations would be most noticeable in the frontcountry, for instance, in the level of boating and fishing use on, and camping at the developed campgrounds around Blue Mesa Reservoir.

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities at Curecanti NRA and Black Canyon NP. Active and ongoing monitoring of critical indicators, used in conjunction with established standards, would provide a basis to identify beneficial and adverse trends in visitor use and experience and provide management with vital information to identify, prioritize and implement changes in “on the ground” management to protect resources, while simultaneously supporting public recreation use. Implementation of some actions may result in short-term and long-term adverse effects on use and experience, but are expected to result in long-term net benefits in terms of visitor use and experience.

The preferred alternative encompasses actions and strategies that would apply uniformly across the entire backcountry and wilderness area covered by this Plan, as well as actions and strategies that apply to only a specific management zone. Management actions and strategies associated with the preferred alternative that would apply across wider areas include:

- Regulations banning B.A.S.E. jumping, paragliding, and hang gliding throughout Curecanti NRA and Black Canyon NP would be adopted, although emergency landings by hang gliders and paragliders in the Blue Mesa zone would be allowed.
- Camping in the EPMP, Blue Mesa, and uplands backcountry zones would initially continue without a permit system. Backcountry campsites would be maintained and made available on a first-come-first-served basis but levels of use and experience would

be monitored. Resource degradation or decreases in visitor satisfaction could potentially result in implementation of adaptive management strategies to protect resources and provide for continued public use.

The above actions and strategies would accommodate long-term increased backcountry use. Should the level of backcountry camping increase to the point that management limits on use are enacted, the net result would be long-term trade-offs between visitor use (adverse) and visitor experience (beneficial).

Formal adoption of bans on B.A.S.E. jumping, hang gliding, and paragliding, except in cases involving emergency landings at Blue Mesa, would also involve trade-offs between those who would like to see these activities approved, and visitors who view the activity as detrimental to backcountry and wilderness experiences.

Accommodation of higher levels of winter use would result in minor long-term beneficial effects on backcountry visitor use and experience. The level of incremental use would be small. The remainder of this assessment focuses on the individual management zones/areas encompassed by this Plan.

EPMP/Blue Mesa Backcountry Zones. Visitors would continue to enjoy a peaceful setting for hiking, camping, hunting, boating, climbing, and viewing the canyon segment above Morrow Point and Crystal reservoirs from overlooks and trails on the North Rim. New hiking trails could be added from Pine Creek to Blue Creek (EPMP), and a new trail at Ponderosa Campground for hikers and equestrians to connect NPS lands with adjacent public lands managed by the Bureau of Land Management and U.S. Forest Service. Improved connections would result in beneficial long-term effects on backcountry visitor experience and slight net increases in use. A new multiuse trail for hiking, bicycling and equestrian use could be constructed from Steven's Creek to Elk Creek (Blue). Changes in allowable recreation uses could be implemented on existing trails; including equestrian use on portions of the Dry Gulch trail, and bicycle use on the Beaver Creek Trail.

Horse use, bicycling, and motorized use would not be permitted in the EPMP zone, but would be allowed in areas and on routes that are proposed for motorized vehicle access in the Motorized Off-highway Vehicle Evaluation and Interim Management Plan, and on selected connector trails. Additional areas below the high water line would be considered for horse use as the necessary cultural resource evaluations are conducted. Backcountry recreation opportunities would be increased in Blue Mesa by creating a few new trails to expand hiking, biking, and equestrian access to the backcountry, resulting in beneficial long-term effects on backcountry visitor experience and day-use. Motorized use would continue to be allowed on trails and shore areas identified in the Off-highway Vehicle Plan. Bicycles would be allowed in the same areas as the off-highway vehicles; for more detail, see table 1. The experiences of many overnight visitors at developed campgrounds at Blue Mesa Reservoir would benefit from the addition of these trails. Changes affecting horse use would affect the experiences of some users and may result in slight net increases in visitor use.

Boat-in camping along the shoreline would continue, both at developed campsites and elsewhere in the backcountry.

There are currently no commercial services on the land-based backcountry of the EPMP zone. Current commercial uses in the Blue Mesa backcountry zone include a commercial use authorization for horses. Based on NPS *Management Policies 2006*, appropriate commercial services for the EPMP zone include hiking, climbing, fishing (Morrow Point only), boating and kayaking, and educational tours. Appropriate commercial services for the Blue Mesa backcountry zone include hiking, climbing, camping, fishing, boating and kayaking, horseback riding, educational tours, and off-highway vehicles on designated trails. Proposals would be evaluated with consideration of the goals of protecting and enhancing the natural and remote backcountry in these zones (appendix E). Approval of commercial services would result in slight increases in visitor use over the long term, affording more opportunities for visitors to experience the backcountry. Backcountry visitors who value self-reliance and prefer more solitude may see their experience diminished as a result of the introduction of commercial services.

Management actions with respect to removing invasive plants while restoring native habitat could result in short-term adverse effects on visitor experience, but result in long-term benefits in terms of improved ecological health affecting the natural setting.

Management actions within Curecanti NRA and Black Canyon NP to protect natural soundscape and night skies in the backcountry, as well as supporting efforts undertaken in cooperation with other public land managers and private landowners, would yield long-term benefits on backcountry user experience in the EPMP and Blue Mesa.

The current *Interim Climbing Management Plan* developed for the inner canyon would be adapted to the climbing opportunities and resource protection needs of the EPMP and adopted. The proposed climbing management plan for Curecanti NRA would address the unique needs of this area and would be adopted (appendix C). In general, new fixed anchors or bolts would be allowed with prior NPS authorization; replacement hardware would be allowed under specific guidance. Access permits are not presently required in this zone, and no change is foreseen, although use, hardware, and access impacts would be monitored. Nesting peregrine falcon pairs would be monitored and seasonal closures enforced to protect active nests.

The National Park Service would become more engaged with the Bureau of Land Management with respect to management of livestock grazing on public lands. Over the long term, the efforts would reduce the rare occurrence of trespass grazing on park lands, enhance the natural qualities of the backcountry, and promote a higher quality visitor experience.

Most visitors would be satisfied with and value the quality of their backcountry experience in the EPMP and Blue Mesa. Management actions undertaken under the preferred alternative, for example, vegetation treatment may result in temporary, short-term minor adverse effects on visitor experience for some visitors. Long-term effects on visitor use and experience resulting from the provision of additional recreation opportunities and resource protection and enhancement efforts, would be minor to moderate, and beneficial.

Black Canyon NP Wilderness and Backcountry Zones

Uplands of the Black Canyon. Under the preferred alternative, a combination of backcountry and wilderness management zoning would apply in the uplands. Overall management emphasis would be on maintaining and enhancing visitor experience. The primary road access to the uplands from which visitors access the backcountry and wilderness, would be unchanged under the preferred alternative. The North Rim ranger station (in frontcountry) would be maintained, and could serve an important role in visitor orientation and education for visitors entering into the backcountry and wilderness.

The proposed wilderness zoning recognizes the results of the wilderness eligibility assessment (appendix B) which identified 8,450 acres as eligible or potentially eligible for full wilderness study for potential addition to the wilderness system. Based on that determination, NPS management would focus on maintaining and enhancing the wilderness character of those lands, including opportunities for solitude and primitive and unconfined recreation that require high degrees of self-reliance and skill. Opportunities to experience solitude would be enhanced over the long-term under the preferred alternative due to management efforts directed toward protecting and enhancing soundscapes and night skies. The uplands wilderness zone would be the focus of an intensive program of invasive plant removal and native plant/habitat restoration.

The uplands wilderness zone would remain relatively free of recreational development, with freedom to hike, cross-country ski, and camp. Existing trails would remain in the primitive wilderness subzone. The pristine wilderness subzone would remain trail-less.

There are no designated campsites or toilet facilities and none would be designated or constructed in the uplands wilderness subzones, unless future use dictates the need. Visitors would be expected to follow appropriate leave-no-trace guidance for human waste (using human waste bags for storage and transport) and for minimum impact camping. Outstanding opportunities for solitude would be maintained by monitoring wilderness character and making management adjustments if change occurs.

The park would implement guidelines for research and scientific activities in uplands wilderness zones that encourage and permit scientific studies that are consistent with the preservation and management of wilderness.

The National Park Service would become more engaged with the Bureau of Land Management regarding management of grazing on public lands to maintain and enhance the natural, untrammeled, and undeveloped qualities of wilderness. Unnecessary facilities and structures, including stock ponds and corrals, would be removed. Additional fencing may be necessary to improve natural qualities by discouraging trespass grazing.

The uplands backcountry subzone would be managed similar to the uplands primitive wilderness subzone without the legal and policy requirements of wilderness. Black Canyon NP would follow the MRDG process to ensure administration of the wilderness minimizes prohibited activities including the use of chainsaws and helicopters and to minimize manipulation of the natural environment.

Horse use in the uplands is only allowed on Deadhorse Trail and would be allowed on possible future extensions of this trail under the preferred alternative, maintaining existing opportunities for this activity. Restricting horse use to this trail would limit the potential conflicts between equestrian and hiking uses.

The establishment of two new trails linking the uplands with the adjacent Gunnison Gorge Wilderness would expand wilderness day use and overnight opportunities and experiences for visitors.

Backcountry experiences would benefit from parkwide management efforts to protect and enhance natural soundscapes and night skies.

No commercial services are presently authorized in the uplands wilderness and backcountry. Based on NPS *Management Policies 2006*, proposals for “necessary and appropriate” commercial services would be evaluated in the Upland zone (backcountry and wilderness), with consideration given to the goals of protecting and enhancing the natural settings and resources, as well as promoting solitude and primitive forms of recreation. Commercial services involving motorized uses are not “necessary and appropriate” for the uplands wilderness and backcountry. Appropriate commercial services for the uplands backcountry and wilderness zone might include hiking, camping, and educational tours. Approval of commercial services may afford more opportunities for visitors to experience the backcountry and wilderness, resulting in slight increases in visitor use over the long-term. Wilderness and backcountry visitors who value self-reliance and prefer more solitude may see their experience diminished as a result of the introduction of commercial services.

Most visitors would be satisfied with and value the quality of their backcountry and wilderness experience in uplands. Some management actions undertaken under the preferred alternative, for example, the removal of structures may result in temporary, short-term minor adverse effects on visitor experience for visitors who happened to be in the area at the time. Long-term effects on visitor experience resulting from the resource and wilderness character protection and enhancement efforts would be minor-to-moderate and beneficial. Implementation of the preferred alternative would have little long-term effect on the overall level of visitor use in the uplands.

Gunnison Gorge Wilderness Interface. The Gunnison Gorge Wilderness interface zone would include the inner canyon and uplands area abutting the western boundary of Black Canyon NP and adjacent lands managed by the Bureau of Land Management as part of the Gunnison Gorge National Conservation Area. Access to this area is via foot from the Chukar Trail (BLM). The common boundary area, known as Margaritaville, hosts one designated campsite for boaters and one for walk-in users. Entry limits are in place at the Red Rock Canyon trailhead (uplands), the use increases on BLM-managed land downstream of the Red Rock Canyon Trail access during the hatch. The Black Canyon opens slightly and is less deep within this stretch of the river, such that river rafting becomes more feasible and common from a point approximately one mile within Black Canyon NP. All lands within the Gunnison Gorge Wilderness interface zone are designated wilderness.

The visitor experience is challenging, attracting visitors who are adventurous, self-reliant, and possess wilderness skills. Overall management emphasis would be to maintain and enhance

visitor experience through efforts and strategies to maintain the untrammeled, natural and undeveloped characteristics of the wilderness. The National Park Service and the Bureau of Land Management would consider developing joint river recreation, blending regulations between the agencies for consistency to promote resource protection objectives and visitor enjoyment. Current commercial services (river guides) managed by the Bureau of Land Management, would continue. The two agencies would coordinate resource management and patrols and would develop a joint-use trail in the uplands (see table 1). Changes to facilitate additional use would not be a priority, and any actions that would alter visitor use would be subject to results of extensive baseline monitoring and assessment relative to established indicators and standards.

Most visitors would be satisfied with and value the quality of their wilderness experience in the Gunnison Gorge wilderness interface zone under the preferred alternative. Long-term effects on visitor experience resulting from the resource and wilderness character protection and enhancement efforts would be minor-to-moderate and beneficial. Implementation of the preferred alternative would have little long-term effect on the overall level of visitor use in the uplands.

Inner Canyon. Whether viewed from the rims, the canyon floor, climbing one of the walls, or hiking one of the routes from the rims to the floor, the inner canyon is awesome. The depth, narrowness, and sheer face of the canyon walls provide a unique setting for wilderness use, one that by its very nature limits the level of visitor use but is fundamental to the visitor experience. Overall management emphasis would be on maintaining and enhancing visitor experience. Actions to facilitate additional use would not be a priority. Visitor use and experience in the inner canyon would be subject to extensive monitoring and assessment relative to established indicators and standards. The primary road access to frontcountry locations on the South Rim Drive and Black Canyon Road from which most visitors access wilderness, would be unchanged under the preferred alternative.

Rock climbing in the inner canyon would continue to offer technical climbers extraordinary opportunities for traditional challenges. The current *Interim Climbing Management Plan* for the inner canyon would be revised to protect the natural and undeveloped quality of wilderness, with the revised plan subsequently adopted. Visitor participation in this activity is inherently self-regulating due to the physical stamina and skills required.

No commercial services would be authorized in the inner canyon under the preferred alternative. Commercial guided climbing services currently authorized via commercial use authorizations would be discontinued in the inner canyon. Without the guide service, some climbers may opt to follow different routes, opting to climb elsewhere, including in the East Portal-Morrow Point, or rely on other climbers with experience in the inner canyon. The change may result in slight long-term decreases in climbing activities and those offering guide services would experience long-term reductions in revenues associated with the services provided in Black Canyon NP.

Access to the inner canyon would continue to be managed by the backcountry permit system, with extensive ongoing monitoring of activity to maintain and enhance the wilderness character. A combination of designated campsites and provision for dispersed camping would be established in the inner canyon. Existing vault toilets on the canyon floor would be

removed and rules requiring visitors to pack out waste adopted. Those changes would require short-term adjustments for visitors used to the current rules, however, over the long term they become accepted practice. Impacts associated with visitor use would be monitored (see indicators, measures, and standards) and if there are significant changes, adjustments to the permit system may be warranted.

There are no trails, new trails would not be constructed, and existing access routes into the canyon would remain unimproved, except for minor re-routing to mitigate specific erosion problems. A requirement for visitors to store food and trash in rodent- and bear-proof containers would be implemented.

To maintain and improve natural qualities in the inner canyon wilderness zone, tamarisk shrubs or small trees would continue to be monitored, and management actions enacted to reduce infestation and/or establishment. Livestock use would not be authorized in the inner canyon wilderness zone.

Peak and shoulder flows mimicking a natural hydrograph remain the centerpiece of desired conditions for the Gunnison River ecosystem. The National Park Service would work diligently with the Bureau of Reclamation to ensure the delivery of the Black Canyon NP decreed water right to maintain or enhance canyon forming processes and a sustainable river ecosystem.

To maintain and improve the untrammeled quality, the National Park Service would follow the MRDG process to ensure that administration of the backcountry seeks to minimize or avoid prohibited activities including the use of chainsaws and helicopters and to minimize the manipulation of the natural environment. Guidelines for research and scientific activities that encourage and permit scientific activities that are consistent with the preservation and management of wilderness would be implemented.

The overwhelming majority of visitors who access the inner canyon would be satisfied with and value the quality of their wilderness experience under the preferred alternative. Implementation of the preferred alternative would have little long-term effect on the overall level of visitor use in the inner canyon. In fact, that is a desired objective. Minor, short-term, adverse effects on visitor use and experience would occur during implementation of some management actions. Long-term effects on visitor experience resulting from the resource and wilderness character protection and enhancement efforts would be minor-to-moderate and beneficial.

The overall effect of the preferred alternative on backcountry and wilderness visitor use and experience would be minor to moderate and beneficial over the long term. Overall visitor satisfaction would remain high, although short-term isolated decreases in satisfaction may occur in conjunction with implementation of specific actions or programs. Monitoring and adaptive management responses would combine to maintain visitor use and enhance visitor experience-above levels under the no-action. The net result of the preferred action alternative would be long-term minor to moderate beneficial effects on visitor use and visitor experience.

Cumulative Effects. Cumulative effects of other management actions, development of private lands near Curecanti and the Black Canyon, and activities by other federal, state, and local agencies with respect to wildlife, water, transportation, and other resources in the area, would be likely to cumulatively result in a combination of short-term and long-term minor to moderate effects on visitor experience. Both beneficial and adverse effects could result, with the net result being indeterminate. These actions may individually and cumulative increase signs of, or awareness of human activity in the backcountry, and impact visual quality.

Conclusion. The implementation of management zoning and backcountry and wilderness management under the preferred alternative would result in long-term minor to moderate beneficial effects in promoting backcountry and wilderness visitor use at Black Canyon NP and Curecanti NRA. Opportunities to experience solitude and natural sights and sounds in an outdoor setting and to engage in outdoor pursuits challenging physical capabilities and promoting self-reliance would be available, accessible and enhanced. Together with the effects of other actions, the cumulative effects on visitor use and experience would be minor to moderate and beneficial in the long-term. The effects of the preferred alternative would account for modest contribution to the total cumulative effects.

WILDERNESS AND BACKCOUNTRY CHARACTER

Additional description of wilderness and backcountry character and qualities for Black Canyon NP and Curecanti NRA can be found in chapter 1 of this document.

Black Canyon of the Gunnison Wilderness and Backcountry

As stated earlier, wilderness character is described as four necessary and interrelated qualities: untrammeled, natural, undeveloped, and solitude or primitive and unconfined recreation. Together, the four qualities comprise the integrated ecological and social system of wilderness. For backcountry, the qualities are natural, undeveloped, and solitude or primitive and unconfined recreation. Current baseline conditions under the no-action alternative are described below for each of these qualities for Black Canyon NP wilderness and backcountry.

Untrammeled Quality of Wilderness

Within the untrammeled quality, wilderness is essentially unhindered and free from human control or manipulation. Indicators of the untrammeled quality of wilderness include actions authorized by the federal land manager that manipulate the biophysical environment, and similar actions not authorized by the federal land manager. The overall untrammeled quality of the Black Canyon of the Gunnison Wilderness is exceptional. Natural processes predominate, and there are not many actions that control or manipulate the earth and its community within wilderness. There are some actions taken by the National Park Service to improve the natural condition, and such actions slightly diminish the untrammeled quality.

In the inner canyon there are some invasive plants, but their pathways are limited to the river bottoms and along hiking routes, and fires are less likely to occur than on the uplands. Terrain of the inner canyon also confines management actions to access corridors and the river bottom. Thus, the inner canyon requires fewer park management actions and is a little more wild (less trammled) than the uplands. Wildlife in the inner canyon may be affected by the activities of visitors.

Most park management actions that diminish the untrammled quality of wilderness take place in the uplands, where grazing is authorized, more possible fire starts, more invasive plants, elk (collaring), and the terrain permits more management actions. The uplands also have more unauthorized actions such as trespass livestock and stock pond improvements. Actions include radio collaring of elk and control of nonnative plants. In accordance with the Fire Management Plan, the park staff responds to natural fires with suppression or using wildland fire to meet resource objectives, but in some years, there are no natural fires.

Pressures of invasive nonnative plants are expected to stay the same or increase over time, which would result in a similar or increased number of management actions to control or reduce them. Ongoing law enforcement and public awareness is likely to lead to fewer unauthorized actions such as trespass grazing. The overall trend for this quality would be toward less wild or more trammled due to human actions to control and manipulate the ecological processes.

Natural Quality of Wilderness and Backcountry

Within the natural quality, wilderness ecological systems are substantially free from the effects of modern civilization. Indicators of the natural quality include plant and animal species and communities, physical resources, and biophysical processes.

The overall natural quality of Black Canyon of the Gunnison wilderness is exceptional.

The majority of sensitive species are found in the inner canyon. Peregrine falcons are monitored, and visitor closures occur during sensitive times. Terrain of the inner canyon has limited the incursion of most non-indigenous species and allowed more natural fire regimes to occur. There is, however, tamarisk and reed canary grass in the river bottom. There is some erosion on hiking routes, and there are nonnative fish in the river. Natural stream flow is extremely important in the inner canyon, and connectivity of the river is important for aquatic life. One of the human influences on the natural system is the controlled flow of the Gunnison River by the Aspinall Unit. The pre-impoundment river system scoured the riverbed and eroded the canyon walls. Historically, the upstream impoundments have altered the natural movement of rock and sediment and altered the riparian system. The 2008 National Park Service water right decree allows for the delivery of peak and shoulder flows based on annual upper basin snow pack. The National Park Service works with the Bureau of Reclamation for more natural water flows.

The uplands experience authorized grazing and more soil disturbance and widespread invasive nonnative species. Connectivity in the uplands to adjacent undeveloped land, both public and

private, is important for elk, deer, grouse, and many other species. The natural quality of the inner canyon is higher than the uplands.

Peregrines would continue to be pressured by climbing activities, but seasonal closures would protect the falcons. Nonnative invasive plants would continue to spread, but monitoring, active weed management and a comprehensive tamarisk control program would counteract that trend. Air and water quality are good. Some trends would be pushing the wilderness to a less natural condition. Most of the indicators for the natural quality of wilderness have trends pushing in both directions, resulting in an offset that would be relatively stable.

Undeveloped Quality of Wilderness and Backcountry

Within the undeveloped quality, wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation. Indicators of the undeveloped quality include nonrecreational structures, installations, and developments; inholdings; use of motor vehicles, motorized equipment, or mechanical transport; and loss of statutorily protected cultural resources

Black Canyon NP wilderness is overall relatively undeveloped. The uplands have fencing, stock ponds, a radio repeater, abandoned roads (mostly unpaved two-tracks), an irrigation ditch, and other structures related to grazing. The uplands have had some authorized and unauthorized use of motorized transport and equipment in wilderness. While the park strives to apply the MRDG process to actions, there is occasional use of chainsaws and motorized vehicles in the uplands for resources management, and helicopters in the rugged terrain of the inner canyon for emergencies and resource management. The rugged terrain of the inner canyon has precluded past and current nonrecreational developments. Cultural resources within the wilderness are primarily archeological sites, and are scattered in the uplands, and routes and campsites in the inner canyon have been utilized by humans for thousands of years. These cultural resources are an integral part of the wilderness character and are protected by statute. The uplands are more developed than the inner canyon.

Opportunities for Solitude or Primitive and Unconfined Recreation Quality of Wilderness and Backcountry

Wilderness provides opportunities for solitude or primitive and unconfined recreation. Indicators of this quality include remoteness from the sights and sounds of people inside the wilderness, remoteness from occupied and modified areas outside the wilderness, facilities that decrease self-reliant recreation, and management restrictions on visitor behavior.

Gold Medal trout waters attract fishermen down into the rugged canyon in June. Most of the hiking routes into the canyon are constrained by steep terrain; they are mostly rocky, have little erosion and are not maintained. There are few signs. There is currently a permit system with a fixed number of permits available for entering the inner canyon. With the exception of the Red Rock Canyon access, most visitors are accommodated. Within the canyon, people can select their own camping location. No fires are permitted, but there are illegal fire rings left behind. People also leave caches of gear, and create ad-hoc furniture. There are two

composting toilets at the bottom of popular hiking routes, although there are still problems with human waste. Guided camping is not currently allowed, but illegal guiding activity occurs.

Climbing is the other major popular activity in the inner canyon, with a number of well-used common climbing routes. The *Interim Climbing Management Plan* allows existing hardware to remain, and limits use of new hardware. There is a system that allows replacement of existing hardware or hardware on new routes. The climbing permit system is managed by a climbing ranger. There are seasonal closures of specific areas to protect peregrine falcons. Guiding climbing is currently allowed.

The inner canyon is also used by hikers and adventurous kayakers. The soundscape is dominated by the roar of the Gunnison River through the gorge. The park is closed to B.A.S.E. jumping.

The permit systems for access into the inner canyon accommodate most existing demand. Some visitors would be turned away during the peak of fishing, but most of the year there would be surplus capacity. There would likely be more total users over time, and more associated impacts of users, such as fire rings, ad-hoc furniture, caches, human waste, and vegetation impacts. Most of the routes into the canyon are rocky and some have erosion problems, and there would be some trail braiding and erosion on the Red Rock Canyon route. There would be interest in providing commercially guided hiking and fishing. The interest in climbing would continue primarily on established routes, but there would likely be interest in new routes and new technology. The soundscape of the inner canyon would be stable.

The uplands wilderness has light day-use for hiking and occasional horseback riding. There is no permit system. People could camp, but do so rarely. There are few trails, minimal signs, and no commercial services. There is some cross-country skiing in the winter. The landscape is open and the soundscape is more sensitive to external sounds than the inner canyon. The night sky is more visible. The overall opportunity for solitude or primitive and unconfined recreation is greater in the uplands than the inner canyon.

The uplands would likely remain at a low level of use; although some visitors may seek more hiking opportunities that are not vertical. Decisions about winter road grooming in the frontcountry may create more demand for access for cross-country skiing in the upland wilderness. Dark night sky and soundscapes would likely to be diminished over time from the increasing urbanization of the area.

Curecanti National Recreation Area Backcountry Character. The character of the nonwilderness backcountry include three qualities: natural, undeveloped and visitor opportunities appropriate to this setting. The current qualities of Curecanti NRA backcountry under the no-action alternative are described in chapter 1 and below.

Natural Quality of Backcountry— The overall natural quality of the backcountry is exceptional. The majority of sensitive species are found in the EPMP area. Peregrine falcons are monitored, and visitor closures occur during sensitive times. Terrain of the EPMP has limited the incursion of non-indigenous species to travel routes and the canyon bottom, and has allowed more natural fire regimes to occur. The Blue Mesa area has fewer sensitive species, but more rare plant populations than wilderness or the EPMP area. The Blue Mesa area has

authorized grazing, which is primarily managed by the Bureau of Land Management. There are many invasive nonnative species. There is disturbance to vegetation cover on the Blue Mesa lands from past activities and land uses, resulting in soil erosion. The Blue Mesa area is important habitat for grouse, and connectivity to adjacent undeveloped land, both public and private, is important. Communities of elk, sheep, and deer are found in Blue Mesa. Hunting is allowed in the Curecanti NRA, it is managed by the state, and condition of these hunted populations is stable. The natural quality of the East Portal-Morrow Point zone is greater than that of Blue Mesa.

In the East Portal-Morrow Point and Blue Mesa zones, the Gunnison River is impounded by dams, resulting in an overall less natural condition than the wilderness in Black Canyon NP.

Peregrine falcons would continue to be monitored, and visitor closures would continue to occur during sensitive times.

The Blue Mesa zone has fewer sensitive species, but more rare plant populations than wilderness or the East Portal-Morrow Point zone. Managers would continue present treatments and likely increase efforts to remove invasive plant stands and individuals while restoring native habitat. Rare and/or sensitive plant species would continue to be monitored and managed in consultation with other federal and state agencies. The current fire management plan would guide actions regarding wildfire.

Water quality and connectivity of terrestrial habitats with adjacent lands are at risk from development. Baseline soundscape and night sky data would be collected, and conditions monitored in the East Portal-Morrow Point zone. The overall natural quality of the backcountry is outstanding; however, the natural quality of the East Portal-Morrow Point zone is greater than that of Blue Mesa. Most of the indicators for the natural quality of backcountry have trends pushing in both directions, resulting in an offset that would be relatively stable.

Undeveloped Quality of Backcountry—The backcountry of Curecanti NRA has minor developments. The administrative use of motor vehicles, motorized equipment or mechanical transport is allowed in backcountry. Minor administrative structures are also allowed in the backcountry. There are NPS radio repeaters in the backcountry. There are also regional power lines that cross the backcountry, primarily in the Blue Mesa lands. Blue Mesa has a number of nonrecreational structures related to grazing—stock ponds, two-track dirt roads, irrigation development, and fences.

There is a high density of archeological sites on the Blue Mesa lands. Although not extensively surveyed, Blue Mesa would likely have more cultural resources than in the East Portal-Morrow Point lands because the terrain is less steep and had more human activity. There are ruins of an old sawmill near the West Elk area of Blue Mesa. Blue Mesa has more developments than East Portal-Morrow Point lands.

Existing management zoning limits most major NPS developments to frontcountry areas. There are proposals for cell phone towers, and likely to be more in the future. There would be a high risk to degradation of cultural resources on Blue Mesa lands from backcountry use,

erosion, and theft. The overall trend for this quality would be toward more developed due to presence of and potentially the installation of more structures.

The overall trend for this quality would be toward more developed due to presence of structures and evidence of temporary human habitation.

Backcountry Visitor Opportunities Quality— No permits are required for land-based recreation in the backcountry. The night sky is good, but not exceptional in the backcountry because of surrounding development. There are a few signs at campsites. There are commercial use authorizations for boating, hunting, and fishing guides (guided fishing is not authorized at East Portal).

Most visitors view the EPMP lands from overlooks on the canyon rims, and few venture down the trails. The popular boat tour of Morrow Point Reservoir involves a 1-mile hike from Pine Creek to board the boat in East Portal-Morrow Point, but the tour as presently configured does not let people off on shore for additional hiking. There are campsites with picnic tables, tent pads and vault toilets along the shore, and some hike down and stay overnight. A few also hike in for fishing and some carry boats to the reservoir. The largest concentration of ice climbs found within both Black Canyon NP and Curecanti NRA is located along Morrow Point Reservoir. The easiest access is by trespassing, but all climbs can be accessed legally. B.A.S.E. jumping is not allowed. There is some motorized access adjacent to the development at Cimarron, which is being addressed in a Off-highway Vehicle Access Plan. Except for the boat tours and area adjacent to Cimarron, the soundscape in the EPMP backcountry is largely natural. The overall experience is remote and natural in an isolated canyon.

Most visitors to Blue Mesa lands use the shoreline for fishing, picnicking, swimming, and camping. There are boat-in campsites with vault toilets, tent pads, and picnic tables. People are allowed to camp below the high water line under certain conditions. There are a few trails that are lightly used by hikers and occasionally equestrians. There is a little climbing in the Gunnison River Canyon. Hang gliders and paragliders launch on adjacent BLM lands, and occasionally land illegally on NPS land. There is more motorized access than at East Portal-Morrow Point, which is being addressed in a separate Off-highway Vehicle Access Plan. Natural soundscapes are affected by motorized access, boating on the Blue Mesa Reservoir, and adjacent development.

No permits are required for land-based recreation in the East Portal-Morrow Point and Blue Mesa areas. Commercial use authorizations for fishing, boating, and hunting guides would continue. The *Interim Climbing Management Plan* does not address climbing at East Portal-Morrow Point.

Visitors currently hike, fish, camp, picnic, and climb. The overall experience is remote and natural at East Portal-Morrow Point, and less remote in Blue Mesa. Additional recreational activities would be addressed as needs are identified and that are appropriate within the general management plan, NPS policies, and state and federal laws. Dark night sky and soundscapes would likely be diminished over time from the increasing urbanization and use of the area. The overall trend for this quality would be toward less visitor opportunity for semi-primitive experiences due to the potential for more crowding, and the lack of management actions to monitor and adjust to maintain semi-primitive experiences.

Wilderness and Backcountry Character Environmental Consequences

The park staff and NPS specialists identified wilderness character based on the guidance in *Keeping it Wild: An Interagency Strategy to Monitor Trends in Wilderness Character across the National Wilderness Preservation System*.

Public scoping input and observation of visitation and resource conditions, combined with an assessment of what is available to visitors under current management, were used to estimate the effects of the alternatives presented in this document. The impact on the character and quality of wilderness and backcountry areas were analyzed by examining resources and objectives presented in the park significance statement, the Plan, and the intent of the Wilderness Act. The potential for change in character and quality proposed by the alternatives was evaluated by identifying projected improved or diminished quality, to what degree and for how long. The thresholds of change for the intensity of an impact to wilderness and backcountry character are defined as follows:

Impact Intensity	Intensity Definition
Negligible	Wilderness or backcountry character would not be affected, or changes in character and qualities would be below or at the level of detection. Visitors would not likely be aware of the effects associated with the alternative.
Minor	Changes in wilderness or backcountry character and qualities would be detectable, although the changes would be slight. Some visitors would be aware of the effects associated with the alternative, but the effects would be slight and not noticeable by most visitors.
Moderate	Changes in wilderness or backcountry character and qualities would be readily apparent to most visitors. Visitors would be aware of the effects associated with the alternative and might express an opinion about the changes.
Major	Changes in wilderness or backcountry character and qualities would be readily apparent to all visitors, severely adverse or exceptionally beneficial. Visitors would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

Impacts to wilderness and backcountry character and qualities are considered short term if the effects last for up to three years after implementation of an action or visitor use. Impacts are considered long term if the effects last longer than three years.

Wilderness and Backcountry Character Environmental Consequences Under the No-action Alternative

Black Canyon NP Wilderness and Backcountry Character. The current wilderness and backcountry character and trends for the wilderness and backcountry qualities for Black Canyon NP and Curecanti NRA are described in chapter 1. Overall, wilderness qualities in

Black Canyon are currently high. Although no action represents no change in current management, most wilderness qualities are trending downward.

TABLE 12. SUMMARY OF WILDERNESS AND BACKCOUNTRY CHARACTER IN BLACK CANYON NP

Quality	Inner Canyon	Uplands	Trend
Untrammeled	Very high	High	Downward
Natural	Very high	High	Stable
Undeveloped	High	High	Downward
Opportunities for Solitude or Primitive	High	Very High	Downward

Therefore, status quo would result in negligible short-term and minor long-term adverse impacts to wilderness character and qualities in Black Canyon NP. The management of additional eligible and potentially eligible lands as wilderness would result in a negligible to minor long-term beneficial impact to wilderness character and qualities in Black Canyon NP.

Curecanti NRA Backcountry Character. Overall, backcountry qualities in Curecanti range from low to high. Although no-action represents no change in current management, most backcountry qualities are trending downward.

TABLE 13. SUMMARY OF BACKCOUNTRY CHARACTER IN CURECANTI NRA

Quality	EPMP	Blue Mesa	Trend
Natural	High	Average	Stable
Undeveloped	Average	Low	Downward
Visitor Opportunities	Average to High	Low to Average	Downward

Therefore status quo would result in negligible short-term and minor long-term adverse impacts to backcountry character in Curecanti NRA.

Cumulative Impacts. Past, present, and reasonably foreseeable future projects with the potential to affect wilderness and backcountry character include implementation of the adoption of the preferred alternative in the Motorized Vehicle Access Plan, minor boundary correction legislation in Black Canyon uplands, and increased development around the parks. The National Park Service would work with BLM on access and use for the lands recently acquired by the Bureau of Land Management near Red Rock Canyon; therefore, impacts would be negligible.

The Motorized Vehicle Access Plan would formalize off-highway vehicle use, and the minor boundary correction legislation in Black Canyon uplands would increase acres slightly

resulting in long-term minor beneficial impacts on wilderness and backcountry character. Dark night sky and soundscapes would likely be diminished over time from the increasing development and urbanization of the area; and development around the boundaries would reduce connectivity and put other stresses on the natural system. The no-action alternative would have negligible to minor, long-term adverse and short- and long-term minor beneficial contributions to cumulative impacts. The cumulative impacts of these past, present, and reasonably foreseeable future actions, in conjunction with the no-action alternative, would have short- and long-term negligible to minor beneficial and long-term negligible to minor adverse impacts on wilderness and backcountry character.

Conclusion. The current management of wilderness and backcountry represented under the no-action would result in negligible short-term and minor long-term adverse impacts to wilderness character in Black Canyon and backcountry character in Curecanti NRA. The management of additional eligible and potentially eligible lands as wilderness would result in a beneficial impact to wilderness character and qualities in Black Canyon NP. The no-action alternative would contribute short- and long-term beneficial and long-term negligible to minor adverse impacts to wilderness and backcountry character.

Wilderness and Backcountry Character Environmental Consequences Under the Preferred Alternative

The preferred alternative combines existing programs, actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities at Black Canyon NP and Curecanti NRA. Active and ongoing monitoring of critical indicators, used in conjunction with established standards, would provide a basis to identify trends in wilderness character and qualities thereby providing management with vital information to identify, prioritize and implement strategies to protect resources and wilderness character.

Black Canyon NP Wilderness and Backcountry Character

Untrammeled Quality of Wilderness— Many of the influences described under the no-action alternative would be expected to stay the same or increase over time. Under the preferred alternative, visitors would be required to carry rodent/bear-proof containers and trash storage, which would result in a short and long-term negligible to minor beneficial impact to untrammeled quality by reducing human influences on wildlife.

Natural Quality of Wilderness— Under the preferred alternative, many of the program and management actions under the no-action alternative would continue that influence the natural qualities, i.e., nonnative species would continue to be monitored and management actions implemented, park staff would continue to work with the Bureau of Reclamation on river flows, peregrine falcon would continue to be monitored and closures implemented, and natural fires would be used to meet resource objectives.

New programs and actions that would be implemented to improve natural quality include seeking outstanding waters designation to further protect water quality; establishing and

monitoring natural soundscapes, dark skies, and air quality; and rehabilitation of dispersed camping sites. These management actions would result in improvements to natural qualities in the wilderness and backcountry areas of Black Canyon, resulting in a short- and long-term negligible to moderate beneficial impact to natural quality.

Undeveloped Quality of Wilderness— There would likely be continued use of helicopters in the inner canyon for resource management and emergency response. There would also be a need to increase fencing to manage grazing, prevent trespass livestock, and improve the natural character of uplands wilderness; however, existing structures would be inventoried and structures determined not to be necessary would be removed. Management action would include implementing guidelines for research and management activities in wilderness. This would result in a short and long-term negligible to minor beneficial, and negligible to minor adverse impact to undeveloped quality.

Opportunities for Solitude or Primitive and Unconfined Recreation Quality of Wilderness— The permit systems for access into the inner canyon would continue. Commercial services would be discontinued in the Inner Canyon zones and authorized, as appropriate, in the Uplands zones. Campsites would be designated in the Inner Canyon primitive subzone. These actions would reduce the opportunities for solitude and primitive and unconfined recreation quality, resulting in a short and long-term negligible to minor adverse impact to this quality.

The composting toilets would be removed from the inner canyon, and campsites would not be designated in the inner canyon primitive subzone resulting in a minor, beneficial impact. Within the inner canyon and uplands pristine zone visitors would be able to select a camping area, which would allow for a more self-reliant experience. New trail opportunities in the Uplands primitive subzone and Gunnison Gorge wilderness zone would be pursued. These actions would result in a short and long-term minor beneficial impact to opportunities for solitude and unconfined recreation quality.

Overall, wilderness qualities in Black Canyon NP are currently high and would remain high. The preferred alternative represents a consistent and monitored approach to wilderness and backcountry character and quality management and would result in negligible to moderate short-and long-term beneficial impacts to wilderness and backcountry qualities and character in Black Canyon NP.

TABLE 14. SUMMARY OF WILDERNESS CHARACTER QUALITIES IN BLACK CANYON NP

Quality	Inner Canyon	Uplands	Trend
Untrammeled	Negligible improvement	Negligible improvement	Upward
Natural	Minor to moderate improvement	Minor improvement	Upward
Undeveloped	Minor improvement and negligible diminished	Minor improvement and minor diminished	Stable
Opportunities for Solitude or Primitive	Improvement and diminished	Improvement and diminished	Stable

Curecanti National Recreation Area Backcountry Character

Natural Quality of Backcountry. Under the preferred alternative, many of the program and management actions under the no-action alternative that influences natural qualities would continue, i.e., nonnative species would continue to be monitored and management actions implemented. New programs and actions that would be implemented including establishing and monitoring natural soundscapes, dark skies, and air quality; requiring visitors to use rodent/bear-proof containers and trash storage; working with the Bureau of Land Management on grazing permits. These management actions would result in improvement to natural qualities in the backcountry areas of Curecanti, resulting in a short and long-term minor beneficial impact to natural quality.

Undeveloped Quality of Backcountry. Under the preferred alternative, many of the program and management actions under the no action would continue. Overall nonrecreation development would be kept to a minimum, and non-recreational development would be inventoried and nonessential development removed; however, utility easements would likely be developed if necessary. This would result in short and long-term negligible to minor adverse and beneficial impacts to the undeveloped quality.

Backcountry Visitor Opportunities Quality. Under the preferred alternative, recreational activities and appropriate commercial services would be expanded. The Climbing Management Plan would be implemented in East Portal-Morrow Point. New trail opportunities in Blue Mesa would be pursued including allowing new uses on existing trails to accommodate horse and bike users of adjacent lands. This would result in short- and long-term minor beneficial impacts to visitor opportunities quality.

Overall, backcountry qualities in Curecanti NRA range from low to high. The preferred alternative represents a consistent and monitored approach to backcountry character and quality management and would result in negligible to minor, short-and long-term beneficial and minor long-term adverse impacts to backcountry character in Curecanti NRA.

TABLE 15. SUMMARY OF BACKCOUNTRY CHARACTER AND QUALITY IN CURECANTI NRA

Quality	EPMP	Blue Mesa	Trend
Natural	Minor improvements	Minor improvements	Upward
Undeveloped	Negligible improvements and minor diminishing	Negligible to minor improvements and minor diminishing	Stable
Visitor Opportunities	Negligible to minor improvements	Minor improvements	Upward

Cumulative Impacts. Past, present, and reasonably foreseeable future projects with the potential to affect wilderness and backcountry character include implementation of the adoption of the preferred alternative in the Motorized Vehicle Access Plan, minor boundary correction legislation in Black Canyon uplands, and increased development around the parks.

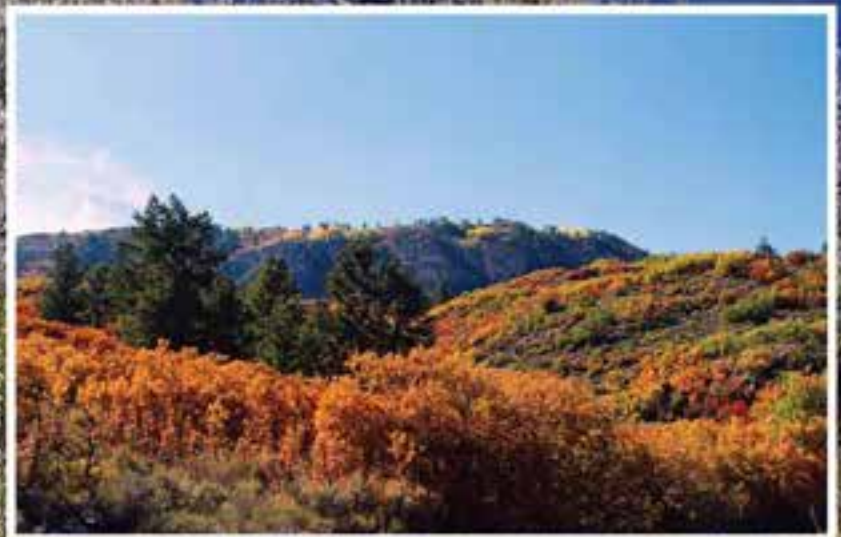
The Motorized Vehicle Access Plan would formalize off-highway vehicle use and the minor boundary correction legislation in Black Canyon uplands would increase acres slightly resulting in long-term beneficial impacts on wilderness and backcountry character. Dark night sky and soundscapes would likely to be diminished over time from the increasing development and urbanization of the area. The preferred alternative would have negligible to minor, long-term, adverse and short- and long-term beneficial contributions to cumulative impacts. The cumulative impacts of these past, present, and reasonably foreseeable future actions, in conjunction with the preferred alternative, would have short- and long-term beneficial and long-term negligible to minor adverse impacts on wilderness and backcountry character.

Conclusion. The preferred alternative represents more active and consistent management of wilderness and backcountry character. This would result in negligible to moderate, short- and long-term, beneficial, and negligible to minor short- and long-term adverse impacts to wilderness character in Black Canyon and backcountry character in Curecanti. The preferred alternative would contribute short- and long-term negligible to minor adverse and beneficial impacts on wilderness and backcountry character.

Chapter 4: Consultation and Coordination

Curecanti National Recreation Area Blue Mesa Zone

Desired Conditions-
remote
uncrowded
natural
expansive
open
rural



NPS Photo - Lisa Lynch

NPS Photo - Lisa Lynch

CHAPTER 4: CONSULTATION AND COORDINATION

SCOPING

Scoping is the effort to involve agencies and citizens in determining the scope of issues to be addressed in an environmental document. Among other tasks, scoping determines important issues and eliminates issues not important; allocates assignments among the interdisciplinary team members and/or other participating agencies; identifies related projects and associated documents; identifies permits, surveys, consultations, etc., required by other agencies; and creates a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Scoping includes any interested agency, or any agency with jurisdiction by law or expertise (including the Colorado State Parks/State Historic Preservation Office (SHPO), U.S. Fish and Wildlife Service, and the Bureau of Land Management) to obtain early input (appendix H).

External scoping was initiated in April 2010 with dissemination of a newsletter. Comments were solicited during the scoping period that ended May 31, 2010; a total of 37 comment letters were received. The public comments indicated desire for preservation of wilderness character to be a priority. The area is for the adventurous spirited and is awe inspiring. Qualities stated as important were the solitude and minimal encounters, natural water flows in Black Canyon, and maintaining a natural state free of human imprint, waste, and trash. There were suggestions for more recreational and education opportunities. Some comments were for more strict regulations on numbers, no new restrictions, and some felt the current regulations were too strict (climbing, closures, and fire). Some felt that trail erosion, grazing, campsite degradation, and human interface with animals should be addressed. Some felt that monitoring for special resources was important. All comments were reviewed and, where appropriate, incorporated into objectives and considered during the development of this Plan.

In accordance with the National Historic Preservation Act, letters (appendix H) requesting tribal consultation were mailed in November 2010 to the following tribes: Southern Ute, Ute Mountain Ute, and the Uintah and Ouray Tribe in Fort Duchesne, Utah. No comments were received from the tribes.

The scoping comment request letter was sent to the Colorado SHPO in November 2010 (appendix H). No comments were received. A copy of the environmental assessment would be sent to the Colorado SHPO for review and comment as part of the section 106 consultation process.

The National Park Service contacted the U.S. Fish and Wildlife Service by letter in November 2010. A reply identifying endangered and threatened species in and around Black Canyon NP was received on December 16, 2010. This correspondence is presented in appendix H. A copy of the contact letter will be sent to the U.S. Fish and Wildlife Service for review and comment.

Through internal and external scoping, issues associated with proposed backcountry management activities and impact topics were identified and addressed in this environmental assessment.

FUTURE CONSULTATION AND ENVIRONMENTAL COMPLIANCE

The proposed action identified a number of possible new trails in Black Canyon NP and Curecanti NRA. The actual location of these trails has not been determined, only general locations and connections. This environmental assessment does not provide site-specific data, and therefore, decisions at this level of detail have not been made. Before an “on-the-ground” action (e.g., building a new trail) can be taken, there must be site-specific environmental information available to a decision-maker in the form of a NEPA document. The timing of a site-specific environmental analysis would be at the point of making real and irrevocable commitments to a project or a course of action. The implementation of the preferred alternative does not guarantee funding, and therefore, some action may not be possible for 5, 10, or 20 years, until funds are made available. At the time that funding is available, and new trails would be located and designed, and site specific resource data, for natural and cultural resources surveys, would be collected, appropriate consultation would be conducted, and a NEPA document would be prepared.

LIST OF PREPARERS

This environmental assessment was prepared by AARCHER, Inc., under the direction of the National Park Service.

The preparers of this document are:

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Black Canyon NP/Curecanti NRA, NPS Intermountain Region, and the Denver Service Center staff provided invaluable assistance in the development and technical review of this environmental assessment. NPS staff that provided information includes:

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Appendixes

Black Canyon / Gunnison Gorge Zone

Desired Conditions-

wild
natural
rugged
awesome
remote
challenging
unspoiled
uncrowded



APPENDIX LIST

APPENDIX A: BLACK CANYON OF THE GUNNISON WILDERNESS LEGISLATION

APPENDIX B: WILDERNESS ELIGIBILITY ASSESSMENT

APPENDIX C: CLIMBING MANAGEMENT PLAN

APPENDIX D: MEASURES, STANDARDS, AND MANAGEMENT STRATEGIES

APPENDIX E: COMMERCIAL SERVICES ANALYSIS

APPENDIX F: MINIMUM REQUIREMENTS DECISION GUIDE

APPENDIX G: MANAGING SCIENTIFIC AND RESEARCH ACTIVITIES IN WILDERNESS

APPENDIX H: AGENCY COORDINATION

APPENDIX I: IMPAIRMENT STATEMENT

APPENDIX J: SOIL ASSOCIATIONS

**APPENDIX K: LIST OF ECOLOGICAL SYSTEMS, VEGETATION ALLIANCES, AND
PLANT ASSOCIATIONS**

APPENDIX L: SPECIAL STATUS ANIMAL AND PLANT SPECIES

APPENDIX LIST

APPENDIX A:
BLACK CANYON OF THE GUNNISON WILDERNESS LEGISLATION

90 STAT. 2692

PUBLIC LAW 94-567—OCT. 20, 1976

Public Law 94-567
94th Congress

An Act

Oct. 20, 1976
[H.R. 13160] To designate certain lands within units of the National Park System as wilderness; to revise the boundaries of certain of those units; and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), the following lands are hereby designated as wilderness, and shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act:

(a) Bandelier National Monument, New Mexico, wilderness comprising twenty-three thousand two hundred and sixty-seven acres, depicted on a map entitled "Wilderness Plan, Bandelier National Monument, New Mexico", numbered 315-20,014-B and dated May 1976, to be known as the Bandelier Wilderness.

(b) Black Canyon of the Gunnison National Monument, Colorado, wilderness comprising eleven thousand one hundred and eighty acres, depicted on a map entitled "Wilderness Plan, Black Canyon of the Gunnison National Monument, Colorado", numbered 144-20,017 and dated May 1973, to be known as the Black Canyon of the Gunnison Wilderness.

(c) Chiricahua National Monument, Arizona, wilderness comprising nine thousand four hundred and forty acres, and potential wilderness additions comprising two acres, depicted on a map entitled "Wilderness Plan, Chiricahua National Monument, Arizona", numbered 145-20,007-A and dated September 1973, to be known as the Chiricahua National Monument Wilderness.

(d) Great Sand Dunes National Monument, Colorado, wilderness comprising thirty-three thousand four hundred and fifty acres, and potential wilderness additions comprising six hundred and seventy acres, depicted on a map entitled "Wilderness Plan, Great Sand Dunes National Monument, Colorado", numbered 140-20,006-C and dated February 1976, to be known as the Great Sand Dunes Wilderness.

(e) Haleakala National Park, Hawaii, wilderness comprising nineteen thousand two hundred and seventy acres, and potential wilderness additions comprising five thousand five hundred acres, depicted on a map entitled "Wilderness Plan, Haleakala National Park, Hawaii", numbered 102-20,006-A and dated July 1973, to be known as the Haleakala Wilderness.

(f) Isle Royale National Park, Michigan, wilderness comprising one hundred and thirty-one thousand eight hundred and eighty acres, and potential wilderness additions comprising two hundred and thirty-one acres, depicted on a map entitled "Wilderness Plan, Isle Royale National Park, Michigan", numbered 139-20,004 and dated December 1974, to be known as the Isle Royale Wilderness.

(g) Joshua Tree National Monument, California, wilderness comprising four hundred and twenty-nine thousand six hundred and ninety acres, and potential wilderness additions comprising thirty-seven thousand five hundred and fifty acres, depicted on a map entitled

Wilderness areas.
Designation.
16 USC 1132
note.

Bandelier
National
Monument,
N. Mex.

Gunnison
National
Monument, Colo.

Chiricahua
National
Monument, Ariz.

Great Sand
Dunes
National
Monument,
Colo.

Haleakala
National
Park, Hawaii.

Isle Royale
National
Park, Mich.

Joshua Tree
National
Monument, Calif.

"Wilderness Plan, Joshua Tree National Monument, California", numbered 156-20,003-D and dated May 1976, to be known as the Joshua Tree Wilderness.

(h) Mesa Verde National Park, Colorado, wilderness comprising eight thousand one hundred acres, depicted on a map entitled "Wilderness Plan, Mesa Verde National Park, Colorado", numbered 307-20,007-A and dated September 1973, to be known as the Mesa Verde Wilderness.

Mesa Verde
National Park,
Colo.

(i) Pinnacles National Monument, California, wilderness comprising twelve thousand nine hundred and fifty-two acres, and potential wilderness additions comprising nine hundred and ninety acres, depicted on a map entitled "Wilderness Plan, Pinnacles National Monument, California", numbered 114-20,010-D and dated September 1975, to be known as the Pinnacles Wilderness.

Pinnacles
National
Monument, Calif.

(j) Saguaro National Monument, Arizona, wilderness comprising seventy-one thousand four hundred acres, depicted on a map entitled "Wilderness Plan, Saguaro National Monument, Arizona", numbered 151-20,003-D and dated May 1976, to be known as the Saguaro Wilderness.

Saguaro National
Monument, Ariz.

(k) Point Reyes National Seashore, California, wilderness comprising twenty-five thousand three hundred and seventy acres, and potential wilderness additions comprising eight thousand and three acres, depicted on a map entitled "Wilderness Plan, Point Reyes National Seashore", numbered 619-20,000-B and dated September 1976, to be known as the Point Reyes Wilderness.

Point Reyes
National
Seashore,
Calif.

(l) Badlands National Monument, South Dakota, wilderness comprising sixty-four thousand two hundred and fifty acres, depicted on a map entitled "Wilderness Plan, Badlands National Monument, South Dakota", numbered 137-20,010-B and dated May 1976, to be known as the Badlands Wilderness.

Badlands
National
Monument,
S. Dak.

(m) Shenandoah National Park, Virginia, wilderness comprising seventy-nine thousand and nineteen acres, and potential wilderness additions comprising five hundred and sixty acres, depicted on a map entitled "Wilderness Plan, Shenandoah National Park, Virginia", numbered 134-20,001 and dated June 1975, to be known as the Shenandoah Wilderness.

Shenandoah
National Park,
Va.

Sec. 2. A map and description of the boundaries of the areas designated in this Act shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the office of the Superintendent of each area designated in the Act. As soon as practicable after this Act takes effect, maps of the wilderness areas and descriptions of their boundaries shall be filed with the Interior and Insular Affairs Committee of the United States Senate and House of Representatives, and such maps and descriptions shall have the same force and effect as if included in this Act: *Provided*, That correction of clerical and typographical errors in such maps and descriptions may be made.

Map and
description,
public inspection.

Sec. 3. All lands which represent potential wilderness additions, upon publication in the Federal Register of a notice by the Secretary of the Interior that all uses thereon prohibited by the Wilderness Act have ceased, shall thereby be designated wilderness.

Publication in
Federal Register.
16 USC 1131
note.

Sec. 4. The boundaries of the following areas are hereby revised, and those lands depicted on the respective maps as wilderness or as potential wilderness addition are hereby so designated at such time and in such manner as provided for by this Act:

Boundary
revision.

90 STAT. 2694

PUBLIC LAW 94-567—OCT. 20, 1976

Ile Royale National Park, Mich. (a) Ile Royale National Park, Michigan:
The Act of March 6, 1942 (56 Stat. 133; 16 U.S.C. 408e-408h), as amended, is further amended as follows:

(1) Insert the letter "(a)" before the second paragraph of the first section, redesignate subparagraphs (a), (b), and (c) of that paragraph as "(1)", "(2)", "(3)", respectively, and add to that section the following new paragraph:

"(b) Gull Islands, containing approximately six acres, located in section 19, township 68 north, range 21 west, in Keweenaw County, Michigan."

16 USC 408g. (2) Amend section 3 to read as follows:
"Sec. 3. The boundaries of the Ile Royale National Park are hereby extended to include any submerged lands within the territorial jurisdiction of the United States within four and one-half miles of the shoreline of Ile Royale and the surrounding islands, including Passage Island and the Gull Islands, and the Secretary of the Interior is hereby authorized, in his discretion, to acquire title by donation to any such lands not now owned by the United States, the title to be satisfactory to him."

Pinnacles National Monument, Calif. (b) Pinnacles National Monument, California:
(1) The boundary is hereby revised by adding the following described lands, totaling approximately one thousand seven hundred and seventeen and nine-tenths acres:

(a) Mount Diablo meridian, township 17 south, range 7 east: Section 1, east half east half, southwest quarter northeast quarter, and northwest quarter southeast quarter; section 12, east half northeast quarter, and northeast quarter southeast quarter; section 13, east half northeast quarter and northeast quarter southeast quarter.

(b) Township 16 south, range 7 east: Section 32, east half.

(c) Township 17 south, range 7 east: Section 4, west half; section 5, east half.

(d) Township 17 south, range 7 east: Section 6, southwest quarter southwest quarter; section 7, northwest quarter north half southwest quarter.

(2) The Secretary of the Interior may make minor revisions in the monument boundary from time to time by publication in the Federal Register of a map or other boundary description, but the total area within the monument may not exceed sixteen thousand five hundred acres: *Provided, however,* That lands designated as wilderness pursuant to this Act may not be excluded from the monument. The monument shall hereafter be administered in accordance with the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented.

(3) In order to effectuate the purposes of this subsection, the Secretary of the Interior is authorized to acquire by donation, purchase, transfer from any other Federal agency or exchange, lands and interests therein within the area hereafter encompassed by the monument boundary, except that property owned by the State of California or any political subdivision thereof may be acquired only by donation.

Appropriation authorization. (4) There are authorized to be appropriated, in addition to such sums as may heretofore have been appropriated, not to exceed \$955,000 for the acquisition of lands or interests in lands authorized by this subsection. No funds authorized to be appropriated pursuant to this Act shall be available prior to October 1, 1977.

Sec. 5. (a) The Secretary of Agriculture shall, within two years after the date of enactment of this Act, review, as to its suitability or nonsuitability for preservation as wilderness, the area comprising approximately sixty-two thousand nine hundred and thirty acres located in the Coronado National Forest adjacent to Saguaro National Monument, Arizona, and identified on the map referred to in section 1(j) of this Act as the "Rincon Wilderness Study Area," and shall report his findings to the President. The Secretary of Agriculture shall conduct his review in accordance with the provisions of subsections 3(b) and 3(d) of the Wilderness Act, except that any reference in such subsections to areas in the national forests classified as "primitive" on the effective date of that Act shall be deemed to be a reference to the wilderness study area designated by this Act and except that the President shall advise the Congress of his recommendations with respect to this area within two years after the date of enactment of this Act.

Rincon
Wilderness Study
Area, suitability
review.
16 USC 1132
note.

Report to
President.
16 USC 1132.

(b) The Secretary of Agriculture shall give at least sixty days' advance public notice of any hearing or other public meeting relating to the review provided for by this section.

Notice and
hearing.

Sec. 6. The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness areas, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and, where appropriate, any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

Administration.

Sec. 7. (a) Section 6(a) of the Act of September 13, 1962 (76 Stat. 538), as amended (16 U.S.C. 459c-6a) is amended by inserting "without impairment of its natural values, in a manner which provides for such recreational, educational, historic preservation, interpretation, and scientific research opportunities as are consistent with, based upon, and supportive of the maximum protection, restoration and preservation of the natural environment with the area" immediately after "shall be administered by the Secretary".

16 USC 459c-6.

(b) Add the following new section 7 and redesignate the existing section 7 as section 8:

16 USC 459c-7.

"Sec. 7. The Secretary shall designate the principal environmental education center within the Seashore as 'The Clem Miller Environmental Education Center,' in commemoration of the vision and leadership which the late Representative Clem Miller gave to the creation and protection of Point Reyes National Seashore."

The Clem Miller
Environmental
Education
Center,
designation.
16 USC 459c-6a.

Sec. 8. Notwithstanding any other provision of law, any designation of the lands in the Shoshone National Forest, Wyoming, known as the Whiskey Mountain Area, comprising approximately six thousand four hundred and ninety-seven acres and depicted as the "Whiskey Mountain Area—Glacier Primitive Area" on a map entitled "Proposed Glacier Wilderness and Glacier Primitive Area", dated September 23, 1976, on file in the Office of the Chief, Forest Service, Department of Agriculture, shall be classified as a primitive area until the Secretary of Agriculture or his designee determines otherwise pursuant to classification procedures for national forest primitive areas. Provisions of any other Act designating the Fitzpatrick Wil-

Whiskey
Mountain Area,
classification as a
primitive area.

90 STAT. 2696

PUBLIC LAW 94-567—OCT. 20, 1976

derness in said Forest shall continue to be effective only for the approximately one hundred and ninety-one thousand one hundred and three acres depicted as the "Proposed Glacier Wilderness" on said map.

Approved October 20, 1976.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 94-1427 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 94-1357 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD, Vol. 122 (1976):

Sept. 22, considered and passed House.

Oct. 1, considered and passed Senate, amended; House agreed to Senate amendments.

106TH CONGRESS
1ST SESSION

H. R. 1165

To redesignate the Black Canyon of the Gunnison National Monument as a national park and establish the Gunnison Gorge National Conservation Area, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 17, 1999

Mr. MCINNIS (for himself, Mr. SCHLAPFER, and Mr. TANCREDI) introduced the following bill; which was referred to the Committee on Resources

A BILL

To redesignate the Black Canyon of the Gunnison National Monument as a national park and establish the Gunnison Gorge National Conservation Area, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Black Canyon National
5 Park and Gunnison Gorge National Conservation Area
6 Act of 1999”.

7 **SEC. 2. FINDINGS.**

8 Congress finds that—

1 (1) Black Canyon of the Gunnison National
2 Monument was established for the preservation of its
3 spectacular gorges and additional features of scenic,
4 scientific, and educational interest;

5 (2) the Black Canyon and adjacent upland in-
6 clude a variety of unique ecological, geological, scen-
7 ic, historical, and wildlife components enhanced by
8 the serenity and rural western setting of the area;

9 (3) the Black Canyon and adjacent land provide
10 extensive opportunities for educational and rec-
11 reational activities, and are publicly used for hiking,
12 camping, and fishing, and for wilderness value, in-
13 cluding solitude;

14 (4) adjacent public land downstream of the
15 Black Canyon of the Gunnison National Monument
16 has wilderness value and offers unique geological,
17 paleontological, scientific, educational, and rec-
18 reational resources;

19 (5) public land adjacent to the Black Canyon of
20 the Gunnison National Monument contributes to the
21 protection of the wildlife, viewshed, and scenic quali-
22 ties of the Black Canyon;

23 (6) some private land adjacent to the Black
24 Canyon of the Gunnison National Monument has ex-

1 exceptional natural and scenic value, that, would be
2 threatened by future development pressures;

3 (7) the benefits of designating public and pri-
4 vate land surrounding the national monument as a
5 national park include greater long-term protection of
6 the resources and expanded visitor use opportunities;
7 and

8 (8) land in and adjacent to the Black Canyon
9 of the Gunnison Gorge is—

10 (A) recognized for offering exceptional
11 multiple use opportunities;

12 (B) recognized for offering natural, cul-
13 tural, scenic, wilderness, and recreational re-
14 sources; and

15 (C) worthy of additional protection as a
16 national conservation area, and with respect to
17 the Gunnison Gorge itself, as a component of
18 the national wilderness system.

19 **SEC. 3. DEFINITIONS.**

20 In this Act:

21 (1) CONSERVATION AREA.—The term “Con-
22 servation Area” means the Gunnison Gorge National
23 Conservation Area, consisting of approximately
24 57,725 acres surrounding the Gunnison Gorge as
25 depicted on the Map.

1 (2) MAP.—The term “Map” means the map en-
2 titled “Black Canyon National Park and Gunnison
3 Gorge NCA—1/22/99”.

4 (3) PARK.—The term “Park” means the Black
5 Canyon National Park established under section 4
6 and depicted on the Map.

7 (4) SECRETARY.—The term “Secretary” means
8 the Secretary of the Interior.

9 **SEC. 4. ESTABLISHMENT OF BLACK CANYON NATIONAL**
10 **PARK.**

11 (a) ESTABLISHMENT.—

12 (1) IN GENERAL.—There is established the
13 Black Canyon National Park in the State of Colo-
14 rado, as generally depicted on the Map.

15 (2) AVAILABILITY OF MAP.—The Map shall be
16 on file and available for public inspection in the of-
17 fices of the National Park Service of the Depart-
18 ment of the Interior.

19 (3) REDESIGNATION OF MONUMENT.—

20 (A) TERMINATION OF BLACK CANYON DES-
21 IGNATION.—The designation of the Black Can-
22 yon of the Gunnison National Monument in ex-
23 istence on the date of enactment of this Act is
24 terminated.

1 (B) TRANSFER.—All land and interests
2 within the boundary of the Black Canyon of the
3 Gunnison National Monument are incorporated
4 in and made part of the Black Canyon National
5 Park, including—

6 (i) land and interests within the
7 boundary of the Black Canyon of the Gun-
8 nison National Monument as established
9 by section 2(a) of the first section of Pub-
10 lic Law 98-357; and

11 (ii) any land and interests identified
12 on the Map and transferred by the Bureau
13 of Land Management under this Act.

14 (C) REFERENCE TO PARK.—Any reference
15 to the Black Canyon of the Gunnison National
16 Monument shall be deemed a reference to Black
17 Canyon National Park.

18 (D) FUNDS.—Any funds made available
19 for the purposes of the Black Canyon of the
20 Gunnison National Monument shall be available
21 for purposes of the Park.

22 (b) AUTHORITY.—The Secretary, acting through the
23 Director of the National Park Service, shall manage the
24 Park subject to valid rights, in accordance with this Act

1 and the provisions of law applicable to units of the Na-
2 tional Park System, including—

3 (1) the Act entitled “An Act to establish a Na-
4 tional Park Service, and for other purposes”, ap-
5 proved August 25, 1916 (16 U.S.C. 1 et seq.);

6 (2) the Act entitled “An Act to provide for the
7 preservation of historic American sites, buildings,
8 objects, and antiquities of national significance, and
9 for other purposes”, approved August 21, 1935 (16
10 U.S.C. 461 et seq.); and

11 (3) other applicable provisions of law.

12 (e) GRAZING.—

13 (1) GRAZING PERMITTED.—The Secretary may
14 permit grazing within the Park, if the use of the
15 Park for grazing is permitted on the date of enact-
16 ment of this Act.

17 (2) GRAZING PLAN.—The Secretary shall pre-
18 pare a grazing management plan to administer any
19 grazing activities within the Park.

20 **SEC. 5. ACQUISITION OF PROPERTY AND MINOR BOUND-**
21 **ARY ADJUSTMENTS.**

22 (a) ADDITIONAL ACQUISITIONS.—

23 (1) IN GENERAL.—The Secretary may acquire
24 land or interests in land depicted on the Map as pro-
25 posed additions.

1 (2) METHOD OF ACQUISITION.—

2 (A) IN GENERAL.—Land or interests in
3 land may be acquired by—

4 (i) donation;

5 (ii) transfer;

6 (iii) purchase with donated or appro-
7 priated funds; or

8 (iv) exchange.

9 (B) CONSENT.—No land or interest in
10 land may be acquired without the consent of
11 the owner of the land.

12 (b) BOUNDARY REVISION.—After acquiring land for
13 the Park, the Secretary shall—

14 (1) revise the boundary of the Park to include
15 newly-acquired land within the boundary; and

16 (2) administer newly-acquired land subject to
17 applicable laws (including regulations).

18 (c) BOUNDARY SURVEY.—Not later than 5 years
19 after the date of enactment of this Act, the Secretary shall
20 complete an official boundary survey of the Park.

21 (d) HUNTING ON PRIVATELY OWNED LANDS.—

22 (1) IN GENERAL.—The Secretary may permit
23 hunting on privately owned land added to the Park
24 under this Act, subject to limitations, conditions, or
25 regulations that may be prescribed by the Secretary.

1 (2) **TERMINATION OF AUTHORITY.**—On the
2 date that the Secretary acquires fee ownership of
3 any privately owned land added to the Park under
4 this Act, the authority under paragraph (1) shall
5 terminate with respect to the privately owned land
6 acquired.

7 **SEC. 6. EXPANSION OF THE BLACK CANYON OF THE GUNNISON**
8 **WILDERNESS.**

9 (a) **EXPANSION OF BLACK CANYON.**—The Black
10 Canyon of the Gunnison Wilderness, as established by
11 subsection (b) of the first section of Public Law 94-567
12 (90 Stat. 2692), is expanded to include the parcel of land
13 depicted on the Map as "Tract A" and consisting of ap-
14 proximately 4,460 acres.

15 (b) **ADMINISTRATION.**—The Black Canyon of the
16 Gunnison Wilderness shall be administered as a compo-
17 nent of the Park.

18 **SEC. 7. ESTABLISHMENT OF THE GUNNISON GORGE NA-**
19 **TIONAL CONSERVATION AREA.**

20 (a) **IN GENERAL.**—There is established the Gunnison
21 Gorge National Conservation Area, consisting of approxi-
22 mately 57,725 acres as generally depicted on the Map.

23 (b) **MANAGEMENT OF CONSERVATION AREA.**—The
24 Secretary, acting through the Director of the Bureau of
25 Land Management, shall manage the Conservation Area

1 to protect the resources of the Conservation Area in ac-
2 cordance with—

3 (1) this Act;

4 (2) the Federal Land Policy and Management
5 Act of 1976 (43 U.S.C. 1701 et seq.); and

6 (3) other applicable provisions of law.

7 (e) WITHDRAWAL OF LAND.—Subject to valid rights
8 in existence on the date of enactment of this Act, all Fed-
9 eral land and interests within the Conservation Area ac-
10 quired by the United States are withdrawn from—

11 (1) all forms of entry, appropriation, or disposal
12 under the public land laws;

13 (2) location, entry, and patent under the mining
14 laws; and

15 (3) operation of the mineral leasing and geo-
16 thermal leasing laws.

17 (d) PERMITTED USES.—

18 (1) IN GENERAL.—The Secretary shall permit
19 hunting, trapping, and fishing within the Conserva-
20 tion Area in accordance with applicable laws (includ-
21 ing regulations) of the United States and the State
22 of Colorado.

23 (2) EXCEPTION.—The Secretary, after con-
24 sultation with the Colorado Division of Wildlife, may
25 issue regulations designating zones where and estab-

1 fishing periods when no hunting or trapping shall be
2 permitted for reasons concerning—

3 (A) public safety;

4 (B) administration; or

5 (C) public use and enjoyment.

6 (e) USE OF MOTORIZED VEHICLES.—In addition to
7 the use of motorized vehicles on established roadways, the
8 use of motorized vehicles in the Conservation Area shall
9 be allowed—

10 (1) to the extent the use is compatible with off-
11 highway vehicle designations as described in the
12 management plan in effect on the date of enactment
13 of this Act; or

14 (2) to the extent the use is practicable under a
15 management plan prepared under this Act.

16 (f) CONSERVATION AREA MANAGEMENT PLAN.—

17 (1) IN GENERAL.—Not later than 4 years after
18 the date of enactment of this Act, the Secretary
19 shall—

20 (A) develop a comprehensive plan for the
21 long-range protection and management of the
22 Conservation Area; and

23 (B) transmit the plan to—

24 (i) the Committee on Energy and
25 Natural Resources of the Senate; and

1 (ii) the Committee on Resources of
2 the House of Representatives.

3 (2) CONTENTS OF PLAN.—The plan—

4 (A) shall describe the appropriate uses and
5 management of the Conservation Area in ac-
6 cordance with this Act;

7 (B) may incorporate appropriate decisions
8 contained in any management or activity plan
9 for the area completed prior to the date of en-
10 actment of this Act;

11 (C) may incorporate appropriate wildlife
12 habitat management plans or other plans pre-
13 pared for the land within or adjacent to the
14 Conservation Area prior to the date of enact-
15 ment of this Act;

16 (D) shall be prepared in close consultation
17 with appropriate Federal, State, county, and
18 local agencies; and

19 (E) shall use information developed prior
20 to the date of enactment of this Act in studies
21 of the land within or adjacent to the Conserva-
22 tion Area.

23 (g) BOUNDARY REVISIONS.—The Secretary may
24 make revisions to the boundary of the Conservation Area

1 following acquisition of land necessary to accomplish the
2 purposes for which the Conservation Area was designated.

3 **SEC. 8. DESIGNATION OF WILDERNESS WITHIN THE CON-**
4 **SERVATION AREA.**

5 (a) GUNNISON GORGE WILDERNESS.—

6 (1) IN GENERAL.—Within the Conservation
7 Area, there is designated as wilderness, and as a
8 component of the National Wilderness Preservation
9 System, the Gunnison Gorge Wilderness, consisting
10 of approximately 17,700 acres, as generally depicted
11 on the Map.

12 (2) ADMINISTRATION.—

13 (A) WILDERNESS STUDY AREA EXEMPTION.—The approximately 300-acre portion of
14 the wilderness study area depicted on the Map
15 for release from section 603 of the Federal
16 Land Policy and Management Act of 1976 (43
17 U.S.C. 1782) shall not be subject to section
18 603(c) of that Act.

19
20 (B) INCORPORATION INTO NATIONAL CON-
21 SERVATION AREA.—The portion of the wilder-
22 ness study area described in subparagraph (A)
23 shall be incorporated into the Conservation
24 Area.

1 (b) ADMINISTRATION.—Subject to valid rights in ex-
2 istence on the date of enactment of this Act, the wilder-
3 ness areas designated under this Act shall be administered
4 by the Secretary in accordance with the Wilderness Act
5 (16 U.S.C. 1131 et seq.).

6 (c) STATE RESPONSIBILITY.—As provided in section
7 4(d)(7) of the Wilderness Act (16 U.S.C. 1133(d)(7)),
8 nothing in this Act or in the Wilderness Act shall affect
9 the jurisdiction or responsibilities of the State of Colorado
10 with respect to wildlife and fish on the public land located
11 in that State.

12 **SEC. 9. WITHDRAWAL.**

13 The land identified as tract B on the Map, consisting
14 of approximately 1,554 acres, is withdrawn—

15 (1) from all forms of entry, appropriation, or
16 disposal under the public land laws;

17 (2) from location, entry, and patent under the
18 mining laws; and

19 (3) from operation of the mineral leasing and
20 geothermal leasing laws.

21 **SEC. 10. WATER RIGHTS.**

22 (a) EFFECT ON WATER RIGHTS.—Nothing in this
23 Act shall—

24 (1) constitute an express or implied reservation
25 of water for any purpose; or

1 (2) affect any water rights in existence prior to
2 the date of enactment of this Act, including any
3 water rights held by the United States.

4 (b) **ADDITIONAL WATER RIGHTS.**—Any new water
5 right that the Secretary determines is necessary for the
6 purposes of this Act shall be established in accordance
7 with the procedural and substantive requirements of the
8 laws of the State of Colorado.

9 **SEC. 11. STUDY OF LANDS WITHIN AND ADJACENT TO**
10 **CURECANTI NATIONAL RECREATION AREA.**

11 (a) **IN GENERAL.**—Not later than 2 years after the
12 date of enactment of this Act, the Secretary, acting
13 through the Director of the National Park Service, shall
14 conduct a study concerning land protection and open space
15 within and adjacent to the area administered as the
16 Curecanti National Recreation Area.

17 (b) **PURPOSE OF STUDY.**—The study required to be
18 completed under subsection (a) shall—

19 (1) assess the natural, cultural, recreational
20 and scenic resource value and character of the land
21 within and surrounding the Curecanti National
22 Recreation Area (including open vistas, wildlife habi-
23 tat, and other public benefits);

24 (2) identify practicable alternatives that protect
25 the resource value and character of the land within

1 and surrounding the Curecanti National Recreation
2 Area;

3 (3) recommend a variety of economically fea-
4 sible and viable tools to achieve the purposes de-
5 scribed in paragraphs (1) and (2); and

6 (4) estimate the costs of implementing the ap-
7 proaches recommended by the study.

8 (e) SUBMISSION OF REPORT.—Not later than 3 years
9 from the date of enactment of this Act, the Secretary shall
10 submit a report to Congress that—

11 (1) contains the findings of the study required
12 by subsection (a);

13 (2) makes recommendations to Congress with
14 respect to the findings of the study required by sub-
15 section (a); and

16 (3) makes recommendations to Congress re-
17 garding action that may be taken with respect to the
18 land described in the report.

19 (d) ACQUISITION OF ADDITIONAL LAND AND INTER-
20 ESTS IN LAND.—

21 (1) IN GENERAL.—Prior to the completion of
22 the study required by subsection (a), the Secretary
23 may acquire certain private land or interests in land
24 as depicted on the Map entitled “Proposed Additions
25 to the Curecanti National Recreation Area,” dated

1 09/15/98, totaling approximately 1,065 acres and
2 entitled "Hall and Fitti properties".

3 (2) METHOD OF ACQUISITION.—

4 (A) IN GENERAL.—Land or an interest in
5 land under paragraph (1) may be acquired by—

6 (i) donation;

7 (ii) purchase with donated or appro-
8 priated funds; or

9 (iii) exchange.

10 (B) CONSENT.—No land or interest in
11 land may be acquired without the consent of
12 the owner of the land.

13 (C) BOUNDARY REVISIONS FOLLOWING AC-
14 QUISTION.—Following the acquisition of land
15 under paragraph (1), the Secretary shall—

16 (i) revise the boundary of the
17 Curecanti National Recreation Area to in-
18 clude newly-acquired land; and

19 (ii) administer newly-acquired land ac-
20 cording to applicable laws (including regu-
21 lations).

22 **SEC. 12. AUTHORIZATION OF APPROPRIATIONS.**

23 There are authorized to be appropriated such sums
24 as are necessary to carry out this Act.

□

APPENDIX B: WILDERNESS ELIGIBILITY ASSESSMENT

WILDERNESS ELIGIBILITY ASSESSMENT
BLACK CANYON OF THE GUNNISON NATIONAL PARK
CURECANTI NATIONAL RECREATION AREA

INTRODUCTION

As a matter of NPS Policy, “all lands administered by the National Park Service, including new units or additions to existing units since 1964, will be evaluated for their eligibility for inclusion in the national wilderness preservation system. Additionally, lands that were originally assessed as ineligible for wilderness because of nonconforming or incompatible uses must be reevaluated if the nonconforming uses have been terminated or removed” (NPS *Management Policies 2006*, section 6.2.1). The purpose of wilderness designation, which is accomplished solely by congressional action, is to preserve and protect wilderness characteristics and values over the long term, while providing opportunities for solitude or primitive and unconfined recreation. With passage of the 1964 Wilderness Act (16 USC 1131 *et seq.*), Congress declared that it is national policy to secure for present and future generations the benefits of enduring wilderness resources.

Black Canyon of the Gunnison National Monument was established by Presidential Proclamation (2033) on March 2, 1933. Additional proclamations and laws over the years have served to amend the boundary and authorize acquisition and disposal of lands. The law of 1984 (Public Law 98-357) added grazing as a permitted use on private land where the National Park Service acquires a less-than-fee interest and the landowner requests continuation of grazing. Congress recognized the wild and undeveloped qualities of BLCA in 1976, enacting Public Law 94-567, which designated 11,180 acres of Black Canyon of the Gunnison National Monument as wilderness, pursuant to the Wilderness Act of 1964. Congress subsequently designated the monument to national park status through enactment of Public Law 106-76 in October 1999. Public Law 106-76 expanded BLCA boundaries, including an addition of 4,419 acres of wilderness. The 1999 law also authorized grazing on BLM lands transferred to the park through the lifetime of the then grazing permittees. Today, Black Canyon includes 30,750 acres, of which 15,599 acres (50%) are designated wilderness. This assessment evaluates undeveloped, nonwilderness federal land to determine its eligibility for wilderness designation.

Curecanti National Recreation Area is co-managed by the National Park Service through a 1965 memorandum of agreement between the U.S. Bureau of Reclamation (BOR) and the National Park Service, and pursuant to BOR law, including the Colorado River Storage Project Act of 1956. The Bureau of Reclamation manages two reclamation projects (including dams, reservoirs, power plants, access roads, and other related facilities); while the National Park Service manages the natural and cultural resources, opportunities for visitor recreation and understanding, and associated facilities. Curecanti National Recreation Area has never been legislatively established, and there is no legislated boundary for a NPS unit to warrant wilderness eligibility assessment at this time. In August 2008, a resource protection study was approved pursuant to Public Law 106-76, which specified a land protection and open space study to assess the natural, cultural, recreational, and scenic resource value and character of the land within and surrounding Curecanti NRA. Legislation has been introduced into Congress to establish a boundary for

Curecanti National Recreation Area to be administered by the National Park Service, and would transfer Bureau of Land Management and U.S. Forest Service lands within that boundary to the National Park Service.

WILDERNESS ELIGIBILITY ASSESSMENT PROCESS

Wilderness eligibility assessment is the first step in a process that may result in wilderness designation. In the National Park Service, the eligibility step is a factual determination by an interdisciplinary team and the superintendent as to whether or not land meets the basic criteria for wilderness, based on the intent of the Wilderness Act. The primary eligibility criteria from NPS *Management Policies 2006* are as follows:

NPS lands will be considered eligible for wilderness if they are at least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics (as identified in the Wilderness Act):

- The earth and its community of life are untrammelled by humans; where humans are visitors and do not remain.
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

There are additional considerations that should be taken into account in determining eligibility:

- A wilderness area may contain significant ecological, geological, or other features of scientific, educational, scenic, or historical value, although it does not need these things to be considered eligible for wilderness designation.
- Lands that have been logged, farmed, grazed, mined, or otherwise used in ways not involving extensive development or alteration of the landscape may also be considered eligible for wilderness designation if, at the time of assessment, the effects of these activities are substantially unnoticeable or their wilderness character could be maintained or restored through appropriate management actions.
- An area will not be excluded from a determination of wilderness eligibility solely because established or proposed management practices require the use of tools, equipment, or structures if those practices are necessary to meet minimum requirements for the administration of the area as wilderness.
- In the process of determining wilderness eligibility, lands will not be excluded solely because of existing rights or privileges (e.g., mineral exploration and development, commercial operations, agricultural development, grazing, or stock driveways). If the National Park Service determines that these lands possess wilderness character, they

may be included in the eligibility determination so that they can be considered for designation as wilderness or potential wilderness.

- Lands containing aboveground or buried utility lines will normally not be considered as eligible for wilderness designation, but they can be considered as eligible for “potential” wilderness designation if there is a long-term intent to remove the lines. No new utility lines may be installed in wilderness, and existing utility lines may not be extended or enlarged except as may be allowed pursuant to section 1106 of the Alaska National Interest Lands Conservation Act (16 USC 1133[c]).
- Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation. However, an area that attracts visitors primarily for the enjoyment of solitude and unconfined recreation in a primitive setting may also contain cultural resource features and still be included in wilderness. Historic trails may serve and be maintained as part of the wilderness trail system, as identified and coordinated within an approved wilderness management plan and the park’s cultural resource plan. The presence of historic structures does not make an area ineligible for wilderness. A recommendation may be made to include a historic structure in wilderness if, (1) the structure would be only a minor feature of the total wilderness proposal; and (2) the structure will remain in its historic state, without development.
- Dams within or affecting the area being studied do not make a waterway ineligible for wilderness designation. The nature and extent of impacts and the extent to which the impacts can be mitigated would need to be addressed in subsequent wilderness studies.
- The established use of motorboats, snowmobiles, or aircraft does not make an area ineligible for wilderness. The nature and extent of any impacts on the environment and on eligibility, and the extent to which the impacts can be mitigated would need to be addressed in subsequent wilderness studies, along with the possible need to discontinue the use.
- Overflights do not make an area ineligible for wilderness designation. The nature and extent of any overflight impacts and the extent to which the impacts can be mitigated would need to be addressed in subsequent wilderness studies.

The NPS wilderness eligibility assessment process includes notification of the public, which is why this information is included in this public draft plan. The findings will be sent to the director of the National Park Service, and published in the *Federal Register*. This is only the first step in a very long process. Lands determined to be eligible will be formally studied to develop a recommendation to Congress for wilderness designation. A full wilderness study will be supported by the appropriate documentation of compliance with the National Environmental Policy Act and the National Historic Preservation Act. The Council on Environmental Quality requires environmental impact statements for wilderness studies that will result in recommendations for designation. A recommendation is sent from the Secretary of the Interior to the president. The president then transmits his/her recommendations with respect to wilderness designation to both houses of Congress. Congress can choose to act (or not) on the recommendation, or at an earlier point in the process if they choose. Only Congress can designate wilderness.

WILDERNESS ELIGIBILITY AT BLACK CANYON NATIONAL PARK

All of the inner canyon of Black Canyon of the Gunnison National Park and a portion of the uplands are within designated wilderness. This eligibility assessment addresses the remaining uplands much of which was added to the park since the original proclamation. The law of 1984 (Public Law 98-357) added grazing as a permitted use on private land where the National Park Service acquires a less-than fee interest and the landowner requests continuation of grazing. The law of 1999 (Public Law 106-76) designated Black Canyon of the Gunnison as a national park, and furthermore authorized grazing on BLM lands transferred to the park through the lifetime of the then grazing permittees.

On both north and south rims, the National Park Service has acquired less than fee interest in private land that is now included within the park boundary. This interest, commonly known as scenic or conservation easements, restricts the use of the land whereas activities and development must not degrade or impair the conservation values (such as biodiversity, wildlife habitat, open space, and scenic values) that are defined by the deed of easement. Congress has authorized the continuation of livestock grazing on such land. Other agricultural related activities (such as roads, water systems, hay storage, etc) is also authorized. Each deed of easement has specific details regarding prohibited and permitted uses (e.g., some easements allow hunting, while some do not).

The accompanying map, “Black Canyon Wilderness Eligibility Assessment,” illustrates the land found eligible for wilderness study.

South Rim

Several small tracts under 5,000 acres were identified as eligible. Although small, they are contiguous to designated wilderness and bring the boundary to property lines or roads that will clarify the management of wilderness as a whole. They are characterized by woodlands, open stands of Gambel oak, and sage brush that provide habitat for a variety of species. These tracts have no permanent roads or utilities, and no current grazing. They meet the criteria for inclusion in wilderness.

Private lands (less-than-fee conservation easements) were not deemed eligible for wilderness study. While private ownership does not necessarily exclude their eligibility, in this case the NPS has acquired less-than-fee interest to fulfill park purposes, and full acquisition is not anticipated. Some of the NPS lands on the south rim not considered eligible hold the park development (roads, overlooks, visitor center, campground, etc.). Also excluded on the South Rim is a right by landowner(s) to access and maintain irrigation ditches that move water from private land, across park land, and back to private land.

The Bureau of Reclamation has withdrawn lands both north and south of East Portal Road that are included within the national park boundary. For such lands, the National Park Service shares administrative jurisdiction with the Bureau of Reclamation. These lands are subject to use by Reclamation for project purposes. As such, these lands are not appropriate for wilderness designation. Several other small, isolated parcels not contiguous with other wilderness areas were excluded.

North Rim

Two relatively large tracts on either side of the North Rim access road are found to be eligible, along with two smaller sections near the eastern boundary. They are characterized by woodlands, open stands of Gambel oak, and sagebrush that provide habitat for a variety of species. There are former ranch roads, stock ponds, and fences, but these are not extensive enough to disqualify them and can be removed and the land restored over time. These tracts have no permanent roads or utilities. On the tract identified on the map as “potential/eligible for study, there is a term lease for ongoing grazing. The grazing itself does not disqualify the tract, but a current agreement allows motorized and mechanized activities that do not conform to wilderness. When the agreement expires, this tract would move from the category “potential” to “eligible,” as the nonconforming uses would be terminated. There is no longer grazing on the other land identified as eligible.

As along the south rim, private lands were left out of the eligible category. While private ownership does not necessarily exclude their eligibility, in this case the National Park Service has acquired conservation easements to fulfill park purposes, and full acquisition is not anticipated. Other NPS lands on the north rim, not considered eligible, hold the park development (roads, overlooks, ranger station, etc.). A block of NPS land on the northeast corner of the park was excluded from wilderness eligibility for several reasons, including permanent roads, a BLM waterline crossing the park that pre-dates legislation and has valid existing rights, and a road easement that predates NPS ownership and provides access for landowners beyond the boundary.

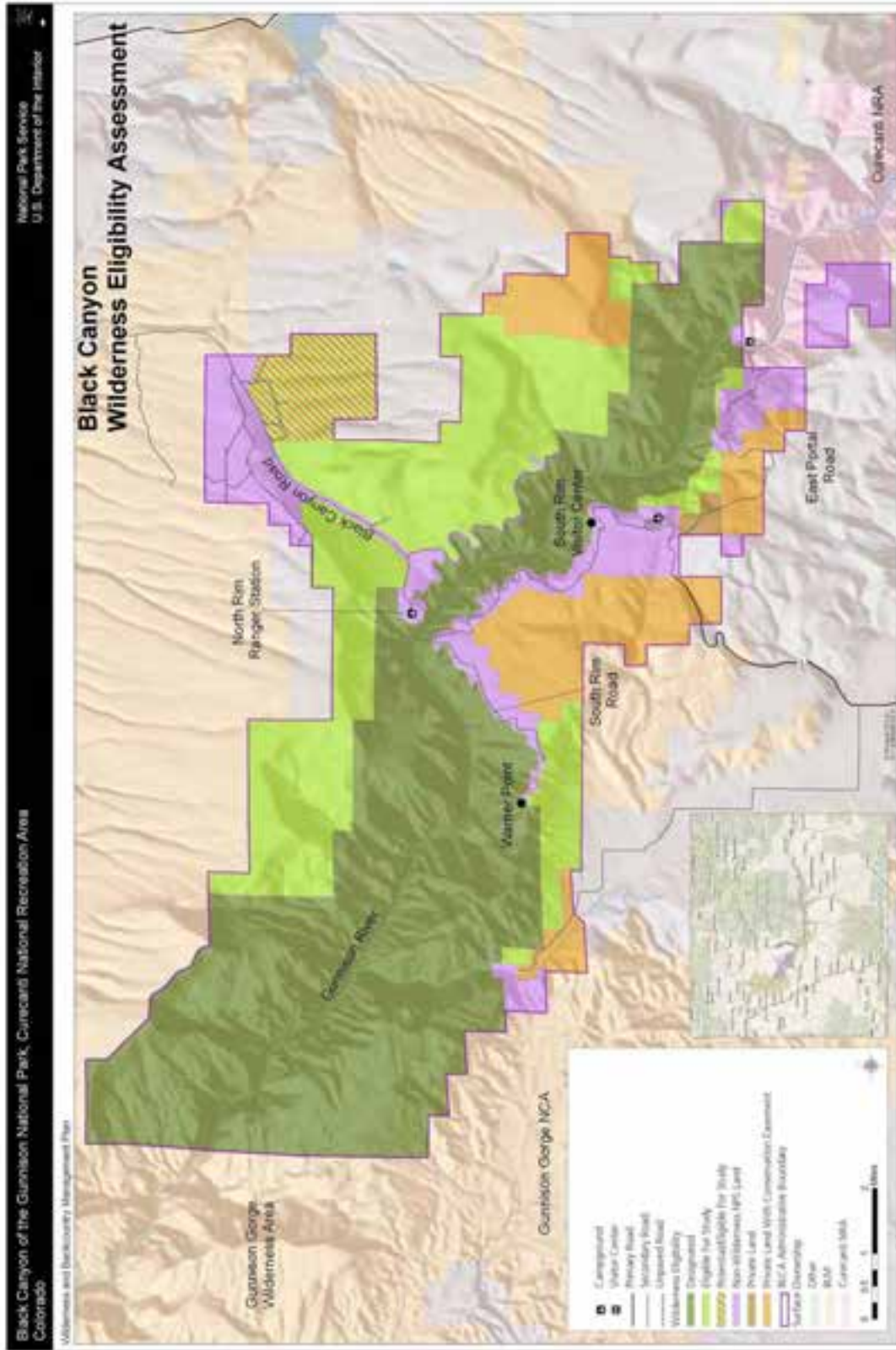
FINDINGS

This assessment finds an additional 8,447 acres eligible or potentially eligible for full wilderness study and possible inclusion in the National Wilderness Preservation System.

Black Canyon of the Gunnison NP: Designated and Eligible Wilderness

Status	Acres
Designated Wilderness	15,599
Eligible for Study	7,448
Potential/Eligible for Study	999
Nonwilderness	6,704
TOTAL	30,750

The National Park Service will take no action that would diminish the wilderness eligibility of an area possessing wilderness characteristics until the legislative process of wilderness designation has been completed. Until that time, management decisions would be made in expectation of eventual wilderness designation.



Black Canyon Wilderness Eligibility Assessment Map

APPENDIX C: CLIMBING MANAGEMENT PLAN

Climbing Management Plan

Black Canyon of the Gunnison National Park Curecanti National Recreation Area

Climbing Ethics

The Black Canyon has long been established as a traditional area where bolts are kept to a minimum, if used at all. The Black is one of the last refuges for a wilderness experience. Before you drill, think twice and make sure it is absolutely necessary. Just because a route cannot be done today without bolts doesn't mean that someone won't be able to do it tomorrow. Clean climbing is often possible; try spending just a little more time to find a secure placement that will not permanently scar the rock. Everyone venturing into the canyon should give their best effort to climb routes as cleanly and quietly as possible.

—Black Canyon Rock Climbs by Robbie Williams

Goals of Climbing Management Plan

1. Preserve the natural resources found in the Black Canyon of the Gunnison National Park (Black Canyon NP), and Curecanti National Recreation Area (Curecanti NRA) while providing for recreational climbing activities.
2. Set forth a clearly defined set of guidelines for climbing that will allow for preservation of backcountry and wilderness character.
3. Supply a set of written regulations that park employees can use in the education of climbers visiting Black Canyon NP and Curecanti NRA.
4. Supply Law Enforcement Rangers with written guidelines to conserve the wilderness and backcountry character and climbing environment in Black Canyon NP and Curecanti NRA.

Topics Covered in Climbing Management Plan

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2. Fixed Anchors 198
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 - (2) Fixed Access Rappel Station 199
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 - (3) Black Canyon of the Gunnison National Park (Primitive Zone) 199
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 - C. Authorization for new fixed access rappel stations varies by park unit and zones 202
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1. Wilderness Use Permit

- Climbing areas within BLCA NP are located within designated wilderness. Wilderness Use Permits are required by all visitors traveling into the inner canyon of Black Canyon NP, including; day use, overnight use, fishing, and climbing.
- Climbing areas within Curecanti NRA are within the backcountry, but not within wilderness and a Wilderness Use Permit is not required.

2. Fixed Anchors

- The occasional placement of a fixed anchor for belay, rappel or protection purposes does not necessarily impair the future enjoyment of backcountry or wilderness, nor violate the Wilderness Act provided its placement is in accordance with the National Park Service Director's Order 41. However, climbing practices with the least adverse impact on backcountry and wilderness character will always be the preferred choice.
- The use of motorized equipment (e.g., power drills) is prohibited under the Wilderness Act (applies to wilderness in Back Canyon NP) and (36 CFR 2.12[3]) (applies to both Black Canyon NP and Curecanti NRA).
- "Clean climbing" techniques should be the norm in backcountry and wilderness. This 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).
- Fixed anchors or fixed equipment may be appropriate, but should be rare in backcountry and wilderness.

Definitions:

- (1) **Fixed Protection Anchor** – For the scope of this document, a fixed protection anchor shall be deemed a single placement of hardware that is used as protection on

an otherwise unprotectable section of climbing route, and is left on the route by a climbing party after the completion of the climb.

- (2) **Fixed Access Rappel Station** – For the scope of this document, a fixed access rappel station shall be deemed any configuration of multiple pieces of hardware placed in an area where access to the rappel station is reached by nontechnical means and is for the sole intent of rappelling to gain access to the base of climbs.

A. Authorization for new fixed protection anchor placement varies by park unit and zones:

(1) Black Canyon of the Gunnison National Park (Primitive Zone)

- a) Within federally designated wilderness in the national park system all new fixed protection anchors placements require authorization.
- b) Within the Black Canyon NP Wilderness (Primitive Zone), the placements of new fixed protection anchors is authorized without a written application process or prior approval as long as they meet all of the conditions in this Black Canyon NP Primitive Zone section of the climbing management plan.
- c) The placement of multiple new fixed anchors to be used primarily to aid in the ascent of an otherwise unclimbable section of rock (bolt ladders) is prohibited within Black Canyon NP Primitive Zone.
- d) New fixed protection anchors are only authorized in the development of new climbing routes and only in sections of the route that have no rock features adequate for the placement of removable protection anchors.
- e) The current new fixed protection anchor authorization decision for the Black Canyon NP Primitive Zone has been reached after considering the following data:
 - Current wilderness character impacts due to climbing activity observed at Black Canyon NP
 - Historic climbing activity
 - Current climbing activity
 - New fixed protection anchor placement data over the last five years
 - Current climbing route concentrations
 - Opportunity for new routes within the primitive zone
- f) The new fixed protection anchor authorization for the BLCA primitive zone is dependent on the following:
 - Continued monitoring and annual new fixed protection anchor counts which will be conducted by park climbing staff.
 - Remaining within an indicating standard of 15 new fixed protection anchors annually. The indicating standard has been identified using first ascent data, historic and current fixed anchor installation data, and current observed impacts to wilderness character.
 - All new fixed protection placements meeting the fixed anchor requirements set forth in this Climbing Management Plan (CMP).
 - Climbers noting the number and location of all new fixed protection placements in either a climbing topo or written route description when making a first ascent. A copy of this topo and/or route description will be supplied to the National Park Service (addressed to the Lead Climbing

Ranger or given in person to the park staff at the North Rim ranger station) within 30 days of the completion of a new route by first ascensionist.

- g) Modification to the new fixed protection anchor authorization for the Black Canyon NP Primitive Zone may be made using the following criteria:
 - If identifiable impacts to wilderness character (created by new fixed anchor installations) are observed.
 - If the annual new fixed anchor count exceeds the indicating standard (15).
 - After a public notice is provided to climbers at park visitor centers, posted on park online resources, and sent to local climbing organizations. This notice shall include identified impact, intent to modify the fixed anchor authorization, and process for public involvement in the fixed anchor authorization process.
- h) Modifications to the new fixed anchor placement authorization will be approved by the park superintendent after considering the recommendations of an interdisciplinary committee that, at a minimum, will include a representative from the park climbing staff, wilderness staff, visitor protection division, resource division.
- i) Within the Black Canyon NRA Primitive Zone, the replacement (anchor for anchor) of existing fixed protection anchors deemed to be unsafe does not require authorization.
- j) Within the Black Canyon NRA Primitive Zone, the removal of existing fixed protection anchors no longer known to be in use does not require authorization.

(2) Black Canyon of the Gunnison National Park (Pristine Zone)

A wilderness is recognized as an area where man himself is a visitor who does not remain. An area of wilderness is an area of undeveloped land retaining its primeval character and influence, which is protected and managed so as to preserve its natural conditions and generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable, which has outstanding opportunities for solitude or a primitive and unconfined type of recreation.

At present, park staff are unaware of any documented climbing routes located within the BLCA Pristine Zone.

No record of any wilderness use permit having been issued for the purpose of climbing within the pristine zone is known to exist.

- In an effort to maintain the exceptional wilderness character found within the pristine zone, new fixed protection anchors are prohibited.

(3) Curecanti National Recreation Area

- a) All new fixed protection anchor placements require authorization prior to placement. Within Curecanti NRA, the placements of new fixed protection anchors is authorized without a written application process or prior approval as long as they meet all of the conditions in this Curecanti NRA section of the climbing management plan.
- b) The placement of multiple new fixed anchors to be used primarily to aid in the ascent of an otherwise unclimbable section of rock (bolt ladders) are prohibited within Curecanti NRA.
- c) New fixed protection anchors will only be considered authorized in the development of new climbing routes and only in sections of the route that have no rock features adequate for the placement of removable protection anchors.

- d) The current new fixed protection anchor authorization decision for Curecanti NRA has been reached after considering the following data:
 - Known current backcountry resources impacts due to climbing activity observed at Curecanti NRA.
 - Known historic climbing activity.
 - Known current climbing activity.
 - Opportunity for new routes within Curecanti NRA.

- e) The new fixed protection anchor authorization for Curecanti NRA is dependent on the following:
 - Fixed anchor placement within Curecanti NRA is presently permitted and will be further monitored to determine whether an indicating standard for the number of fixed anchor placements per year is appropriate for resource protection and the desired climbing experience.
 - All new fixed protection placements meeting the fixed anchor requirements set forth in this Climbing Management Plan.
 - Climbers noting the number and location of all new fixed protection placements in either a climbing topo or written route description when making a first ascent. A copy of this topo and/or route description will be supplied to the National Park Service (addressed to the lead climbing ranger or given in person to the park staff at the North Rim ranger station) within 30 days of the completion of a new route by first ascensionist.

- f) Modification to the new fixed protection anchor authorization for CURE may be made using the following criteria:
 - If identifiable impacts to backcountry resources (created by new fixed anchor installations) are observed.
 - If the annual new fixed anchor count exceeds the indicating standard (to be determined in the future) by any amount.
 - After a public notice is provided to climbers at park visitor centers, posted on park online resources, and sent to local climbing organizations. This notice shall include identified impact, intent to modify the fixed anchor authorization, and process for public involvement in the fixed anchor authorization process.

- g) Modifications to the new fixed anchor placement authorization will be approved by the park superintendent after considering the recommendations of an interdisciplinary committee that, at a minimum, will include a representative from the park climbing staff, wilderness staff, visitor protection division, resource division.

- h) Within the Curecanti NRA, the replacement (anchor for anchor) of existing fixed protection anchors deemed to be unsafe does not require authorization.

- i) Within the Curecanti NRA, the removal of existing fixed protection anchors no longer known to be in use does not require authorization.

B. Authorization for new fixed access rappel stations varies by park unit and zones:

(1) Black Canyon NP (Primitive Zone) and Curecanti NRA

- a) Within the Black Canyon NP Primitive Zone and Curecanti NRA, the placement of new fixed access rappel stations will be made only after receiving written National Park Service authorization.
 1. An application for authorization to install a new fixed access rappel station will be considered any written document noting:
 - Applicant's name
 - Address
 - Contact phone number
 - Location of the proposed new fixed rappel station
 - Brief description of why the applicant feels a fixed rappel station is warranted at the proposed site.
 2. Applications will be accepted in person at any Black Canyon NP or Curecanti NRA visitor center, by U.S. Postal Service mail (Black Canyon of the Gunnison National Park, Attn: Climbing Staff, 102 Elk Creek, Gunnison, CO 81230), or through park e-mail (cure_info@nps.gov). (Include "FIXED ANCHOR AUTHORIZATION APPLICATION" in the subject line.)
 3. Authorization will be made by the park superintendent after considering the recommendations of an interdisciplinary committee that, at a minimum, will include a representative from the park climbing staff, wilderness staff, visitor protection division, resource division.
 4. The interdisciplinary committee will, at a minimum, consider and document the following when making recommendations to the superintendent concerning authorization for new fixed rappel stations:
 - Anticipated impacts to backcountry or wilderness character both at the proposed rappel station site and in the area to be accessed by the proposed rappel site.
 - All identified access alternatives.
 - Potential climbing usage and the possible effects of that usage on the wilderness character of the area accessed by the proposed rappel station.
 - Effects rappel access may have on any historic climbing character in the area accessed by the proposed rappel station.
 5. The superintendent's authorization decision will be made available to the applicant within 30 days.
 6. Fixed anchor placement for the purpose of authorized fixed access rappel stations shall be kept to a minimum and shall not exceed three individual placements.
 7. New authorized fixed access rappel stations within the boundaries of the Black Canyon NP Pristine Zone or Curecanti NRA shall be constructed using hardware which has been painted a color similar to the natural rock color in the surrounding area.
 8. Chains used in the construction of authorized access rappel stations should be kept to a minimal length to avoid visual impacts.
 9. The use of webbing and accessory cord shall not be allowed in the construction of new authorized fixed access rappel stations.

- b) Within the Black Canyon NP Primitive Zone and Curecanti NRA, the replacement (station for station) of existing fixed access rappel stations deemed to be unsafe does not require authorization.
- c) Within the Black Canyon NP Primitive Zone and Curecanti NRA, the removal of existing fixed access rappel stations, no longer known to be in use, does not require authorization.

(2) Black Canyon NP (Pristine Zone)

In an effort to maintain the exceptional wilderness character found within the Black Canyon NP Pristine Zone, new fixed access rappel stations are prohibited.

3. New Fixed Protection Anchor Hardware Requirements

- a) Modern climbing specific hardware of a diameter and length believed adequate for rock conditions at the installation site.
- b) Modern climbing specific hanger.
- c) Pitons
 1. The installation and removal of pitons does permanent damage to the rock. Pitons will only be used when any other reasonably safe means of protecting the climbing party is nonexistent.
 2. When pitons are used in the development of a new route that would be expected to receive regular traffic in the future, it is recommended that the pitons be left fixed to reduce future damage to the rock.
 3. When a rock feature exists that would allow for another means of protection other than pitons and the climbing party simply does not possess the needed type of equipment, the climbing party should retreat from the route, and obtain the necessary equipment.

4. Fixed Rope

Definition: For the scope of this document, fixed rope is that which is placed to aid in the ascent or descent of a route and remains in place when the climbing party is not on the route.

- a) The placement of fixed rope for the purpose of retreating from and returning to a climb may be allowed under the following conditions:
 1. The climbing party is actively attempting to climb the route.
 2. The placement does not exceed a period of 14 days.
 3. The climbing party remains in the park during the 14-day period.

5. Development of New Routes

Definition: For the scope of this document, a new route shall be deemed any route traveling across previously unclimbed terrain.

- a) It is strongly recommended that climbers planning the development of a new route discuss their plans with park staff prior to undertaking the development of the route.

- b) In the Black Canyon NP, climbers will note the location of any intended new route development in the comments section of the wilderness use permit. (Example: Right of Journey Home or Left side of the third buttress downstream of SOB Draw.)
- c) Climbers will submit a topo and/or route description of the new route that includes the number and location of new fixed protection anchors to the park within 30 days of completion of a new route. Black Canyon of the Gunnison National Park will receive topos/route descriptions at:
 - North or South Rim Visitor Centers
 - Via park e-mail: cure_info@nps.gov Include "ATTENTION CLIMBING STAFF- NEW ROUTE TOPO" in the subject line.
 - Via U.S. Postal Service:
National Park Service
Attn: Climbing Staff
102 Elk Creek
Gunnison, CO 81230
- d) If a first ascensionist feels that any additional fixed protection anchors should be added to the route that they have completed for safety reasons, they will submit a written description of the proposed fixed protection anchor location to the park with the topo and/or route description. This information will be retained by park climbing staff and made available to climbers upon request. The placement of the fixed protection anchor described by the first ascensionist may then be made by a subsequent party.

6. Development of Approach Trails

- a) The intentional development of approach trails is prohibited. Climbers will use Leave No Trace practices and take every precaution available to ensure that the wilderness area remains in a natural state.
- b) Cairns or, in any way, marked approach trails are prohibited.

7. Rock Alteration

Definition: For the scope of this document, rock alteration will be deemed any removal of rock from its natural position, drilling, chipping, or gluing of holds.

- a) The removal of rock from its natural position will be allowed only when the rock to be removed poses a significant risk to the climbing party or a future climbing party and the climber can positively ensure no other people are below.

Note: Due to unpredictable fall lines that are created by multi impacts with the wall, removing rock from a route is extremely dangerous to other canyon users below.

- b) Chipping or the gluing on of holds is strictly prohibited.

8. Vegetation Alteration

Definition: For the scope of this document, vegetation alteration will be deemed any removal of vegetation from its natural position, destruction, or damage of vegetation.

- a) Removal of vegetation from the base of climbs or belay ledges is prohibited.
- b) The removal of vegetation from cracks to allow the crack to become more climbable is prohibited.
- c) When using trees as natural anchors, padding will be placed in between the rope and bark surface to prevent damage to the tree.

9. Visual Impacts

- a) Webbing used to replace worn webbing in existing anchors will be of a natural color, similar to the color of the rock or vegetation in the surrounding area.
- b) New fixed protection anchors and new fixed access rappel stations will be painted a natural color, similar to the color of the rock in the surrounding area (gray or black).

10. Human Waste

- a) Parties climbing routes expected to be completed in one day (no bivouac) shall have available to them a personal human waste pack out system (either commercial unit such as a rest stop bag or improvised unit), which will allow them the capability of removing their solid human waste from the wilderness area.
- b) Parties climbing routes expected to take longer than one day will have in their possession during the climb, a container sufficient to contain human waste without the possibility of leakage or breakage, and such container and its contents will be removed from the park upon completion of the climb.

11. Gear Caches

Definition: For the scope of this document, a gear cache will be deemed any supply of gear left unattended in the wilderness area for future use or the future use of another climbing party.

- a) The caching of climbing equipment at or near the base of a climb will be allowed for a for a period not to exceed 24 hours (36 CFR 2.22(a)(2)).

12. Bouldering

Definition: For the scope of this document, bouldering shall be deemed to be the climbing on rock formations unroped and within a safe distance of the ground that requires the use of specialized equipment (rock climbing shoes, chalk, crash pad, etc.).

New Sustained Bouldering Areas

- a) Park staff shall be notified prior to extended use of new bouldering areas in any area found within backcountry or wilderness.
- b) Sustained use of new bouldering areas may require authorization. Any required authorization will be made by the superintendent after considering the recommendation of an interdisciplinary committee that, at a minimum, will include a representative from the park climbing staff, wilderness staff, visitor protection division, resource division.
- c) The interdisciplinary committee will, at a minimum, consider and document the following when making recommendations to the superintendent concerning authorization for new bouldering areas:
 - Anticipated impacts to wilderness character both at the proposed bouldering site and the access route to the proposed bouldering site.
 - Potential bouldering usage and the possible effects of that usage on the environment and wildlife found at the proposed bouldering site.
 - Effects bouldering activity may have on any historic character of the proposed bouldering site.
- d) The superintendent's decision will be made available to the public within 30 days via postings at park visitor centers and on the park Web site.

13. Highlines and Slacklines

Definition: For the scope of this document, a highline or slackline shall be deemed any rope, webbing, or other material tensioned horizontally between two points for the purpose of walking or travel suspended above the ground.

- a) All highlines and slacklines shall require a special use permit except for slack lines erected within designated camping areas. All highlines and slacklines shall meet the following requirements:
 1. Due to the accessibility and attention that highlines and/or slacklines attract from non-climbing visitors, high lines and/or slack lines shall not be left unattended other than in an individual's designated camping area.
 2. The installation of fixed anchors for the purpose of constructing a highline or slackline will not be allowed within Black Canyon NP or Curecanti NRA.
 3. The use of vegetation and/or park property for the anchoring of highlines and/or slacklines is prohibited within Black Canyon NP or Curecanti NRA.
 4. Highlines and or slacklines spanning any portion of the canyon require a special use permit.
 5. Highlines and/or slacklines of a length or height, that would reasonably be expected to affect the normal operations of the park, require a special use permit.

14. Climbing/Rappelling activities directly effecting developed overlooks and/or trails

Any climbing activity that directly affects visitor use of developed overlooks and/or trails requires a special use permit.

15. Commercial Use Authorizations

Per the findings in the Black Canyon NP and Curecanti NRA Wilderness and Backcountry Management Plan, commercial use authorizations may be considered for guided climbing within Curecanti NRA, but are not allowed within Black Canyon NP to maintain and improve opportunities for challenge, self-reliance and adventure that are integral to the wilderness character of the inner canyon.

16. Rescue Considerations

Section 8.2.5.3, Search and Rescue, of the National Park Service Management Policies (2001) states: “To provide for the protection and safety of park visitors, the Service will make reasonable efforts to search for lost persons, and to rescue sick, injured, or stranded persons. This responsibility may be fulfilled by Service staff or by qualified search-and rescue organizations or agencies that are capable of responding to life-threatening emergencies pursuant to the terms of a formal agreement. Deceased persons will be evacuated unless the level of risk to the rescue party is found to be unacceptably high.”

Consistent with this policy, park staff will undertake rescue operations for those in need, unless it is deemed that the risk would be too great to rescue personnel. The park will seek additional resources to assist at any time the incident commander believes it is in the best interest of the park, safety of employees and visitors, and/or the injured or stranded party. Activating outside resources adds to the response time, but in cases must be done in order to safely respond to some situations. Efforts will be made to provide necessary treatment and services to the sick, injured and stranded consistent with the policy above and the resources available to provide assistance. In all cases, the safety and well being of rescue personnel and the public will be of upmost importance.

Being overdue simply because a climbing party underestimated the time required to complete a route does not warrant initiation of a rescue operation. Be aware that cell phone reception and transmission is generally not available within the canyon or along the rim. Rangers may attempt to contact climbers that appear to be having difficulty. In such instances, the climber should raise one arm if he/she does not require assistance, and both arms if assistance is requested.

17. Ongoing Monitoring and Management

The Black Canyon NP and Curecanti NRA Wilderness and Backcountry Management Plan establishes indicators, measures, and standards that will be monitored for the preservation of wilderness and backcountry character. They include measures such as number of visitor encounters, impacts to soils and vegetation by user-created trails, concentrations of toilet paper and human waste, and number of new climbing bolts per year. If standards for these measures are exceeded, the plan has established a suite of possible management actions that include education, enforcement, and possible adjustments to measures, standards, and regulations.

APPENDIX C

- a) Any adjustments to regulations will be made by the superintendent after considering the recommendation of an interdisciplinary committee that, at a minimum, will include a representative from the park climbing staff, wilderness staff, visitor protection division, resource division.
- b) The interdisciplinary committee will, at a minimum, consider and document the following when making recommendations to the Superintendent concerning changes to regulations:
 - Goals, objectives, and desired conditions established in the Black Canyon NP and Curecanti NRA Wilderness and Backcountry Management Plan.
 - Effectiveness of proposed changes in protecting wildlife, vegetation, soils, archeological resources, visitor experiences of climbers and other visitors, and preservation of wilderness and backcountry character.
- c) The superintendent's decision will be made available to the public within 30 days via postings at park visitor centers and on the park Web site.

**APPENDIX D:
MEASURES, STANDARDS, AND MANAGEMENT STRATEGIES**

MEASURES, STANDARDS, AND MANAGEMENT STRATEGIES

Note: one measure for each indicator has been highlighted in gray as the "priority" measure. The priority measure is the minimum monitoring that will be conducted by the NPS staff for each wilderness quality indicator. Other measures will be monitored as time and staffing allows.

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Natural/ Biophysical Processes	Departure from natural water flows	Departure from natural surface water flows as a function of real-time or discrete river and stream discharge compared to historic flow data	Shifts in magnitude or timing in discharge due to anthropogenic withdrawals or operations, or climate change	Inner Canyon, EPMP, Blue Mesa	% deviation from natural flows Standard will be developed in the future	<ul style="list-style-type: none"> Cooperate with BOR in planning for BILCA water right Participate in process regarding/BOR contracting of Aspinall water
Natural/ Biophysical Processes	Departure from natural water flow	Quantitative change in river morphology/elevation and in-stream biota	Same as above	Inner Canyon	% deviation from natural flows, conditions, species composition, DSS Auble Standard will be developed in the future	<ul style="list-style-type: none"> Cooperate with BOR in planning for BILCA water right Implement Big Rivers monitoring program; Participate in process regarding/BOR contracting of Aspinall water
Natural/ Physical Resources	Extent and magnitude of human-caused change in water quality.	Existing quality of park water bodies based on state water quality standards established by the Clean Water Act	Threats to aquatic life and human health based on physical and chemical numeric and table value standards	Inner Canyon, Uplands, EPMP, Blue Mesa	Quality will not exceed numeric and table value standards as set by State water quality standards	<ul style="list-style-type: none"> Work internally and with public and private entities to avoid, whenever possible, the pollution of park waters by human activities occurring within and outside of parks.
Natural/ Physical Resources	Visibility based on average declivity and sum of anthropogenic fine nitrate and sulfate.				Standard will be developed in the future	

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does It Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Natural/ Plant & Animal Resources	Abundance, distribution, or number of known nonindigenous and invasive species	Annual documentation of area affected by non-indigenous and invasive vegetative species, individuals per acre, or stream-mile, and UTM location, as well as number of documented non-native animal species known to inhabit the park.	Area and extent of initial invasion and spread over time	Inner Canyon, Uplands, EPMP, Blue Mesa	<ul style="list-style-type: none"> ≥ 5% decrease in area affected by noxious weed species 0 new nonindigenous aquatic or terrestrial animal species 	<ul style="list-style-type: none"> Increase education that focuses on preventing nonnative species invasion Perform noxious weed control Limit disturbances to habitats to limit invasion by nonnative animals Limit invasive species vectors and pathways
Natural/ Plant & Animal Resources	Vectors of known non-indigenous and Invasive species (presence/absence)	Type and number of vectors of known non-indigenous and invasive species	Introduction potential of park lands by non-indigenous and invasive species	Inner Canyon, Uplands, EPMP, Blue Mesa	0 new unmitigated vectors of known non-indigenous and invasive species	<ul style="list-style-type: none"> Mitigate all known and new vector pathways through education, prevention, or regulation
Natural/ Plant & Animal Resources	Number of acres of authorized grazing allotments and number of animal unit months (AUMs) of actual use inside wilderness	Number of acres of authorized grazing allotments and number of AUMs per allotment	Amount of grazing occurring on NPS lands	Inner Canyon, Uplands, EPMP and Blue Mesa	<ul style="list-style-type: none"> No increase in grazed acres and AUMs No increase in grazed acres or AUMS except as authorized through land acquisitions 	<ul style="list-style-type: none"> Continue to work with BLM and USFS grazing managers and permittees Develop grazing MOUs Fence allotments as appropriate to better manage the grazing that occurs Evaluate proposed land acquisitions for grazed acres
Natural/ Plant & Animal Resources	Change in composition of targeted communities (use vegetation map for measure and monitoring)	Uplands, Piñon-Juniper (PJ): Species richness, densities and associated trends of passerine species gathered through point-count distance sampling, Vegetation	Presence/absence, species richness, density and trends in PJ community indicator species	Uplands, EPMP	<ul style="list-style-type: none"> ≤ 15% decline of PJ obligate passerine species over the span of 10 years as per ref. ≤ 15% decline of PJ associated vegetative species over the span 	<ul style="list-style-type: none"> Monitor precipitation, climate change Control noxious weeds, protect relic PJ, enforce motor vehicle bans, vegetation restoration

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
		composition and associated trends gathered through transect/plot sampling			of 10 years	<ul style="list-style-type: none"> Look at long-term target communities such as ephemeral pools, hanging gardens, cliff habitats
		Uplands, Oak: Species richness, densities and associated trends of passerine species. gathered through point-count distance sampling. Vegetation composition and associated trends gathered through transect/plot sampling	Presence/absence, species richness, density and trends in Oak community indicator species	Uplands, EPMP	<ul style="list-style-type: none"> ≤ 15% decline of oak obligate passerine species over the span of 10 years ≤ 15% decline of oak associated vegetative species over the span of 10 years 	<ul style="list-style-type: none"> Control noxious weeds, monitor and protect oak from sudden oak death, exclude motor vehicle bans, exclude livestock, vegetation restoration
	Change in composition of 2 rare plant populations	Cottonwood/Riparian Species richness, densities and associated trends of passerine species gathered through point-count distance sampling. Vegetation composition and associated trends gathered through plot sampling	Presence/absence, species richness, density and trends in Cottonwood/Riparian community indicator species	Blue Mesa	<ul style="list-style-type: none"> ≤ 15% decline of Cottonwood/Riparian obligate passerine species over the span of 10 years ≤ 15% decline of Cottonwood/Riparian associated vegetative species over the span of 10 years 	<ul style="list-style-type: none"> Control noxious weeds, protect cottonwood recruits, vegetation restoration

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC Measures	What Does It Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
		Sagebrush Species richness, densities and associated trends of passerine species gathered through point-count distance sampling, Vegetation composition and associated trends gathered through plot sampling	Presence/absence, species richness, density and trends in Sagebrush community indicator species	Uplands, Blue Mesa Uplands	<p>≤ 15% decline of Sagebrush obligate passerine species over the span of 10 years</p> <p>≤ 15% decline of Sagebrush associated vegetative species over the span of 10 years</p>	<ul style="list-style-type: none"> • Control noxious weeds, enforce dog leash laws during nesting season, decrease human disturbance, vegetation • Restoration • Monitor precipitation, climate change
		Black Canyon gilia density at Chasm View overlook Hanging garden Sullivantia density on Warner route reach	Change in population size and density, and trends in habitat composition and health	Inner Canyon	<p>≤ 15% decline of population size/density over the span of 10 years</p>	<ul style="list-style-type: none"> • Look at long-term target communities such as ephemeral pools, hanging gardens, cliff habitats • Control noxious weeds, decrease human disturbance, vegetation restoration

MEASURES, STANDARDS, AND MANAGEMENT STRATEGIES

Note: one measure for each indicator has been highlighted in gray as the "priority" measure. The priority measure is the minimum monitoring that will be conducted by the NPS staff for each wilderness quality indicator. Other measures will be monitored as time and staffing allows.

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Amount of visitor use (number of people going into each area; track type of use – hiking, overnight, climbing, boating, and assess amount of use)	Number of visitors going into each area within the Inner Canyon and type of use based on issued permits	Number of Inner Canyon visitors by activity	Inner Canyon	≤ The site-specific Daily Visitor Use Limit listed below: Red Rock – 15 Warner – 23 Gunnison – 15 Tomichi – 9 SOB – 23 Long Draw – 8 Slide Draw – 11	<ul style="list-style-type: none"> • Increase patrols to ensure compliance if Visitor Use Standards are reached • Manage the timing and location of use to distribute visitors so that encounter rates are not exceeded • Re-evaluate use limits if encounter rate standards (see below) are exceeded
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Amount of visitor use (number of people going into each area; track type of use – hiking, overnight, climbing, boating, and assess amount of use, particularly overnight, in the uplands)	Number of visitors going into each area within the Uplands and type of use based on issued permits	Number of Uplands visitors by activity	Uplands	≤ The site-specific Daily Visitor Use Limits for North Vista, Deadhorse, Rim Rock, Oak Flat, Warner trails (these limits are not yet determined but will be calculated following data collection)	<ul style="list-style-type: none"> • Gather data, evaluate, and set standards • Increase patrols to measure to see if use is within standards • If standard exceeded, managed the timing and location of use to distribute visitors so that encounter rates are not exceeded (could involve access permits) • Re-evaluate encounter rates if standards are exceeded

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Condition of designated trails/routes	presence of fire rings, trampled vegetation, litter, bare soil) Trail/route width and depth (using established methods e.g., Cole or Marion)	Vegetation impacts, soil compaction, erosion	Inner Canyon, Uplands	Increase in trail width or depth of $\leq 50\%$ over baseline condition	<ul style="list-style-type: none"> Rehabilitate to limit resource impacts Reevaluate and consider reducing use limits if restoration cannot be sustained
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Area of wilderness affected by access or travel routes that are inside wilderness, including social trailing and climbing route development	Length and area affected by existing and new trails, routes, and climbing routes; number of informal routes leaving off of one mile of designated route; number of new climbing routes; number and type of sensitive physical, biological, and social resources potentially impacted	Potential effects to physical, biological, and social resources from use of travel routes	Inner Canyon Primitive, EPMP Inner Canyon Pristine	<ul style="list-style-type: none"> ≤ 1 informal route that affects soils or vegetation leaving off of one mile of designated route, ≤ 7 new climbing routes per year in IC Primitive 0 new identifiable access routes Concentration of climbing routes ≤ 4 per linear mile of the canyon rim 	<ul style="list-style-type: none"> Evaluate new access routes to determine area of influence, affected resources, encounter rate standards, etc. Determine to allow/disallow use of new access based on evaluation Increase education of climbing ethics Determine the desired climbing route concentration in the primitive zone Regulate the number of new climbing routes using the permit process that assesses the concentration of routes in the area of the proposed new route Apply management restrictions as necessary to protect sensitive species Rehabilitate and educate Evaluate EPMP and adjust as appropriate

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Remoteness from sights and sounds of people inside the wilderness	Area of wilderness affected by access or travel routes that are inside wilderness, including social trailing	Length and area affected by existing and new trails and routes; number of informal routes leaving one mile of designated route; number and type of sensitive physical, biological, and social resource potentially impacted	Potential effects to physical, biological, and social resources from use of travel routes	Uplands	≤ 1 informal route leaving one mile of designated route	<ul style="list-style-type: none"> Evaluate new access routes on a case-by-case basis to determine area of influence, affected resources, encounter rate indicators etc Determine to allow/disallow use of new access based on evaluation Apply management restrictions as necessary to protect sensitive species Rehabilitate and educate
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Number of encounters with human waste/toilet paper/litter	Number of observed human waste piles, toilet paper concentrations, and pieces of litter during each patrol and assessment	Amount of human evidence	Inner Canyon, Uplands	≤ 10% of patrols and assessments observe human waste, toilet paper, or litter	<ul style="list-style-type: none"> Increase/modify education on low impact practices Increase enforcement of human waste and litter regulations Implement pack-it-out strategy
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Number of new climbing bolts	Number of new climbing bolts per year	Intrusion of fixed installations	Inner Canyon Primitive, Inner Canyon Pristine EPMP	<ul style="list-style-type: none"> ≤ 15 new bolts per year in 0 new bolts A recommended standard will be established in the future after reviewing annual anchor counts 	<ul style="list-style-type: none"> Increase/modify education about ethical climbing practices Increase enforcement of climbing regulations Close to further bolting when bolting and climbing route concentrations are reached Evaluate EPMP and adjust as appropriate

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Solitude – Unconfined/ Remoteness from sights and sounds of people inside the wilderness	Number of new belay or rappel stations (creating new access routes)	Number of new belay or rappel stations	Intrusion of fixed installations	Inner Canyon Primitive, EPMP Inner Canyon Pristine	0 belay or rappel stations without prior NPS approval 0 belay or rappel stations	<ul style="list-style-type: none"> Park approval required prior to installation per Interim Climbing Plan Increase/modify education about ethical climbing practices Increase enforcement of climbing regulations
Solitude – Unconfined/ Remoteness from occupied and modified areas outside the wilderness	Night sky visibility (light pollution) averaged over the wilderness	Light pollution averaged over the wilderness (using established methods e.g. Moore)	Intrusion of human influence	Inner Canyon, Uplands	Increase in measured light pollution of \leq 4% above baseline. Please retain in table for now as we develop this standard.	<ul style="list-style-type: none"> Educate and increase outreach on low impact lighting Establish partnerships with external entities to encourage low impact lighting
Solitude – Unconfined/ Remoteness from occupied and modified areas outside the wilderness	Extent and nature of intrusions on the natural soundscape	Noise pollution averaged over the wilderness	Intrusion of human influence	Inner Canyon, Uplands	Increase in measured noise pollution of \leq 8% above baseline. Please retain in table for now as we develop this standard.	<ul style="list-style-type: none"> Educate and increase outreach on reducing noise impacts Establish partnerships with external entities to reduce noise impacts
Solitude – Unconfined/ Facilities that decrease self-reliant recreation	Type and number of agency-provided recreation facilities (toilets, trails, campsites, signage, bear cables)	Type and number of agency-provided recreation facilities	Installations in wilderness	Inner Canyon, Uplands Primitive Inner Canyon, Uplands Pristine	0 new installations without prior MRDG approval 0 new installations	<ul style="list-style-type: none"> Increase management enforcement and accountability Utilize MRDG process for all proposed installations and ensure all new installations result in no net long term decrease to wilderness character Clearly establish role and function of park Wilderness Advisory Committee

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC+ Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Solitude – Unconfined/ Management restrictions on visitor behavior	Type and extent of management restrictions (permits, designated campsites, reservations, open fire, pets, bolting)	Type and number management restrictions	Management influence on visitor behavior	Inner Canyon, Uplands	0 new restrictions without prior MRDG approval	<ul style="list-style-type: none"> ▪ Utilize MRDG process for all proposed restrictions and ensure all new restrictions result in no net long term decrease to wilderness character ▪ Clearly establish role and function of park Wilderness Advisory Committee

MEASURES, STANDARDS, AND MANAGEMENT STRATEGIES

Note: one measure for each indicator has been highlighted in gray as the "priority" measure. The priority measure is the minimum monitoring that will be conducted by the NPS staff for each wilderness quality indicator. Other measures will be monitored as time and staffing allows.

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Undeveloped/ Non-recreational structures, installations, and developments	WILDERNESS – livestock fence, roads, irrigation ditch and piping, stock ponds, elk fence, etc.	Areal extent (length of features) X (width)) of disturbance resulting from structures installations and developments – to establish an initial baseline value for all features combined	Net change in impacts of features on wilderness	IC, Uplands, Primitive	≤ 5 % total increase from established initial baseline. A decrease below initial baseline value will re-establish the baseline at the new, lower value	<ul style="list-style-type: none"> Limit and regulate new installations of non-recreational structures using the established MRDG process Coordinate with BLM to ensure all proposed grazing-related development receive NPS review and approval Remove structures and rehabilitate areas no longer needed
Undeveloped/ Non-recreational structures, installations, and developments	BACKCOUNTRY – radio repeaters, irrigation ditches, livestock fence, abandoned roads, power lines, gauging stations, etc	Aerial extent (length of features) X (width)) of disturbance resulting from structures installations and developments – to establish an initial baseline value for all features combined	Monitor net change in development	IC, Uplands, Pristine EPMP Blue Mesa	≤ 5 % total increase from established initial baseline. A decrease below initial baseline value will re-establish the baseline at the new, lower value	<ul style="list-style-type: none"> Limit and regulate new installations of non-recreational structures using an established backcountry MRDG process Coordinate with BLM to ensure all proposed grazing-related development receive NPS review and approval Remove structures and rehabilitate areas no longer needed

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Undeveloped/ Nonrecreational structures, installations, and developments	Index of unauthorized (user-created) physical development (Stock ponds, fences, irrigation ditches, motocross trail construction, etc.)	Number of incidents reporting newly discovered unauthorized physical developments	Unauthorized disturbances with vegetation trampling and loss, soil compaction, erosion, spread of invasives, habitat fragmentation	All Zones	No increase in newly discovered unauthorized developments	<ul style="list-style-type: none"> Increase communication with neighbors and grazing allotment (BLM or USFS) managers Focus public education on NPS resource protection regulations Improve signage Educate new LE personnel and other NPS staff on specific resource threats through training Increase # of patrols Mark/fence park boundaries Attempt to return to original condition by removing/restoring inappropriate structures Take legal actions (e.g. 19 jj) when appropriate
Undeveloped/ Non- recreational structures, installations, and developments	Index of authorized research plots and survey markers (more important for wilderness, rather than backcountry)	Number of new, permanent, non- boundary research/survey/cadastral markers.	New "structures" within wilderness	IC, Uplands Primitive IC, Uplands Pristine	0 new markers without prior MRDG approval. 0 markers	<ul style="list-style-type: none"> Remove all temporary markers at end of project Increase management oversight by park personnel Manage number allowed through MRDG process. Ensure that all new markers result in no net long term decrease to wilderness character
Undeveloped/ Inholdings BACKCOUNTRY	Area and existing or potential impact of inholdings and adjacent lands. Acres and intensity of development	Number of new development applications to the county within one half mile of the NPS boundary	New developments around the park unit which may have an effect on visitor experience	All	100% of applications are reviewed by NPS staff	<ul style="list-style-type: none"> Provide representation and input to minimize the impact of development via Board of County Commissioners meetings, etc. Distribute "Good Neighbor" booklet Work with private land owners to reduce impacts

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC+ Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Undeveloped/ Use of motor vehicles, motorized equipment, or mechanical transport	Type and amount of administrative and non-emergency use of motor vehicles, motorized equipment, or mechanical transport (includes helicopter use for research, chainsaw use, battery-operated drill to fix solar panel, solar powered composting toilet, ATV use for trespass cattle management)	Number of occurrences of administrative and non-emergency use of motor vehicles, motorized equipment, or mechanical transport	Use of non-emergency motorized equipment	Wilderness IC, Uplands	≤ 3 occurrences per year approved with MRDG review	<ul style="list-style-type: none"> Conduct annual planning to determine what occurrences will/will not occur Implement MRDG review process to insure appropriate approvals. Ensure that all occurrences result in no net long term decrease to wilderness character Provide staff training for use of non-mechanized tools Purchase non-mechanized tools/equipment
Undeveloped/ Use of motor vehicles, motorized equipment, or mechanical transport	Type and amount of emergency use of motor vehicles, motorized equipment, or mechanical transport (includes helicopter use for rescue in wilderness)	Number of occurrences of emergency use of motor vehicles, motorized equipment, or mechanical transport	Use of emergency motorized equipment	Wilderness IC, Uplands	No more than 50% increase in occurrences over 5-year average	<ul style="list-style-type: none"> Attend training for non-mechanized rescue techniques Increase PSAR efforts Purchase additional SAR equipment
Undeveloped/ Use of motor vehicles, motorized equipment, or mechanical transport	Type and amount of motor vehicle, motorized equipment, or mechanical transport use not authorized by the Federal land manager (includes base jumping, bulldozers for stock pond improvement, motorcycle use and mountain biking, ATV use by grazing permittees to manage adjacent lands, etc.)	Number of reported offenses of unauthorized motor vehicle, motorized equipment, or mechanical transport.	Disturbances through motorized equipment use	Wilderness IC, Uplands	0 reported offenses of unauthorized motor vehicle, motorized equipment, or mechanical transport.	<ul style="list-style-type: none"> Educate staff to communicate offenses to LE Improve signage Employ monitoring systems Increase patrols Coordinate reporting information and public education with BLM about use of mechanized travel on public lands Terminate access routes on adjacent lands to better protect wilderness lands from encroachment of unauthorized uses

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Undeveloped/ Loss of statutorily protected cultural resources	Number and severity of human-caused disturbances to cultural resources	Number of reported incidents of human- caused disturbances to cultural resources	Impact of human on specific cultural resources	All	0 reported incidents of human-caused disturbances to cultural resources	<ul style="list-style-type: none"> • Improve staff education • Use appropriate signage to discourage disturbance • Increase patrols
Undeveloped/ Loss of statutorily protected cultural resources	Number and severity of natural disturbances to cultural resources	Number of natural disturbances to cultural resources observed during established routine monitoring schedule rated "poor" or below according to the Intermountain Region Site Condition Assessment Form	Damages caused by weather and animal for each property	All	≤ 37 % of Parks' sites are in poor condition	<ul style="list-style-type: none"> • Consult SHPO for appropriate actions • Implement appropriate erosion control • Use appropriate techniques to revegetate sites

MEASURES, STANDARDS, AND MANAGEMENT STRATEGIES

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Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Untrammelled/ Actions Authorized	Percent of natural fire starts that received a suppression response	Percent reported natural fire starts suppressed per year	Vegetation trampling and loss, soil compaction and erosion, spread of invasives, habitat fragmentation, retardant use in riparian areas; impacts to water and vegetation	All	IC and uplands outside of arch or relic sites = 0 EPMP = 0 Blue Mesa ≤ # of suppression actions required by FMP per unit All developed zones = 100%	<ul style="list-style-type: none"> • Provide education and public info on managing fire • Coordinate with cooperating agencies, land owners • Manage natural fire starts as per FMP
Untrammelled/ Actions Authorized	Invasive weed removal	Acres of invasive weeds treated per year	Spread of invasives, new infestations	All	# of acres would vary by species; see chart	<ul style="list-style-type: none"> • Focus education on invasive weed prevention • Treat invasives as per IPM guidelines • Map and treat invasives annually, especially populations in corridors • Develop IPM plan
Untrammelled/ Actions Authorized	Control actions related to plant/forest/visitor pests (includes native ants)	Acres or number of trees treated per year for native pests # of treatments for visitor pests	Pest populations, number of "flights" (generations) produced per year	Inner canyon, uplands and EPMP Blue Mesa	0 acres or actions ≤ 2 treatments per site per year	<ul style="list-style-type: none"> • Focus education on the role of natural pests in ecological systems • Monitor pest populations in target areas • Develop IPM plan

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Untrammelled/ Actions Authorized	Trapped, handled, shocked, and/or marked wildlife	Number of individual animals trapped, handled, shocked and/or marked which are trapped in or travel into the wilderness area per year	Direct trampling of wildlife	Inner Canyon and Uplands	0 animals without MRDG and Scientific Research and Collecting Permit (SRCP) approval processes to evaluate overall trend and cumulative impact	<ul style="list-style-type: none"> Assess if there are non-wilderness areas to perform wildlife research which will provide the same information Limit sample sizes of marked animals to the lowest statistically viable sample size if research is conducted in the area Postpone or deny new projects as appropriate
Actions Authorized	Prescribed fire and hazard fuels management (mechanical manipulation in backcountry areas)	Number of prescribed fire and hazard fuels management projects per zone as reported in acres treated/year	Vegetation trampling and loss, soil compaction and erosion, spread of invasives, habitat fragmentation	Inner canyon and uplands EPMP and Blue Mesa	<p>≤ 1 project/year/zone</p> <p>≤ 2 projects/year/zone</p>	<ul style="list-style-type: none"> Focus education on the role of fire in ecosystems Manage fuels as per FMP, 5-year fuels plan
Actions Authorized	Restoration of soils and vegetation (includes seeding, fertilizing)	# of restoration of soils and vegetation projects per zone as reported by # of acres restored and/or plants planted	Land/soil disturbance, loss of native vegetation	Inner canyon and uplands EPMP and Blue Mesa	<p>≤ 1 project/year/zone</p> <p>No limit, as needed to protect resources</p>	<ul style="list-style-type: none"> Focus education on "Leave No Trace" Use native plant materials and minimal fertilization from organic sources Use temporary mechanical protection against browsing wildlife Use temporary signage at restoration sites

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC* Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Actions Authorized	Number and location of lakes and river stocked with fish and species stocked	# of lakes and streams/rivers stocked with fish # of fish stocked per body of water Species of fish stocked	Introduction and maintenance of native and non- native fish populations	Inner canyon EPMP and Blue Mesa	0 stocking within the wilderness 0 new introductions without consultation between NPS and CDOW	<ul style="list-style-type: none"> Focus education on fisheries management Coordinate with state and federal hatcheries and fishery managers Continue with fish population research, creel surveys, and impact studies
Actions Authorized	Number of new authorized actions affecting biophysical resources	# of projects affecting biophysical resources	Depends on objectives (e.g. MCPN Big Rivers research)	Inner canyon and uplands EPMP and Blue Mesa	0 new projects without MRDG and SRCP approval. 0 new projects without SRCP approval.	<ul style="list-style-type: none"> Be alert to new actions and resource conditions Continue to permit research
Actions not Authorized	Incidences of collecting (plants, seeds, shed antlers, paleo, rocks, archeo), measured currently in the number of enforcement actions related to collecting	# of warnings, citations, and reports indicating incidences of unauthorized collecting	Resource disturbance and extraction	All	0 percent increase in violations over the 5-year average	<ul style="list-style-type: none"> Focus public education on NPS resource protection regulations Educate new LE personnel and other NPS staff on specific resource threats through training Increase # of patrols
Actions not Authorized	Incidences of poaching/hazing, measured currently in the number of enforcement actions related to poaching/hazing	# of warnings, citations, and reports indicating incidences of poaching/hazing	Disturbance to wildlife populations and habitat	All	0 percent increase in violations over the 5-year average	<ul style="list-style-type: none"> Focus public education on NPS resource protection regulations Educate new LE personnel and other NPS staff on specific resource threats through training Increase # of patrols

Quality/ Indicator	Measure Topic (as developed in workshop)	SPECIFIC Measures	What Does it Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Actions not Authorized	Incidences of improper food & trash storage (evaluating compliance w/ proper storage)	# of warnings, citations, and reports indicating incidences of improper food & trash storage, including wildlife "reward" reports Percent of wilderness/backcountry users out of compliance with proper food storage regulations	Wildlife behavior issues Public safety	All	≤ 5% non- compliance Decrease number (by 20%) wildlife rewards from the 2010 season	<ul style="list-style-type: none"> • Focus visitor and staff education on incident prevention • Provide appropriate food storage and trash containers for all zones • Increase LE staff patrols and walk-throughs in campgrounds during high visitor encounter times • Develop a wildlife management plan • Require the use of bear canisters in the inner canyon and uplands

APPENDIX E: COMMERCIAL SERVICES ANALYSIS

Appendix E
Commercial Services for Wilderness and Backcountry Areas
Black Canyon of the Gunnison National Park
Curecanti National Recreation Area

As a part of this wilderness and backcountry management plan for Black Canyon NP and Curecanti NRA, the appropriate role of commercial operators in helping parks to provide opportunities for visitor services is analyzed and identified. Commercial visitor services, through concession contracts or commercial use authorizations, must be consistent to the highest degree practicable with the preservation and conservation of park resources and values. Commercial services have been evaluated to determine whether or not they are appropriate and necessary, utilizing the guidance of NPS concession management laws, regulations, policies, and the goals and objectives of this backcountry and wilderness plan. As this plan is addressing wilderness and backcountry, this section is focused on commercial services through commercial use authorizations, as distinct from concession contracts which generally involve facilities as well as services. This plan does not identify need for additional facilities within the wilderness and backcountry.

The first filter applied is whether or not the general use, commercial or not, is appropriate in the various zones. Current uses that are appropriate in Black Canyon of the Gunnison National Park and Curecanti National Recreation Area have been determined by laws, regulations, policies, park purposes, and plans in order to protect desired conditions for resources and visitor experiences. This backcountry/wilderness use plan has further identified appropriate uses based upon management policies and desired future conditions for specific zones.

The second filter in evaluating commercial services is whether or not the commercial service is appropriate per policy and the goals and objectives of this plan. Appropriate commercial services must meet all of these criteria.

- a. Services are consistent with the purposes and values for which the park was established, as well as applicable laws, regulations, and policies.
- b. Services do not compromise public health, safety, or well-being.
- c. Services do not significantly impact important park resources and values.
- d. Services do not unduly conflict with other authorized park uses and activities or services outside the park.
- e. Services do not monopolize limited recreational opportunities at the expense of the general public.

If it does meet all of the criteria for appropriate commercial service, the next filter is whether or not the commercial service is necessary. Necessary commercial services must meet one or more of the following criteria:

- a. Enhances visitor understanding and appreciation of park mission and values.
- b. Facilitates or complements the fundamental experiences of park visitors.
- c. Assists the park in managing visitor use and educating park visitors in appropriate, safe, and minimum-impact techniques.

- d. Is an essential visitor service or facility not available within a reasonable distance from the park.

For wilderness areas, there is an additional filter. The Wilderness Act of 1964, Section 4 (d) (6) states that “Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.” Commercial services in wilderness also must fulfill the broader purpose of the wilderness act, which is to protect and enhance wilderness character, and avoid prohibited uses except as necessary for the administration of the area. Necessary wilderness commercial services must meet all of the following criteria:

- a. Extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas (recreation, scenic, scientific, educational, conservation, and historical use).
- b. Does it protect and enhance desired conditions for wilderness character (the broader purpose of the Wilderness Act)?
- c. Application of Minimum Requirement – if the first two criteria are met, what is the minimum activity necessary to achieve the goal?

These filters have been applied to visitor activities within the zones identified in this plan to determine what, if any, commercial visitor services are necessary and appropriate. Some commercial services may be necessary and appropriate in some zones but not in others because the desired conditions for visitor experiences, resource conditions, and wilderness character vary by zone. If new uses proposed in the future, they would be analyzed through these filters, including the desired conditions for the zones identified in this plan.

Table 1. Commercial Services Filters for Black Canyon – Inner Canyon Wilderness Zone (including subzones)										
Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas		
Black Canyon Inner Canyon Zone (including subzones)										
1. Is the visitor activity appropriate in this zone (general public or commercial)?										
Has this use been determined to be appropriate through applicable laws, regulations, policies, park purposes, and planning for desired future conditions for resources and visitor experiences?	YES	YES	YES	YES	YES	NO*	YES	NO**		
Go on to the next filter?	OK	OK	OK	OK	OK	STOP	OK	STOP		
2. Commercial service for visitor activity – general: "Appropriate" per National Park Concession Policy (meets all)										
a. Services are consistent with the purposes and values for which the park was established, as well as applicable laws, regulations, and policies.	Meets	Meets	Meets	Meets	Meets	N/A	Meets	N/A		N/A
b. Services do not compromise public health, safety, or well-being	Meets	Meets	Meets	Meets	Meets	N/A	Meets	N/A		N/A
c. Services do not significantly impact important park resources and values.	Meets	Meets	Meets	Meets	Meets	N/A	Meets	N/A		N/A
d. Services do not unduly conflict with other authorized park uses and activities or services outside the park.	Meets	Meets	Meets	Meets	Meets	N/A	Meets	N/A		N/A
e. Services do not monopolize limited recreational opportunities at the expense of the general public.	Does not meet	Does not meet; unless limited to climbing -only access other than routes	Does not meet	Does not meet	Meets	N/A	Does not meet***	N/A		N/A
Meets ALL criteria for "Appropriate"	No	Yes	No	No	Yes	N/A	No	N/A		N/A
Go on to the next filter?	STOP	STOP	STOP	STOP	STOP	STOP	STOP	STOP		STOP
3. Commercial service for visitor activity- general: "Necessary" per NPS Concession Policy (meets one or more)										
a. Enhances visitor understanding and appreciation of park mission and values.	N/A	Meets	N/A	N/A	Meets	N/A	N/A	N/A		N/A
b. Facilitates or complements the fundamental experiences of park visitors.	N/A	Meets	N/A	N/A	Meets	N/A	N/A	N/A		N/A
c. Assists the park in managing visitor use and educating park visitors in appropriate, safe, and minimum-impact techniques	N/A	Meets	N/A	N/A	Meets	N/A	N/A	N/A		N/A

Table 1. Commercial Services Filters for Black Canyon – Inner Canyon Wilderness Zone (Including subzones)

Visitor Activity →	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
Black Canyon Inner Canyon Zone (including subzones)								
d. is an essential visitor service or facility not available within a reasonable distance from the park.	N/A	Meets	N/A	N/A	Does not meet	N/A	N/A	N/A
Meets one or more of the "necessary" criteria	N/A	Yes	N/A	N/A	Yes	N/A	N/A	N/A
Go on to the next filter?		Yes			Yes			
4. Commercial Service - Wilderness: The Wilderness Act Section 4(d) (6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.								
a. Extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas (recreation, scenic, scientific, educational, conservation, and historical use)	N/A	No	N/A	N/A	No	N/A	N/A	N/A
b. Does it protect and enhance desired conditions for wilderness character (the broader purpose of the Wilderness Act)?	N/A	No	N/A	N/A	No	N/A	N/A	N/A
c. Application of Minimum Requirement – If the first two criteria are met, what is the minimum activity necessary to achieve the goal?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Meets all of the wilderness criteria?	N/A	No	N/A	N/A	No	N/A	N/A	N/A
Is this commercial service appropriate and necessary in this zone?	No	No	No	No	No	No	No	No

* Horseback riding is not a visitor activity allowed in this zone because of the steepness of the inner canyon and rough routes (no trails).

** The use of motorized vehicles in wilderness is prohibited.

*** The most likely type of this activity would be guided backpacking, which could impinge upon the current general public demand for access to the inner canyon.

Conclusions for Black Canyon – Inner Canyon Zone (including inner canyon pristine wilderness and inner canyon primitive wilderness zones)

No commercial services are necessary or appropriate in the Black Canyon inner canyon wilderness zone. The activities of horseback riding and the use of motorized vehicles are not allowed, private or commercial, in this zone. The activities of hiking, camping, fishing, and educational tours (guided backpacking) do not meet all of the “appropriate” criteria of the second filter. Specifically, these activities do not pass the criteria “Services do not monopolize limited recreational opportunities at the expense of the general public.” Visitors are fully utilizing the available permits for access into the inner canyon for these activities without guides and outfitters, and introducing commercial services would diminish general public recreational opportunities. These activities were not analyzed further in the matrix. The activities of climbing and kayaking can occur without utilizing the limited access routes, and are further analyzed here.

There is currently some guided climbing comprising a small percentage of the total climbing activity (12% or 136 climbers in 2009, 3% or 40 climbers in 2010). Climbing generally uses the same access routes within the limited permit system, hence there is the potential for monopolizing limited recreational activities at the expense of the general public. There are a few possible climbing areas that do not require the general access routes covered by the permit system, and those were considered for availability for commercially guided climbing. When those few opportunities were evaluated in the third filter for wilderness, it was determined that guided climbing is not necessary for realizing the purposes of wilderness or for protecting and enhancing the desired conditions for wilderness character for this zone. While guided climbing could help enhance the natural character by practicing and teaching leave-no-trace ethics, guiding does not support the goal for the inner canyon zone of providing a visitor experience that is challenging and self-reliant, including individual responsibility for education and preparation. To maintain and improve opportunities for challenge, self-reliance, and adventure that are integral to the wilderness character of the inner canyon wilderness zone, guided climbing would be discontinued.

There is currently some kayaking through the inner canyon, with access that does not utilize the access routes within the ceiling of the general inner canyon access permit system, hence there would not likely be conflict of commercial use monopolizing private use. However, as with climbing, when this activity was analyzed through the wilderness filter, it was determined that guided kayaking is not necessary for realizing the purposes of wilderness or for protecting and enhancing the desired conditions for wilderness character for this zone. To maintain and improve opportunities for challenge, self-reliance, and adventure that are integral to the wilderness character of the inner canyon wilderness zone, guided kayaking would not be authorized.

Table 2. Commercial Services Filters for Black Canyon Uplands Zone (including subzones)										
Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas		
Black Canyon Uplands Zone (including subzones)										
1. Is the visitor activity appropriate in this zone (general public or commercial)?	YES	NO*	YES	NO*	NO*	NO**	YES	NO***		
Has this use been determined to be appropriate through applicable laws, regulations, policies, park purposes, and planning for desired future conditions for resources and visitor experiences?										
Go on to the next filter?	OK	STOP	OK	STOP	STOP	STOP	OK	STOP		
2. Commercial service for visitor activity – general: "Appropriate" per National Park Concession Policy (meets all)										
a. Services are consistent with the purposes and values for which the park was established, as well as applicable laws, regulations, and policies.	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
b. Services do not compromise public health, safety, or well-being	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
c. Services do not significantly impact important park resources and values.	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
d. Services do not unduly conflict with other authorized park uses and activities or services outside the park.	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
e. Services do not monopolize limited recreational opportunities at the expense of the general public.	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
Meets ALL criteria for "Appropriate"	YES	N/A	YES	N/A	N/A	N/A	YES	N/A		N/A
Go on to the next filter?	OK		OK				OK			
3. Commercial service for visitor activity: general: "Necessary" per National Park Concession Policy (meets one or more)										
a. Enhances visitor understanding and appreciation of park mission and values.	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
b. Facilitates or complements the fundamental experiences of park visitors.	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
c. Assists the park in managing visitor use and educating park visitors in appropriate, safe, and minimum-impact techniques	Meets	N/A	Meets	N/A	N/A	N/A	Meets	N/A		N/A
d. Is an essential visitor service or facility not available within a reasonable distance from the park.	Does not meet	N/A	Does not meet	N/A	N/A	N/A	Does not meet	N/A		N/A
Meets one or more of the "necessary" criteria	YES	N/A	YES	N/A	N/A	N/A	YES	N/A		N/A
Go on to the next filter?	OK		OK				OK			
4. Commercial Service - Wilderness: The Wilderness Act Section 4(d) (6) Commercial services may be performed within the wilderness areas										

Table 2. Commercial Services Filters for Black Canyon Uplands Zone (including subzones)

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
Black Canyon Uplands Zone (including subzones)								
designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.								
a. Extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas (recreation, scenic, scientific, educational, conservation, and historical use)	Yes	N/A	Yes	N/A	N/A	N/A	Yes	N/A
b. Does it protect and enhance desired conditions for wilderness character (the broader purpose of the Wilderness Act)?	Yes	N/A	Yes	N/A	N/A	N/A	Yes	N/A
c. Application of Minimum Requirement – If the first two criteria are met, what is the minimum activity necessary to achieve the goal?	Yes	N/A	Yes	N/A	N/A	N/A	Yes	N/A
Meets all of the wilderness criteria?	Yes	N/A	Yes	N/A	N/A	N/A	Yes	N/A
Is this commercial service appropriate and necessary in this zone?	Yes	No	Yes	No	No	No	Yes	No

- * There are no opportunities for climbing, fishing, or kayaking/boating in the uplands of Black Canyon.
- ** While horseback riding is appropriate for the general public on one trail in this zone, there is only the one trail and the opportunity is too limited for commercial services.
- *** The use of motorized vehicles in wilderness is prohibited.

Conclusions for Black Canyon – Uplands Zone (including uplands pristine wilderness, uplands primitive wilderness, and uplands backcountry zones)

There are presently no commercial services provided in the uplands zone. Visitors do not have opportunities for climbing, fishing, and kayaking/boating because of the terrain of the uplands. Hiking, camping and overnight use, horseback riding, and educational tours are available to the general public and meet the general criteria of necessary and appropriate for commercial services in the first two filters. When the wilderness filter is applied, the activities of hiking, camping and overnight use, and educational tours would protect and enhance the desired wilderness character in this zone, that these activities do meet the criteria of necessary for realizing the wilderness purposes of the area or for protecting and enhancing the desired conditions for wilderness character for this zone. This zone is peaceful, expansive, has opportunities for solitude. These commercial services could foster new opportunities for visitors with limited previous wilderness experience. There is only one horse trail, which does not make commercial use viable in this zone.

Table 3. Commercial Services Filters for Black Canyon – Gunnison Gorge Wilderness Zone

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
Black Canyon – Gunnison Gorge Wilderness Zone								
1. Is the visitor activity appropriate in this zone (general public or commercial)?								
Has this use been determined to be appropriate through applicable laws, regulations, policies, park purposes, and planning for desired future conditions for resources and visitor experiences?	YES	NO*	YES	YES	YES	NO**	YES	NO***
Go on to the next filter?	OK	STOP	OK	OK	OK	STOP	OK	STOP
2. Commercial service for visitor activity – general: "Appropriate" per National Park Concession Policy (meets all)								
a. Services are consistent with the purposes and values for which the park was established, as well as applicable laws, regulations, and policies.	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
b. Services do not compromise public health, safety, or well-being	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
c. Services do not significantly impact important park resources and values.	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
d. Services do not unduly conflict with other authorized park uses and activities or services outside the park.	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
e. Services do not monopolize limited recreational opportunities at the expense of the general public.	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
Meets ALL criteria for "Appropriate"	Yes	N/A	Yes	Yes	Yes	N/A	Yes	N/A
Go on to the next filter?	OK	N/A	OK	OK	OK	N/A	OK	N/A
3. Commercial service for visitor activity- general: "Necessary" per National Park Concession Policy (meets one or more)								
a. Enhances visitor understanding and appreciation of park mission and values.	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
b. Facilitates or complements the fundamental experiences of park visitors.	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
c. Assists the park in managing visitor use and educating park visitors in appropriate, safe, and minimum-impact techniques	Meets	N/A	Meets	Meets	Meets	N/A	Meets	N/A
d. Is an essential visitor service or facility not available within a reasonable distance from the park.	Does not meet	N/A	Does not meet	Does not meet	Does not meet	N/A	Meets	N/A
Meets one or more of the "necessary" criteria	YES	N/A	YES	YES	YES	N/A	YES	N/A
Go on to the next filter?	OK	N/A	OK	OK	OK	N/A	OK	N/A

Table 3. Commercial Services Filters for Black Canyon – Gunnison Gorge Wilderness Zone

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
Black Canyon – Gunnison Gorge Wilderness Zone								
4. Commercial Service - Wilderness: The Wilderness Act Section 4(d) (6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.								
a. Extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas (recreation, scenic, scientific, educational, conservation, and historical use)	Yes	N/A	Yes	Yes	Yes	N/A	Yes	N/A
b. Does it protect and enhance desired conditions for wilderness character (the broader purpose of the Wilderness Act)?	Yes	N/A	Yes	Yes	Yes	N/A	Yes	N/A
c. Application of Minimum Requirement – If the first two criteria are met, what is the minimum activity necessary to achieve the goal?	Minimal trails	N/A	No caches, designated camp sites	No caches	No caches	N/A	No signs	N/A
Meets all of the wilderness criteria?	Yes	N/A	Yes	Yes	Yes	N/A	Yes	N/A
Is this commercial service appropriate and necessary in this zone?	Yes	No	Yes	Yes	Yes	No	Yes	No

* There are no opportunities for climbing or horseback riding in this zone.

** The use of motorized vehicles in wilderness is prohibited.

Conclusions for Black Canyon – Gunnison Gorge Wilderness Zone

The desired condition for the inner canyon wilderness zone is similar to the Black Canyon – Inner Canyon Wilderness Zone (wild, natural, remote, challenging, and uncrowded), but offers more boating opportunities and self-reliance is less important. The adjacent BLM-managed Gunnison Gorge Wilderness is managed as an unmodified natural environment with opportunities for solitude while pursuing kayaking, gold-medal trout fishing, whitewater rafting, hiking, camping, picnicking, and wildlife watching. Some of the whitewater rafting activities in the lower gorge begin about 0.05 mile east of the BLM border within this Gunnison Gorge wilderness zone, which has been and will continue to be cooperatively managed.

There are currently private parties and commercial guides that use two designated campsites within NPS land to begin rafting, float fishing, or hiking/fishing trips that continue downstream. The rugged access road (outside of NPS wilderness) is unimproved; some gear is hauled by horseback to the river. As the majority of the trips that originate from these sites occur on BLM land, the Bureau of Land Management manages the commercial use authorizations and the permits for these campsites. One campsite is designated for boaters with a group size maximum of 12 for one night, and one site is designated for hikers with a group size limit of 12 with a two-night limit. Within this system, use is allocated on a first-come first-served basis between commercial guides and the public. It is seldom that public use is displaced by commercial guides.

Within this cooperative management zone, current commercial services for guided rafting, float fishing, and hiking/fishing trips heading downstream would continue. The Bureau of Land Management would continue to manage the commercial use authorizations and permits for the two campsites in consultation with the National Park Service. Proposals for commercial services for educational tours could be considered. The National Park Service and Bureau of Land Management would jointly manage recreation in this zone, blending regulations between the agencies to achieve maximum consistency for visitor enjoyment, resource protection, and preservation of wilderness character.

Table 4. Commercial Services Filters for Curcanti – East Portal – Morrow Point Zone

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
East Portal – Morrow Point Zone								
1. Is the visitor activity appropriate in this zone (general public or commercial)?								
Has this use been determined to be appropriate through applicable laws, regulations, policies, park purposes, and planning for desired future conditions for resources and visitor experiences?	YES	YES	YES	YES	YES	YES	YES	NO*
Go on to the next filter?	OK	OK	OK	OK	OK	OK	OK	STOP
2. Commercial service for visitor activity – general: "Appropriate" per National Park Concession Policy (meets all)								
a. Services are consistent with the purposes and values for which the park was established, as well as applicable laws, regulations, and policies.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	N/A
b. Services do not compromise public health, safety, or well-being	Meets	Meets	Crystal- Does not meet EP/MP- Meets	Crystal- Does not meet EP/MP- Meets	Crystal- Does not meet EP/MP- Meets	Crystal- Does not meet EP/MP- Meets	Meets	N/A
c. Services do not significantly impact important park resources and values.	Meets	Meets	Meets	Crystal/E P-Does not meet MP- Meets	Meets	Does not meet	Meets	N/A
d. Services do not unduly conflict with other authorized park uses and activities or services outside the park.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	N/A
e. Services do not monopolize limited recreational opportunities at the expense of the general public.	Meets	Meets	Does not meet	Meets	Meets	Meets	Meets	N/A
Meets ALL criteria for "Appropriate"	Yes	Yes	No	East Portal and Crystal Res. – No Morrow Point - Yes	Crystal Res. No East Portal- Morrow Point - YES	No	Yes	N/A

Table 4. Commercial Services Filters for Curcanti – East Portal – Morrow Point Zone

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
East Portal – Morrow Point Zone								
Go on to the next filter?	OK	OK	STOP	OK for Morrow Point	OK for East Portal-Morrow Point	STOP	OK	N/A
3. Commercial service for visitor activity- general: "Necessary" per National Park Concession Policy (meets one or more)								
a. Enhances visitor understanding and appreciation of park mission and values.	Meets	Meets	N/A	Meets	Meets	N/A	Meets	N/A
b. Facilitates or complements the fundamental experiences of park visitors.	Meets	Meets	N/A	Meets	Meets	N/A	Meets	N/A
c. Assists the park in managing visitor use and educating park visitors in appropriate, safe, and minimum-impact techniques	Meets	Meets	N/A	Meets	Meets	N/A	Meets	N/A
d. Is an essential visitor service or facility not available within a reasonable distance from the park.	Does not meet	Does not meet	N/A	Does not meet	Does not meet	N/A	Does not meet	N/A
Meets one or more of the "necessary" criteria	Yes	Yes	N/A	Morrow Point - Yes	East Portal - Morrow Point - Yes	N/A	Yes	N/A
Is this commercial service appropriate and necessary in this zone?	Yes	Yes	No	Yes at Morrow Point Res.	Yes at East Portal - Morrow Point	No	Yes	No
				No at East Portal and Crystal Res.	No at Crystal Res.			

* There are no designated trails or areas for off road vehicles in the East Portal – Morrow Point Zone.

Conclusions for Curecanti - East Portal – Morrow Point Zone

There are currently no commercial services on the land-based backcountry of the EPMP zone. There are no designated trails or areas for off road vehicles in the East Portal-Morrow Point Zone, per the current Curecanti NRA Off-Highway Vehicle Plan. The activities of hiking, climbing, and educational tours meet all of the criteria for necessary and appropriate commercial services, and could be authorized in the future. Due to unpredictable and swift water releases into Crystal Reservoir, public safety would be compromised for camping, fishing and boating in Crystal Reservoir. Due to the limited campsites available, guided camping or overnight use would monopolize the opportunities for the general public in this zone. Due to steep trails, horseback riding would negatively impact resources (e.g., soil erosion, vegetation loss). Based on recommendations from the Colorado Division of Wildlife, commercially guided fishing would significantly impact the fishery in East Portal. Proposals for necessary and appropriate commercial services would be evaluated with consideration of the goals of protecting and enhancing the natural and remote backcountry in this zone.

Table 5. Commercial Services Filters for Curecanti – Blue Mesa Zone

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
Curecanti – Blue Mesa Zone								
1. Is the visitor activity appropriate in this zone (general public or commercial)?								
Has this use been determined to be appropriate through applicable laws, regulations, policies, park purposes, and planning for desired future conditions for resources and visitor experiences?	YES	YES	YES	YES	YES	YES	YES	YES
Go on to thenext filter?	OK	OK	OK	OK	OK	OK	OK	OK
2. Commercial service for visitor activity – general: "Appropriate" per National Park Concession Policy (meets all)								
a. Services are consistent with the purposes and values for which the park was established, as well as applicable laws, regulations, and policies.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets
b. Services do not compromise public health, safety, or well-being	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets
c. Services do not significantly impact important park resources and values.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets
d. Services do not unduly conflict with other authorized park uses and activities or services outside the park.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets
e. Services do not monopolize limited recreational opportunities at the expense of the general public.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets
Meets ALL criteria for "Appropriate"	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Go on to the next filter?	OK	OK	OK	OK	OK	OK	OK	OK
3. Commercial service for visitor activity- general: "Necessary" per National Park Concession Policy (meets one or more)								
a. Enhances visitor understanding and appreciation of park mission and values.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets
b. Facilitates or complements the fundamental experiences of park visitors.	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Does not meet
c. Assists the park in managing visitor use and educating park visitors in appropriate, safe, and minimum-impact techniques	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets

Table 5. Commercial Services Filters for Curecanti – Blue Mesa Zone

Visitor Activity	Hiking	Climbing	Camping/ Overnight Use	Fishing	Kayaking/ Boating	Horseback Riding	Educa- tional Tours	ORVs on Designated Trails/Areas
Curecanti – Blue Mesa Zone								
d. Is an essential visitor service or facility not available within a reasonable distance from the park.	Does not meet	Does not meet	Does not meet	Does not meet	Meets	Meets	Does not meet	Does not meet
Meets one or more of the "necessary" criteria	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is this commercial service appropriate and necessary in this zone?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Conclusions for Curecanti - Blue Mesa Zone

Current commercial uses in the Blue Mesa backcountry zone include a commercial use authorization for horses. Necessary and appropriate commercial services for this zone include hiking, climbing, camping, fishing, boating and kayaking, horseback riding, educational tours, and off-highway vehicles on designated trails. Proposals would be evaluated with consideration of the goals of protecting and enhancing the natural and remote backcountry in this zone.

APPENDIX F: MINIMUM REQUIREMENTS DECISION GUIDE



United States Department of the Interior

NATIONAL PARK SERVICE
 Black Canyon of the Gunnison National Park
 Curecanti National Recreation Area
 102 Elk Creek
 Gunnison, Colorado 81230

IN REPLY REFER TO:

N1623 (BLCA)

October 6, 2010

MEMORANDUM

To: Wilderness Coordinator, Intermountain Region

From: Superintendent, Black Canyon of the Gunnison National Park and Curecanti National Recreation Area. *CAR*

Subject: Commitment to Minimum Requirement Decision Process within IMR Wilderness Parks

This is in response to the subject memorandum from the Regional Director dated 13 September 2010. Black Canyon of the Gunnison National Park uses the most current online version of the Minimum Requirement Decision Guide (MRDG) from the Carhart Center to evaluate activities proposed within the Black Canyon of the Gunnison Wilderness that involve prohibited uses.

The park has established a Wilderness Advisory Committee (WAC), which is comprised of representation from each Division. Proposed activities are brought to the WAC by the respective Project Sponsor or representative from the Division within which the proposed activity originates. The WAC then evaluates proposed activities, develops and evaluates alternatives, and makes recommendations to the park Management Team. Final approval of proposed activities resides with the Management Team and, ultimately, with the Superintendent, who signs the final MRDG Worksheet.

The park is working to improve staff understanding of what constitutes a prohibited use by increasing awareness and we hope to be able to conduct a Wilderness Unit course in the near future to further enhance that understanding.

**APPENDIX G:
MANAGING SCIENTIFIC AND RESEARCH ACTIVITIES IN WILDERNESS**

Appendix G
Managing Scientific and Research Activities In Wilderness
Black Canyon of the Gunnison National Park

Science and research are important activities at Black Canyon of the Gunnison National Park and its wilderness, providing valuable insight into the cultural and natural history of the canyon and the Colorado Plateau. Wilderness and science share a reciprocal bond. Science often yields important insights that help secure the long-term preservation of wild places for future generations. Conversely, designated wilderness serves to protect vast natural laboratories free from significant modification. Wilderness often provides the best baseline we have for understanding the full range of ecological systems and how they respond to a changing climate. This understanding can include, for example, how changing demography and distribution of plant and animal species, severity and timing of fire, and spread of insect and disease outbreaks are correlated with changing climate conditions.

Wilderness provides unique opportunities and unique challenges with respect to scientific activities and research. Scientific activities may result in some loss to wilderness character, such as through trammeling or development, or loss of natural quality. Managers make careful decisions about how to balance the benefits and impacts of each situation. Sometimes, science and research may have advantages that are uncertain in the present; here too, managers may be faced with difficult decisions to determine whether or not a scientific activity is necessary and appropriate in wilderness.

The statutory purposes of wilderness include scientific activities, and these activities are encouraged and permitted when consistent with NPS responsibilities to preserve wilderness character.

Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

Wilderness Act of 1964, Section 4(b)

Scientific activities can greatly benefit the resource, but should be thoroughly evaluated. Before granting a research permit, staff should consider (1) how necessary it is that the activity occur in wilderness (could it be done outside of wilderness?), (2) whether the researcher proposes to violate any of the section 4(c) prohibited uses in the Wilderness Act, (3) the impact of the research on wilderness character, (4) if/how the research will benefit the wilderness, and (5) the cumulative effect of all research activities being conducted within the wilderness.

The staff of Black Canyon of the Gunnison National Park is committed to fostering scientific activities consistent with preserving wilderness character. This guidance applies to universities, agencies, partners, and other entities proposing to do research within wilderness areas of the park, as well as NPS research and scientific activities.

Document Existing Activities

Black Canyon of the Gunnison National Park currently receives approximately five to ten applications for research per year. Unlike some of the larger national parks, this is a relatively modest and manageable number. However, it is important that past, present, and future scientific activities do not cause significant cumulative impacts. The first step will be to inventory current activities and installations and to the extent possible, enter that information into a GIS database. This tool will enable managers to understand the current extent, spatially, of scientific activities occurring in wilderness. This record will be updated annually to reflect new authorizations, as well as completed activities and installations that have been removed.

Communication

Black Canyon of the Gunnison National Park will provide prospective researchers with current information about doing research in wilderness, including:

- How and why working in wilderness is different.
- Understanding prohibited uses.
- The application and review process.
- Recommendations for fieldwork – for safety and for preserving wilderness character.

Research Permit Applications

All scientific investigations in Black Canyon of the Gunnison National Park require the issuance of a Scientific Research and Collecting Permit. Permit applications are completed online and are processed through the Resource Stewardship and Science Office of the park. Prospective investigators are encouraged to contact the research coordinator for additional guidance in advance of submitting an application. Permit applications undergo careful review to ensure that proposals comply with applicable laws and policies. Any project that proposes any prohibited use in wilderness also requires additional consultation with staff.

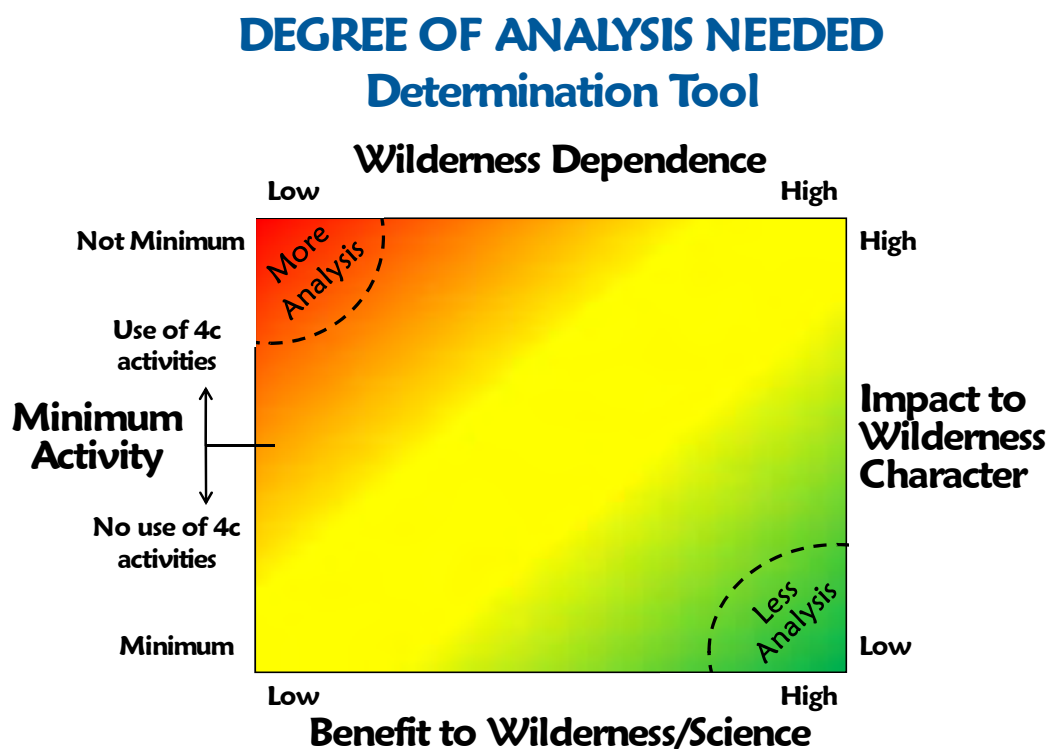
The Resource Stewardship and Science staff communicates with each applicant to review their proposal and evaluate the need and methodology for their project. Prohibited uses are allowable only when they constitute a “minimum requirement” toward the preservation of either the wilderness character or some enduring value inherent in it. The process used to determine whether or not such activity should be permitted is called the Minimum Requirement Analysis. During the first phase of this two-step process, projects are screened to determine if the proposed action is necessary, whether a nonwilderness site could meet project objectives, whether the project conflicts with long-term wilderness planning, and whether the project can be completed without involving nonprohibited uses.

Projects considered compatible with the long-term management of the wilderness then move to the second phase of the analysis where they are evaluated to determine the “minimum activity” necessary to meet the desired project objectives. When contemplating research projects in designated wilderness, scientists are encouraged to develop and propose projects with substantial consideration for the preservation of wilderness values and character, and the avoidance of all identified prohibited uses.

If proposals are approved to include temporary nonconforming items such as monitoring equipment, weather gauges, markers, and radio collars, the approved permit will specify a period of time that these items shall remain in wilderness, and provide a plan and commitment for removal of these items at the end of that time period.

Evaluation and Revision

An initial screening will be applied to research applications, so that the appropriate level of review and consultation will occur.



Proposals that have high benefit to wilderness and science and low impact to wilderness character will not require extensive review and consultation. Projects that have low benefit to science and wilderness and high impact to wilderness character will involve substantial review and consultation. Such proposals may require the use of a more rigorous evaluation framework that looks in more detail at benefits to wilderness character. Proposed prohibited uses will require a minimum requirements analysis and compliance with the National Environmental Policy Act. Through the application process, revisions to the location, methodology, and access may be made to improve the proposal and preserve wilderness character.

Monitoring Research Activities

Park managers will monitor permitted activities to ensure that they remain compliant with wilderness policy. Researchers will be informed of their duties to adhere to wilderness policies once their projects have been approved. Researchers should notify park managers of any alterations to original plans. Any change to the approved project must be evaluated and approved by the park manager before they are implemented. Methodologies for all long-term projects will be reviewed on a regular basis to determine if techniques are available that are more compatible with maintaining wilderness character.

Park managers will ensure that agreed upon removal of temporary, nonconforming items will be completed. Approved and completed projects will be added to the park GIS database for research and scientific activities and track cumulative impacts.

Sharing Results

The application of scientific results to wilderness stewardship is crucial in many instances, results whose value is not immediately apparent may prove to be invaluable to wilderness managers at a later date. For example, the results may serve as a basis to inform decisions and plan climate-change-related actions for adaptation, mitigation, and restoration. Such results may also be fundamental in informing decisions about desired conditions.

Research results can take many forms, and may or may not always be immediately applicable to wilderness. Examples of applicable results may include, but are not limited to:

- trends in local climate
- species range, distribution, movements, and potential range shifts in the face of climate change
- geological and hydrological changes (such as lowering water tables or melting glaciers)
- the presence of invasive species

It is the researcher's responsibility to provide timely presentation of the results to park managers, or provide timely updates of activities and ongoing findings in the case of long-term projects. It is also important that the results be presented to park managers in a way that assists their understanding of how the results may be relevant to management decisions. Researchers should explore opportunities to share results with visitors, the community, universities, other parks and agencies, and wider horizons.

APPENDIX H: AGENCY COORDINATION



United States Department of the Interior

NATIONAL PARK SERVICE
Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
102 Elk Creek
Gunnison, CO 81230



14 November 2010

Chairman Gary Hayes
Ute Mountain Ute Tribe
P.O. Box JJ
Towaoc, CO 81334

Dear Chairman Hayes,

The National Park Service is currently preparing management plans for the wilderness and backcountry of Black Canyon of the Gunnison National Park and Curecanti National Recreation Area near Gunnison, Colorado. We invite you for consultation to share your thoughts and perspectives on the undeveloped lands of these park areas. We want to identify and protect the special qualities of these wild lands, and your help would be appreciated.

Much of Black Canyon of the Gunnison National park has been designated by Congress as wilderness. Wilderness is a federal designation and added layer of protection, and lands are administered under the provisions of the Wilderness Act of 1964. Wilderness Areas are defined as "An area of undeveloped land retaining its primeval character and influence, without permanent improvements or habitation..." Other undeveloped land in Black Canyon and Curecanti that is not wilderness is classified as "backcountry." One main difference between wilderness and backcountry is that motorized equipment and mechanized transport is generally prohibited in wilderness. Another difference is that development such as shelters and cabins are generally not allowed in wilderness, and permanent roads and commercial enterprises are specifically prohibited in wilderness.

An overall goal of the plan is to preserve wilderness and backcountry character. There are specific issues such as impacts of camping on vegetation and soils, whether or not to continue the current visitor permit system for the inner canyon, impacts of climbing hardware, and opportunities for increased recreation in the backcountry. Public scoping was conducted last spring, and alternatives are being developed this fall. A newsletter is enclosed, providing more information. Nothing has yet been decided. We are inviting consultation for your past, present, and future perspectives on the wilderness and backcountry of Black Canyon and Curecanti. You are invited to visit the parks, or NPS staff could come to your offices. For further information or to arrange a meeting, please contact Forest Frost at 970-240-5433 or forest_frost@nps.gov.

Thank you for your consideration.


for Constance A. Rudd, Superintendent

Encl

cc: Terry Knight, Lynn Hartman



United States Department of the Interior

NATIONAL PARK SERVICE
Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
102 Elk Creek
Gunnison, CO 81230



14 November 2010

Chairman Matthew Box
Southern Ute Indian Tribe
356 Ouray Drive
P.O. Box 737
Ignacio, CO81137

Dear Chairman Box,

The National Park Service is currently preparing management plans for the wilderness and backcountry of Black Canyon of the Gunnison National Park and Curecanti National Recreation Area near Gunnison, Colorado. We invite you for consultation to share your thoughts and perspectives on the undeveloped lands of these park areas. We want to identify and protect the special qualities of these wild lands, and your help would be appreciated.

Much of Black Canyon of the Gunnison National park has been designated by Congress as wilderness. Wilderness is a federal designation and added layer of protection, and lands are administered under the provisions of the Wilderness Act of 1964. Wilderness Areas are defined as "An area of undeveloped land retaining its primeval character and influence, without permanent improvements or habitation..." Other undeveloped land in Black Canyon and Curecanti that is not wilderness is classified as "backcountry." One main difference between wilderness and backcountry is that motorized equipment and mechanized transport is generally prohibited in wilderness. Another difference is that development such as shelters and cabins are generally not allowed in wilderness, and permanent roads and commercial enterprises are specifically prohibited in wilderness.

An overall goal of the plan is to preserve wilderness and backcountry character. There are specific issues such as impacts of camping on vegetation and soils, whether or not to continue the current visitor permit system for the inner canyon, impacts of climbing hardware, and opportunities for increased recreation in the backcountry. Public scoping was conducted last spring, and alternatives are being developed this fall. A newsletter is enclosed, providing more information. Nothing has yet been decided. We are inviting consultation for your past, present, and future perspectives on the wilderness and backcountry of Black Canyon and Curecanti. You are invited to visit the parks, or NPS staff could come to your offices. For further information or to arrange a meeting, please contact Forest Frost at 970-240-5433 or forest_frost@nps.gov.

Thank you for your consideration.


Constance A. Rudd, Superintendent

Encl
cc. Neil Cloud



United States Department of the Interior

NATIONAL PARK SERVICE
Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
102 Elk Creek
Gunnison, CO 81230



14 November 2010

Chairman Richard Jenks, Jr.
Utah & Ouray Tribal Business Committee
P.O. Box 190
Ft. Duchesne, UT 84026

Dear Chairman Jenks,

The National Park Service is currently preparing management plans for the wilderness and backcountry of Black Canyon of the Gunnison National Park and Curecanti National Recreation Area near Gunnison, Colorado. We invite you for consultation to share your thoughts and perspectives on the undeveloped lands of these park areas. We want to identify and protect the special qualities of these wild lands, and your help would be appreciated.

Much of Black Canyon of the Gunnison National Park has been designated by Congress as wilderness. Wilderness is a federal designation and added layer of protection, and lands are administered under the provisions of the Wilderness Act of 1964. Wilderness Areas are defined as "An area of undeveloped land retaining its primeval character and influence, without permanent improvements or habitation..." Other undeveloped land in Black Canyon and Curecanti that is not wilderness is classified as "backcountry." One main difference between wilderness and backcountry is that motorized equipment and mechanized transport is generally prohibited in wilderness. Another difference is that development such as shelters and cabins are generally not allowed in wilderness, and permanent roads and commercial enterprises are specifically prohibited in wilderness.

An overall goal of the plan is to preserve wilderness and backcountry character. There are specific issues such as impacts of camping on vegetation and soils, whether or not to continue the current visitor permit system for the inner canyon, impacts of climbing hardware, and opportunities for increased recreation in the backcountry. Public scoping was conducted last spring, and alternatives are being developed this fall. A newsletter is enclosed, providing more information. Nothing has yet been decided. We are inviting consultation for your past, present, and future perspectives on the wilderness and backcountry of Black Canyon and Curecanti. You are invited to visit the parks, or NPS staff could come to your offices. For further information or to arrange a meeting, please contact Forest Frost at 970-240-5433 or forest_frost@nps.gov.

Thank you for your consideration,


Constance A. Rudd, Superintendent

Encl

cc: Betsy Chapoose



United States Department of the Interior

NATIONAL PARK SERVICE
Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
102 Elk Creek
Gunnison, Colorado 81230

IN REPLY REFER TO:

N1623 (BLCA/CURE)

November 17, 2010

Memorandum

To: Western Colorado Supervisor, Fish and Wildlife Service, Ecological Services, Grand Junction, Colorado

From: Chief of Resource Stewardship and Science, Black Canyon of the Gunnison National Park/Curecanti National Recreation Area *Ken Stahlman*

Subject: Black Canyon of the Gunnison National Park/Curecanti National Recreation Area Wilderness and Backcountry Management Plan

The National Park Service (NPS) proposes to develop and implement a Wilderness and Backcountry Management Plan for Black Canyon of the Gunnison National Park and Curecanti National Recreational Area, in Montrose and Gunnison Counties, Colorado. The purpose of this plan is to manage wilderness and backcountry areas in the national park and recreation area that protect and preserve natural and cultural resources and provide appropriate visitor use experiences consistent with wilderness, park, and recreation area purposes, NPS management policies, and other laws and regulations.

We are beginning our scoping and data-gathering efforts for the plan. I am requesting a current list of federally listed threatened or endangered species, species of concern, or any other special status species that might occur in the locality mentioned above, and designated critical habitats, if any, for these species.

This letter will serve as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended, and NPS Management Policies, 2006.

We appreciate your continuing assistance with NPS projects. We will be in contact with your office to continue our consultation responsibilities after we have had a chance to review the species list and develop preliminary management alternatives. Your assistance in this matter is appreciated. If you have additional questions concerning this issue, please contact me at (970) 641-2337 ext. 225.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
764 Horizon Drive, Building B
Grand Junction, Colorado 81506-3946



IN REPLY REFER TO:
ES/CO/NPS
TAILS 65413-2011-TA-0019



December 16, 2010

Memorandum

To: Chief of Resource Stewardship and Science, Black Canyon of the Gunnison National Park/Curecanti National Recreation Area (BCNP/CNRA)

From: Western Colorado Supervisor, Fish and Wildlife Service, Ecological Services, Grand Junction, Colorado *Robert P. Kwan*

Subject: BCNP/CNRA Wilderness and Backcountry Management Plan Species List

The Fish and Wildlife Service (Service) has reviewed your November 17, 2010, request for a species list for the subject project. The species are as follows:

ENDANGERED SPECIES

Bonytail	<i>Gila elegans</i>
Colorado pikeminnow	<i>Ptychocheilus lucius</i>
Humpback Chub	<i>Gila cypha</i>
Razorback sucker	<i>Xytrichthys texanus</i>

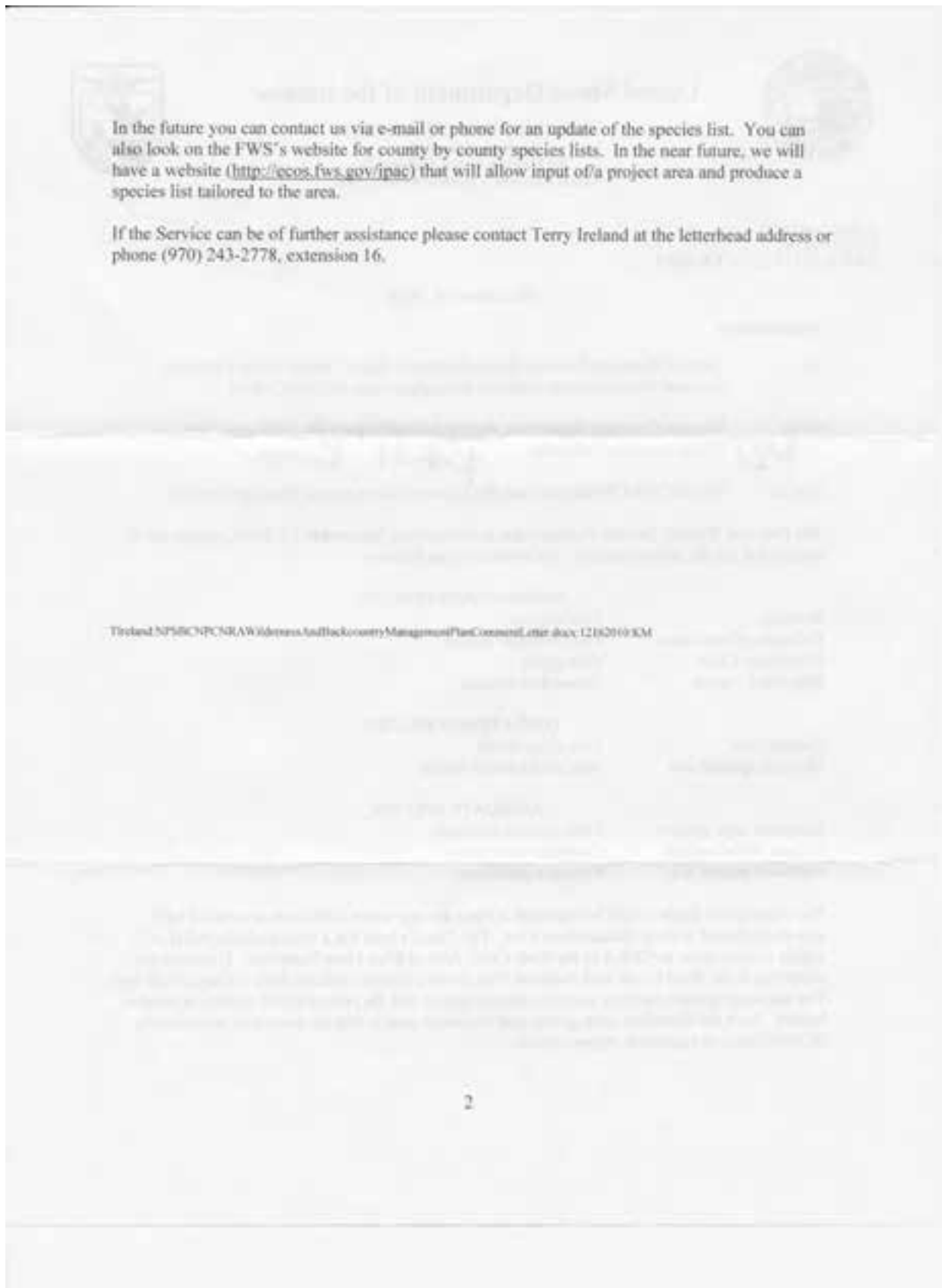
THREATENED SPECIES

Canada lynx	<i>Lynx Canadensis</i>
Mexican spotted owl	<i>Strix occidentalis lucida</i>

CANDIDATE SPECIES

Gunnison sage-grouse	<i>Centrocercus minimus</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Gunnison prairie dog	<i>Cynomys gunnisoni</i>

The endangered fishes would be impacted if there are any water depletions associated with actions proposed in your Management Plan. The Canada lynx has a lynx analysis unit (LAU) within or very close to CNRA in the Soap Creek Arm of Blue Mesa Reservoir. If actions are occurring in the Soap Creek area National Park Service should evaluate them for impacts to lynx. The Mexican spotted owl may occur in canyon habitat and the yellow-billed cuckoo in riparian habitat. Both the Gunnison sage-grouse and Gunnison prairie dog are known to occur within BCNP/CNRA in sagebrush steppe habitat.





United States Department of the Interior

NATIONAL PARK SERVICE
Black Canyon of the Gunnison National Park
Curecanti National Recreation Area
102 Elk Creek
Gunnison, CO 81230



May 9, 2011

Edward C. Nichols
State Historic Preservation Officer
Office of Archaeology and Historic Preservation
1560 Broadway
Suite 400
Denver, CO 80202

Subject: Wilderness & Back Country Management Plan –
Black Canyon of the Gunnison National Park/Curecanti National Recreation Area,
Montrose and Gunnison Counties, Colorado

The staff at Black Canyon of the Gunnison National Park/Curecanti National Reaction Area and the regional National Park Service (NPS) staff in Denver are preparing a plan for the management of wilderness and backcountry of Black Canyon of the Gunnison National Park and Curecanti National Recreation Area in Gunnison and Montrose counties. This plan constitutes an undertaking as defined in 36CFR800.16(y). An overall goal of the plan is to preserve wilderness and backcountry character.

The role of the plan is to establish a general management strategy, not to establish specific locations for actions that would impact specific eligible properties. Any undertaking that results from the implementation of the plan, which might involve ground disturbance or alteration of an historic structure, will have an individual compliance component for that undertaking.

Therefore, we feel that the Wilderness and Backcountry Management Plan has no potential to cause effect to cultural properties located in the two National Parks Service units. Pursuant to 36CFR800.3(a)(1) this finding would negate the requirement of the agency to pursue the Section 106 process. We seek comment and/or concurrence from your office with this approach to the Section 106 compliance process.

For further information please contact Forest Frost at 970-240-5433 or forest_frost@nps.gov.

Sincerely,

A handwritten signature in cursive script that reads "Constance A. Rudd". The signature is written in black ink and is positioned above the typed name.

Constance A. Rudd, Superintendent
Curecanti National Recreation Area/
Black Canyon of the Gunnison National Park

APPENDIX I: IMPAIRMENT STATEMENT

**APPENDIX I
IMPAIRMENT DETERMINATION**

THE PROHIBITION ON IMPAIRMENT OF PARK RESOURCES AND VALUES

NPS *Management Policies 2006*, section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

WHAT IS IMPAIRMENT?

NPS *Management Policies 2006*, Section 1.4.5, *What Constitutes Impairment of Park Resources and Values*, and Section 1.4.6, *What Constitutes Park Resources and Values*, provide an explanation of impairment.

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 those resources or values.

Section 1.4.5 of *Management Policies 2006* states:

An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects 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 to opportunities for enjoyment of the park.
- Identified as a goal in the park's general management plan or other relevant NPS planning documents as being of significance.

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

Per section 1.4.6 of *Management Policies 2006*, park resources and values that may be impaired include:

- The park's scenery, natural and historic objects, and wildlife, and the processes and condition 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, structure, 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.
- Any additional attributes encompassed by the specific values and purposes for which the park was established.

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park, but this would not be a violation of the Organic Act unless the National Park Service was in some way responsible for the action.

HOW IS AN IMPAIRMENT DETERMINATION MADE?

Section 1.4.7 of *Management Policies 2006* states, "[i]n making a determination of whether there would be an impairment, an NPS decision maker must use his or her professional judgment. This means that the decision-maker must consider any environmental assessments or environmental impact statements required by the National Environmental Policy Act of 1969; consultations required under section 106 of the National Historic Preservation Act; relevant scientific and scholarly studies; advice or insights offered by subject matter experts and others who have relevant knowledge or experience; and the results of civic engagement and public involvement activities relating to the decision."

Management Policies 2006 further define "professional judgment" as "a decision or opinion that is shaped by study and analysis and full consideration of all the relevant facts, and that takes into account the decision-maker's education, training, and experience; advice or insights offered by subject matter experts and others who have relevant knowledge and experience; good science and scholarship; and, whenever appropriate, the results of civic engagement and public involvement activities relation to the decision."

IMPAIRMENT DETERMINATION FOR THE PREFERRED ALTERNATIVE

This determination on impairment has been prepared for the preferred alternative described beginning on page 35 of this environmental assessment. An impairment determination is made for all resource impact topics analyzed for the preferred alternative. An impairment determination is not made for visitor experience and park operations because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be 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. In addition, an impairment determination is not made for topics dismissed from further analysis which include geologic and paleontological resources; floodplains; prime and unique farmlands; ecologically critical areas and unique natural areas; hydrology and water quality; air quality; socioeconomic; land use; environmental justice; cultural landscapes; historic buildings, structures, and districts; archeological resources; museum collections; ethnographic resources; Indian trust resources; lightscares and dark skies; scenic resources; soundscares; climate change; and energy requirements and conservation potential.

FINDINGS ON IMPAIRMENT FOR SOILS

Many of the visitor use, grazing, research, monitoring, and management actions that are currently affecting soils would remain the same with the existing level of impact. Actions associated with the preferred alternative that would have the potential to affect soils and biotic crusts include new trail development, increased recreational opportunities, and implementing management strategies when necessary. Overall, the preferred alternative would have short- and long-term negligible to minor adverse and beneficial impacts to soils of Black Canyon NP and Curecanti NRA.

Because there would be no major adverse impacts to soils, the preferred alternative would not result in impairment of soils. The preferred alternative would not contribute substantially to the deterioration of park soils to the extent that the park's natural processes and environment would no longer function as a natural system or be significantly degraded. The adverse impacts to soils would not contribute to deterioration of park resources and values to the extent that the park's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the park's general management plan or other park planning documents. The soils and biotic crusts of Black Canyon NP and Curecanti NRA would generally remain intact and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions.

FINDINGS ON IMPAIRMENT FOR WILDLIFE

Many of the visitor use and management actions that are currently affecting wildlife would remain the same. Actions associated with the preferred alternative that would have the potential to affect wildlife include new trail development, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary. Interpretive information

prepared under the proposed plan to educate the user public concerning wildlife species, behavior, life cycles, and habitats would reduce impacts. Adverse impacts of trail construction and use would be mitigated to a negligible level by planning routes to avoid important wildlife habitat, control erosion using best management practices, and monitor and control nonnative plant species along new trails. Overall the preferred alternative would have short- and long-term, negligible to minor, adverse and beneficial impacts to wildlife and habitat of Black Canyon NP and Curecanti NRA.

Because there would be no major adverse impacts to wildlife, the preferred alternative would not result in impairment to wildlife. The preferred alternative would not contribute to the deterioration of park wildlife resources and values to the extent that the park's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the park's general management plan or other park planning documents. The wildlife within Black Canyon NP and Curecanti NRA would generally remain undisturbed and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions for wildlife species.

FINDINGS ON IMPAIRMENT FOR VEGETATION

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA. Many of the visitor use, grazing, research, monitoring, and management actions that are currently affecting vegetation would remain the same with the existing level of impact. Actions associated with the preferred alternative that would have the potential to affect vegetation include new trail development, change in use of existing trails, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary. Overall, there would be short- and long-term negligible to minor, adverse and beneficial impacts to upland vegetation within Black Canyon NP and Curecanti NRA under the preferred alternative.

Because there would be no major adverse impacts to vegetation, the preferred alternative would not result in impairment to vegetation. The preferred alternative would not contribute substantially to the deterioration of park vegetation to the extent that the park's vegetation would no longer function as a natural system. In addition, these adverse impacts to park resources and values would not contribute to deterioration of these resources to the extent that the park's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the park's general management plan or other park planning documents. The vegetation that has become established on Black Canyon NP and Curecanti NRA would generally remain intact and would be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions for native and nonnative plant species.

FINDINGS ON IMPAIRMENT FOR WETLANDS

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities at Black Canyon NP and Curecanti NRA. Many of the visitor use, grazing, research monitoring, and management actions that are currently affecting wetlands would remain the same. Actions associated with the preferred alternative that would have the potential to affect wetlands include new trail development, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary. Potential new trail construction would be located to avoid wetlands; however a small but unknown area of wetland and riparian woodland and shrubland habitat could be disturbed. Overall, the preferred alternative would have short- and long-term negligible to minor adverse and beneficial impacts to wetlands and riparian communities within Black Canyon NP and Curecanti NRA.

Because there would be no major adverse impacts to wetlands, the preferred alternative would not result in impairment to wetlands. The preferred alternative would not contribute to the deterioration of the park's wetlands to the extent that they would no longer function as a part of the natural system. In addition, the adverse impacts on the park's resources and values would not contribute to deterioration of wetland resources and values to the extent that the park's and national recreation area's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the park's general management plan or other park planning documents. Wetlands would generally remain intact and be managed under the proposed Wilderness and Backcountry Management Plan and existing general, resource, and fire management plan provisions for native and nonnative plant species.

FINDINGS ON IMPAIRMENT FOR THREATENED, ENDANGERED, AND SPECIES OF SPECIAL CONCERN

The preferred alternative combines a series of defined actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities within Black Canyon NP and Curecanti NRA. Many of the visitor use and management actions that are currently affecting TES and species of special concern would remain the same. Actions associated with the preferred alternative that would have the potential to affect TES and species of special concern include new trail development, increased recreational opportunities, and implementing monitoring indicators and standards for changes in wilderness and backcountry character and implementing management strategies when necessary. In general, adverse impacts of trail construction and use would be mitigated by planning locations to avoid TES and species of special concern habitat, control erosion using best management practices, and monitor and control nonnative plant species along new trails. Overall, the preferred alternative would have short- and long-term negligible adverse and beneficial impacts to TES and species of special concern and habitat of Black Canyon NP and Curecanti NRA.

Because there would be no major adverse impacts to TES and species of special concern, the preferred alternative would not result in impairment to TES or species of special concern. The

preferred alternative would not contribute to the deterioration of the park's TES and species of special concern to the extent that they would no longer function as a part of the natural system. In addition, the adverse impacts on the park's resources and values would not contribute to deterioration of TES or species of special concern resources, habitat, and values to the extent that the park's and national recreation area's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the park's general management plan or other park planning documents.

FINDINGS ON IMPAIRMENT FOR WILDERNESS AND BACKCOUNTRY CHARACTER

The preferred alternative combines existing programs, actions, management zoning, and adaptive management strategies to proactively protect and enhance the backcountry and wilderness resources and opportunities at Black Canyon NP and Curecanti NRA. Active and ongoing monitoring of critical indicators, used in conjunction with established standards, would provide a basis to identify trends in wilderness character and qualities thereby providing management with vital information to identify, prioritize and implement strategies to protect resources and wilderness character.

Overall, wilderness qualities in Black Canyon NP are currently high and would remain high. The preferred alternative represents a consistent and monitored approach to wilderness and backcountry character and quality management and would result in negligible to moderate short-and long-term beneficial impacts to wilderness and backcountry qualities and character in Black Canyon NP.

Overall, backcountry qualities in Curecanti NRA range from low to high. The preferred alternative represents a consistent and monitored approach to backcountry character and quality management and would result in negligible to minor short-and long-term beneficial and minor long-term adverse impacts to backcountry character in Curecanti NRA.

The preferred alternative represents more active and consistent management of wilderness and backcountry character. It would not result in adverse impacts that render the designated, eligible, and potentially eligible wilderness lands as no longer able to meet the criteria for designation.

Because there would be no major adverse impacts to wilderness and backcountry (designated, eligible, or potentially eligible), the preferred alternative would not result in impairment to wilderness and backcountry character. The preferred alternative would not contribute to the deterioration of the park's wilderness and backcountry character, qualities and values to the extent that they would no longer meet criteria for designation. In addition, the adverse impacts on park resources and values would not contribute to deterioration of wilderness or backcountry resources and values to the extent that the park's purpose could not be fulfilled as established in its enabling legislation; affect resources key to the park's natural or cultural integrity or opportunities for enjoyment; or affect the resource whose conservation is identified as a goal in the park's general management plan or other park planning documents. The wilderness and backcountry character would be managed under the proposed Wilderness and Backcountry Management Plan and existing general and resource plans.

APPENDIX J: SOIL ASSOCIATIONS

Appendix J: Soil Associations

Soil associations that have been classified for Black Canyon NP and Curecanti NRA (NRCS 1975, 1982) include:

1. Evanston-Gas Creek-Irim association: deep, nearly level to strongly sloping, well-drained, somewhat poorly drained, and poorly drained loams and sandy loams on flood plains, terraces, and alluvial fans. Occurs along the Gunnison River and Cebolla Creek in Curecanti NRA. The soils formed in alluvium derived from mixed rock sources.
2. Billings-Christianburg association: deep, nearly level to gently sloping, fine textured and moderately fine textured soils on alluvial fans, floodplains, and terraces.
3. Parlin-Lucky-Hopkins association: deep and moderately deep, moderately sloping to steep, well-drained channery loams and gravelly sandy loams on hills, mountains, ridges, and benches. Occurs on hills and mountains dissected by valleys and swales creating complex slopes and exposures. The soils formed in material weathered from rhyolite, tuff, gneiss, and schist.
4. Chipeta-Persayo association: shallow, nearly level, gently sloping, and hilly, fine textured and moderately fine textured soils derived from shale.
5. Vulcan-Wetterhorn-Ruby association: deep and moderately deep, moderately sloping to steep, well-drained gravelly sandy loams and stony loams on mountains, ridges, and mesas. Occurs on uplands above 8,500 ft in elevation. The soils formed in material derived from fine-grained igneous rocks.
6. Posant-Woodhall-Stony Rock Land association: shallow and moderately deep, moderately sloping to very steep, well-drained gravelly loams and stony and rocky areas in mountains, hills, and ridges. Occurs along Cebolla Creek and the Lake Fork of the Gunnison River above 8,000 ft in elevation. The soils formed in material derived from fine-grained igneous rocks.
7. Shule-Youman-Passar association: moderately deep and deep, strongly sloping to steep, well-drained loams on alluvial fans, hills, ridges, and mountains. Occurs on rounded hills and ridges paralleled by valleys draining to the Gunnison River; rock outcrops occur along entrenched drainageways. The soils formed in materials derived from rhyolite and tuff.
8. Rock outcrop-Travesilla association: bare rock outcrop and shallow, rolling to steep, moderately coarse textured soils on hills, ridges, and sides of mesas.
9. Lamphier-Hapgood families: moderately deep and deep, well-drained, moderately fine to medium textured, nearly level to steep soils on upland hills, ridges, and mountain slopes. Occurs over 8,400 ft in elevation. The soils formed in residuum and colluvium derived from interbedded sandstone and shale.
10. Lamphier-Hoosan families: deep, well-drained, moderately fine to fine-textured, gently sloping to moderately steep soils on hilltops and hillsides. Occurs over 8,400 ft in elevation. The soils formed in residuum and loess over slope alluvium derived from interbedded sandstone and shale.

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11. Kubler-Delson-Cerro families: deep, well-drained, fine to moderately fine-textured, nearly level to steep soils on plateau tops, alluvial fans, and mountain footslopes and toeslopes. Occurs over 7,400 ft in elevation. The soils formed in alluvium, residuum, and colluvium derived from interbedded sandstone and shale.
12. Delson, moderately deep-Chilson-Dough families: deep to shallow, well-drained, moderately fine and coarse-textured, nearly level to steep soils on mesa tops and side slopes. Occurs over 7,200 ft elevation. The soils formed in loess and residuum and colluviums derived from interbedded sandstone and shale.
13. Jodero-Sawcreek-Dough families: deep to shallow, well drained, moderately fine and coarse-textured, nearly level to strongly sloping soils on valley bottoms, plateau tops, and benches. Occurs over 7,200 ft in elevation. The soils formed in alluvium and residuum derived from sandstone and shale.
14. Mirand Family-Arabrab Family-Chilson Variant: deep to shallow, well-drained, moderately fine-textured, nearly level to steep soils on plateau tops, structural benches, mesa tops, and mesa side slopes. Occurs over 6,400 ft in elevation. The soils formed in mixed loess, alluvium, and residuum derived from interbedded sandstone and shale.
15. Arabrab-Durango families: shallow to deep, well drained, moderately fine-textured, nearly level to strongly sloping soils on mesa tops and structural benches. Occurs over 6,400 ft in elevation. The soils formed in residuum and colluvium derived from interbedded sandstone and shale.

Range sites have been described for the soil associations relative to their landscape position and elevation within Black Canyon NP and Curecanti NRA, as follows:

- (1) Dry Mountain Loam
- (2) Mountain Loam
- (3) Mountain Outwash
- (4) Mountain Meadow
- (5) Mountain Swale
- (6) Deep Clay Loam (USDA-SCS 1975, 1982)

Range sites and soil associations are distributed on local topographic features including: the edges of Dillon, Sapinero, Soap, Blue, Black, Fitzpatrick, Deadhorse, and Vernal mesas; Mesa Inclinado; Poison, Buttermilk, and Grizzly ridges; Pleasant Park; and Green Mountain (NPS 2004, 2006). Alluvial soils have developed in the floodplains and valleys of the Gunnison and Cimarron rivers; the creeks named Beaver, South Beaver, Steuben, Willow, Stevens, Dry, Red, Cebolla, West Elk, Coal, Soap, Lake Fork, Pine, Corral, Blue, Curecanti, Round Corral, Mesa, Crystal, and Red Rock; the gulches named Dry, Myers, Deadhorse, Grizzly, and Son-of-a-Gun; and Jones and Pinon Springs draws.

**APPENDIX K:
LIST OF ECOLOGICAL SYSTEMS, VEGETATION ALLIANCES, AND
PLANT ASSOCIATIONS**

Appendix K: List of Ecological Systems, Vegetation Alliances, and Plant Associations

(Including Plant Communities) Combined for Black Canyon of the Gunnison National Park and Curecanti National Recreation Area [Sources: NPS-NVIP 2010a, 2010b]

The ecological system classification addresses natural landscapes; 16 ecological systems (ESs) occur within Black Canyon NP and 21 ESs occur within Curecanti National Recreation Area vegetation mapping project areas, accounting for overlap 23 ESs occur in both units (in alphabetic order with NatureServe (2010) identifying codes CESxxx.xxx):

- Colorado Plateau Hanging Garden (CES304.764)
- Colorado Plateau Mixed Low Sagebrush Shrubland (CES304.762)
- Colorado Plateau Pinyon-Juniper Woodland (CES304.767)
- Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland (CES304.776)
- Inter-Mountain Basins Big Sagebrush Shrubland (CES304.777)
- Inter-Mountain Basins Greasewood Flat (CES304.780)
- Inter-Mountain Basins Mixed Salt Desert Scrub (CES304.784)
- Inter-Mountain Basins Montane Sagebrush Steppe (CES304.785)
- Inter-Mountain Basins Semi-Desert Grassland (CES304.787)
- Inter-Mountain Basins Semi-Desert Shrub-Steppe (CES304.788)
- Inter-Mountain Basins Shale Badland (CES304.789)
- Rocky Mountain Alpine-Montane Wet Meadow (CES306.812)
- Rocky Mountain Aspen Forest and Woodland (CES306.813)
- Rocky Mountain Cliff, Canyon and Massive Bedrock (CES306.815)
- Rocky Mountain Gambel Oak-Mixed Montane Shrubland (CES306.818)
- Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland (CES306.821)
- Rocky Mountain Lower Montane-Foothill Shrubland (CES306.822)
- Rocky Mountain Subalpine-Montane Riparian Shrubland (CES306.832)
- Rocky Mountain Subalpine-Montane Riparian Woodland (CES306.833)
- Southern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Woodland (CES306.823)
- Southern Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland (CES306.825)
- Southern Rocky Mountain Montane-Subalpine Grassland (CES306.824)
- Southern Rocky Mountain Ponderosa Pine Woodland (CES306.648)

Vegetation alliances represent aggregations of plant associations that are physiognomically uniform and share one or more characteristic or diagnostic species; 33 vegetation alliances occur within the Park and 58 vegetation alliances occur within the Recreation Area vegetation mapping project areas, accounting for overlap 57 vegetation alliances occur in both units (in alphabetic order with NatureServe (2010) identifying codes (A.xxxx) and the ^w superscript indicating the type is a wetland or riparian wetland):

- ^w *Acer negundo* Seasonally Flooded Forest Alliance [Box-elder Seasonally Flooded Forest

- Alliance] (A.341)
- ^w*Acer negundo* Temporarily Flooded Forest Alliance [Box-elder Temporarily Flooded Forest Alliance] (A.278)
 - ^w*Acer negundo* Temporarily Flooded Woodland Alliance [Box-elder Temporarily Flooded Woodland Alliance] (A.642)
 - *Achnatherum hymenoides* Herbaceous Alliance [Indian Ricegrass Herbaceous Alliance] (A.1262)
 - ^w*Alnus incana* Seasonally Flooded Shrubland Alliance [Gray Alder Seasonally Flooded Shrubland Alliance] (A.986)
 - ^w*Alnus incana* Temporarily Flooded Shrubland Alliance [Gray Alder Temporarily Flooded Shrubland Alliance] (A.950)
 - *Amelanchier utahensis* Shrubland Alliance [Utah Serviceberry Shrubland Alliance] (A.916)
 - ^w*Aquilegia micrantha* Saturated Hanging Garden Herbaceous Alliance [Mancos Columbine Saturated Hanging Garden Herbaceous Alliance] (A.2506)
 - *Artemisia frigida* Dwarf-shrubland Alliance [Fringed Sagebrush Dwarf-shrubland Alliance] (A.2565)
 - *Artemisia nova* Shrubland Alliance [Black Sagebrush Shrubland Alliance] (A.1105)
 - *Artemisia tridentata* Shrubland Alliance [Basin Big Sagebrush Shrubland Alliance] (A.829)
 - *Artemisia tridentata* (ssp. *tridentata*, ssp. *xericensis*) [(Basin Big Sagebrush, Foothill Big Sagebrush) Shrubland Alliance] (A.830)
 - *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance [Mountain Big Sagebrush Shrubland Alliance] (A.831)
 - *Artemisia tridentata* ssp. *vaseyana* Shrub Herbaceous Alliance [Mountain Big Sagebrush Shrub Herbaceous Alliance] (A.1526)
 - *Artemisia tridentata* ssp. *wyomingensis* Shrubland Alliance [Wyoming Big Sagebrush Shrubland Alliance] (A.832)
 - *Atriplex canescens* Shrubland Alliance [Fourwing Saltbush Shrubland Alliance] (A.869)
 - *Atriplex confertifolia* Shrubland Alliance [Shadscale Shrubland Alliance] (A.870)
 - *Atriplex corrugata* Dwarf-shrubland Alliance [Mat Saltbush Dwarf-shrubland Alliance] (A.1109)
 - *Atriplex gardneri* Dwarf-shrubland Alliance [Gardner's Saltbush Dwarf-shrubland Alliance] (A.1110)
 - *Carex duriuscula* Herbaceous Alliance [Needleleaf Sedge Herbaceous Alliance] (A.1283)
 - ^w*Carex (rostrata, utriculata)* Seasonally Flooded Herbaceous Alliance [(Beaked Sedge, Northwest Territory Sedge) Seasonally Flooded Herbaceous Alliance] (A.1403)
 - *Ceanothus (fendleri, velutinus)* Shrubland Alliance [(Fendler's Buckbrush, Tobacco-brush) Shrubland Alliance] (A.787)
 - *Cercocarpus montanus* Shrubland Alliance [Alderleaf Mountain-mahogany Shrubland Alliance] (A.896)
 - *Chrysothamnus viscidiflorus* Shrubland Alliance [Yellow Rabbitbrush Shrubland Alliance] (A.2651)
 - ^w*Cornus sericea* Temporarily Flooded Shrubland Alliance [Red-osier Dogwood Temporarily Flooded Shrubland Alliance] (A.968)
 - *Ericameria nauseosa* Shrubland Alliance [Rubber Rabbitbrush Shrubland Alliance] (A.835)
 - *Ericameria parryi* Shrubland Alliance [Parry's Rabbitbrush Shrubland Alliance] (A.818)
 - *Hesperostipa comata* Bunch Herbaceous Alliance [Needle-and-thread Bunch Herbaceous

- Alliance] (A.A.1270)
- ^w *Hordeum jubatum* Temporarily Flooded Herbaceous Alliance [Foxtail Barley Temporarily Flooded Herbaceous Alliance] (A.1358)
 - ^w *Juncus balticus* Seasonally Flooded Herbaceous Alliance [Baltic Rush Seasonally Flooded Herbaceous Alliance] (A.1374)
 - *Juniperus osteosperma* Woodland Alliance [Utah Juniper Woodland Alliance] (A.536)
 - *Juniperus scopulorum* Woodland Alliance [Rocky Mountain Juniper Woodland Alliance] (A.506)
 - *Krascheninnikovia lanata* Dwarf-shrubland Alliance [Winterfat Dwarf-shrubland Alliance] (A.1104)
 - *Leymus cinereus* Herbaceous Alliance [Great Basin Wildrye Herbaceous Alliance] (A.1204)
 - *Leymus salinus* Sparsely Vegetated Alliance [Saline Wildrye Sparsely Vegetated Alliance] (A.1258)
 - *Pascopyrum smithii* Herbaceous Alliance [Western Wheatgrass Herbaceous Alliance] (A.1232)
 - *Picea pungens* Forest Alliance [Blue Spruce Forest Alliance] (A.165)
 - *Pinus edulis*– (*Juniperus* spp.) Woodland Alliance [Two-needle Pinyon - (Juniper species) Woodland Alliance] (A.596)
 - *Pinus ponderosa* Woodland Alliance [Ponderosa Pine Woodland Alliance] (A.530)
 - ^w *Phalaris arundinacea* Seasonally Flooded Herbaceous Alliance [Reed Canarygrass Seasonally Flooded Herbaceous Alliance] (A.1381)
 - *Pleuraphis jamesii* Herbaceous Alliance [James' Galleta Herbaceous Alliance] (A.1287)
 - *Poa fendleriana* Herbaceous Alliance [Muttongrass Herbaceous Alliance] (A.1336)
 - *Poa secunda* Seasonally Flooded Herbaceous Alliance [Sandberg Bluegrass Seasonally Flooded Herbaceous Alliance] (A.1410)
 - ^w *Populus angustifolia* Temporarily Flooded Forest Alliance [Narrowleaf Cottonwood Temporarily Flooded Forest Alliance] (A.310)
 - ^w *Populus angustifolia* Temporarily Flooded Woodland Alliance [Narrowleaf Cottonwood Temporarily Flooded Woodland Alliance] (A.641)
 - *Populus tremuloides* Forest Alliance [Quaking Aspen Forest Alliance] (A.274)
 - *Populus tremuloides* Seasonally Flooded Forest Alliance [Quaking Aspen Seasonally Flooded Forest Alliance] (A.340)
 - *Populus tremuloides* Temporarily Flooded Forest Alliance [Quaking Aspen Temporarily Flooded Forest Alliance] (A.300)
 - ^w *Prunus virginiana* Shrubland Alliance [Chokecherry Shrubland Alliance] (A.919)
 - *Pseudotsuga menziesii* Forest Alliance [Douglas-fir Forest Alliance] (A.157)
 - *Pseudotsuga menziesii* Woodland Alliance [Douglas-fir Woodland Alliance] (A.552)
 - *Quercus gambelii* Shrubland Alliance [Gambel Oak Shrubland Alliance] (A.920)
 - Rock Outcrop Sparsely Vegetated Alliance [Rock Outcrop Sparsely Vegetated Alliance] (A.1838)
 - ^w *Salix (exigua, interior)* Temporarily Flooded Shrubland Alliance [(Coyote Willow, Sandbar Willow) Temporarily Flooded Shrubland Alliance] (A.947)
 - ^w *Salix geyeriana* Seasonally Flooded Shrubland Alliance [Geyer's Willow Seasonally Flooded Shrubland Alliance] (A.1006)
 - ^w *Salix geyeriana* Temporarily Flooded Shrubland Alliance [Geyer's Willow Temporarily Flooded Shrubland Alliance] (A.975)

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- *Sarcobatus vermiculatus* Shrubland Alliance [Greasewood Shrubland Alliance] (A.1041)

Plant associations represent a plant community or type with a consistent species composition, uniform physiognomy, and homogenous habitat conditions. Plant associations are separated from the vegetation alliance through the use of total floristic composition and are named by the most dominant and/or indicator species and are determined by environmental patterns and disturbance processes; 77 plant associations occur within Black Canyon NP and 131 plant associations occur within Curecanti National Recreation Area vegetation mapping project areas, accounting for overlap 153 plant associations occur in both units (in alphabetic order with NatureServe (2010) identifying codes (CEGL00xxxx) when available/assigned and the ^w superscript indicating the type is a wetland or riparian wetland):

- ^w*Acer negundo* / *Cornus sericea* Forest [Box-elder / Red-osier Dogwood Forest] (CEGL000625)
- ^w*Acer negundo* / Disturbed Understory Woodland [Box-elder / Disturbed Understory Woodland] (CEGL002693)
- ^w*Acer negundo* / *Quercus gambelii* Woodland [Box-elder / Gambel Oak Woodland] (CEGL002797)
- *Achnatherum hymenoides* Shale Barren Herbaceous Vegetation [Indian Ricegrass Shale Barren Herbaceous Vegetation] (CEGL001651)
- ^w*Agrostis (gigantea, stolonifera)* Semi-natural Herbaceous Vegetation [(Giant Bentgrass, Spreading Bentgrass) Semi-natural Herbaceous Vegetation] (CEGL001558)
- ^w*Alnus incana* / *Cornus sericea* Shrubland [Speckled Alder / Red-osier Dogwood Shrubland] (CEGL001145)
- ^w*Alnus incana* / Mesic Graminoids Shrubland [Speckled Alder / Mesic Graminoids Shrubland] (CEGL001148)
- *Amelanchier (utahensis, alnifolia)* - *Cercocarpus montanus* Shrubland [(Utah Serviceberry, Saskatoon Serviceberry) - Mountain-mahogany Shrubland] (CEGL001070)
- *Amelanchier utahensis* - Mixed Shrub / *Carex geyeri* Shrubland [Utah Serviceberry - Mixed Shrub / Geyer's Sedge Shrubland] (CEGL001068)
- ^w*Aquilegia micrantha* - *Calamagrostis scopulorum* Herbaceous Vegetation [Mancos Columbine - Ditch Reedgrass Herbaceous Vegetation] (CEGL002592)
- *Artemisia frigida* - (*Bouteloua gracilis*, *Achnatherum hymenoides*, *Poa secunda*) - Lichens Rocky Mesa Dwarf-shrubland [Fringed Sagebrush - (Blue Grama, Indian Ricegrass, Curly Bluegrass) - Lichens Rocky Mesa Dwarf-shrubland] (CEGL002344)
- *Artemisia nova* / *Poa fendleriana* Shrubland [Black Sagebrush / Muttongrass Shrubland] (CEGL002698)
- *Artemisia nova* / *Poa secunda* Shrubland [Black Sagebrush / Curly Bluegrass Shrubland] (CEGL001423)
- *Artemisia tridentata* / *Pleuraphis jamesii* Shrubland [Basin Big Sagebrush / James' Galleta Shrubland] (CEGL001005)
- *Artemisia tridentata* ssp. *tridentata* / *Pascopyrum smithii* - (*Elymus lanceolatus*) Shrubland [Basin Big Sagebrush / Western Wheatgrass - (Streamside Wildrye) Shrubland] (CEGL001017)
- *Artemisia tridentata* ssp. *vaseyana* / *Achnatherum hymenoides* Shrubland [Mountain Big Sagebrush / Indian Ricegrass Shrubland] (N/A)
- *Artemisia tridentata* ssp. *vaseyana* / *Achnatherum lettermanii* Shrubland [Mountain Big Sagebrush / Letterman's Needlegrass Shrubland] (CEGL002811)

- *Artemisia tridentata* ssp. *vaseyana* / *Achnatherum pinetorum* Shrubland [Mountain Big Sagebrush / Pine Needlegrass Shrubland] (CEGL002806)
- *Artemisia tridentata* ssp. *vaseyana* / *Balsamorhiza sagittata* Shrubland [Mountain Big Sagebrush / Arrowleaf Balsamroot Shrubland] (CEGL001020)
- *Artemisia tridentata* ssp. *vaseyana* / *Carex geyeri* Shrub Herbaceous Vegetation [Mountain Big Sagebrush / Geyer's Sedge Shrub Herbaceous Vegetation] (CEGL001532)
- *Artemisia tridentata* ssp. *vaseyana* / *Festuca thurberi* Shrubland [Mountain Big Sagebrush / Thurber's Fescue Shrubland] (CEGL001024)
- *Artemisia tridentata* ssp. *vaseyana* / *Hesperostipa comata* Shrubland [Mountain Big Sagebrush / Needle-and-thread Shrubland] (CEGL002931)
- *Artemisia tridentata* ssp. *vaseyana* - *Holodiscus dumosus* Shrubland [Mountain Big Sagebrush - Glandular Oceanspray Shrubland] (CEGL002807)
- *Artemisia tridentata* ssp. *vaseyana* / *Pascopyrum smithii* Shrubland [Mountain Big Sagebrush / Western Wheatgrass Shrubland] (CEGL001028)
- *Artemisia tridentata* ssp. *vaseyana* / *Piptatherum micranthum* Shrubland [Mountain Big Sagebrush / Little-seed Mountain Ricegrass Shrubland] (N/A)
- *Artemisia tridentata* ssp. *vaseyana* / *Poa fendleriana* Shrubland [Mountain Big Sagebrush / Muttongrass Shrubland] (CEGL002812)
- *Artemisia tridentata* ssp. *vaseyana* / *Poa* (*pratensis*, *compressa*) Semi-natural Shrub Herbaceous Vegetation [Mountain Big Sagebrush / (Kentucky Bluegrass, Canada Bluegrass) Semi-natural Shrub Herbaceous Vegetation] (CEGL002339)
- *Artemisia tridentata* (ssp. *vaseyana*, ssp. *wyomingensis*) - *Amelanchier utahensis* Shrubland [(Mountain Big Sagebrush, Wyoming Big Sagebrush) - Utah Serviceberry Shrubland] (CEGL002820)
- *Artemisia tridentata* ssp. *wyomingensis* / (*Agropyron cristatum*, *Psathyrostachys juncea*) Seeded Grasses Semi-natural Shrubland [Wyoming Big Sagebrush / (Crested Wheatgrass, Russian Wildrye) Seeded Grasses Semi-natural Shrubland] (CEGL002185)
- *Artemisia tridentata* ssp. *wyomingensis* / *Achnatherum hymenoides* Shrubland [Wyoming Big Sagebrush / Indian Ricegrass Shrubland] (CEGL001046)
- *Artemisia tridentata* ssp. *wyomingensis* / *Achnatherum pinetorum* Shrubland [Wyoming Big Sagebrush / Pine Needlegrass Shrubland] (CEGL002810)
- *Artemisia tridentata* ssp. *wyomingensis* / *Bouteloua gracilis* Shrubland [Wyoming Big Sagebrush / Blue Grama Shrubland] (CEGL001041)
- *Artemisia tridentata* ssp. *wyomingensis* / Disturbed Understory Semi-natural Shrubland [Wyoming Big Sagebrush / Disturbed Understory Semi-natural Shrubland] (CEGL002083)
- *Artemisia tridentata* ssp. *wyomingensis* / *Hesperostipa comata* Colorado Plateau Shrubland [Wyoming Big Sagebrush / Needle-and-Thread Colorado Plateau Shrubland] (CEGL002761)
- *Artemisia tridentata* ssp. *wyomingensis* / *Poa fendleriana* Shrubland [Wyoming Big Sagebrush / Muttongrass Shrubland] (CEGL002775)
- *Artemisia tridentata* ssp. *wyomingensis* / Sparse Understory Shrubland [Wyoming Big Sagebrush / Sparse Understory Shrubland] (CEGL002768)
- *Atriplex canescens* / *Achnatherum hymenoides* Shrubland [Fourwing Saltbush / Indian Ricegrass Shrubland] (CEGL001289)
- *Atriplex canescens* - *Artemisia tridentata* Shrubland [Fourwing Saltbush - Basin Big Sagebrush Shrubland] (CEGL001282)
- *Atriplex confertifolia* Wyoming Basins Shrubland [Shadscale Wyoming Basins Shrubland] (CEGL001293)

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- *Atriplex corrugata* Dwarf-shrubland [Mat Saltbush Dwarf-shrubland] (CEGL001437)
- *Atriplex gardneri* Dwarf-shrubland [Gardner's Saltbush Dwarf-shrubland] (CEGL001438)
- *Bromus inermis* - (*Pascopyrum smithii*) Semi-natural Herbaceous Vegetation [Smooth Brome - (Western Wheatgrass) Semi-natural Herbaceous Vegetation] (CEGL005264)
- *Bromus tectorum* Semi-natural Herbaceous Vegetation [Cheatgrass Semi-natural Herbaceous Vegetation] (CEGL003019)
- *Carex duriuscula* Herbaceous Vegetation [Needleleaf Sedge Herbaceous Vegetation] (CEGL001874)
- ^w *Carex utriculata* Herbaceous Vegetation [Northwest Territory Sedge Herbaceous Vegetation] (CEGL001562)
- *Ceanothus velutinus* Shrubland [Tobacco-brush Shrubland] (CEGL002167)
- *Cercocarpus montanus* Shale Shrubland [Mountain-mahogany Shale Shrubland] (CEGL002798)
- *Cercocarpus montanus* - *Artemisia tridentata* Shrubland [Mountain-mahogany - Basin Big Sagebrush Shrubland] (CEGL005805)
- *Chrysothamnus viscidiflorus* / *Hesperostipa comata* Shrubland [Green Rabbitbrush / Needle-and-Thread Shrubland] (CEGL002799)
- *Chrysothamnus viscidiflorus* / *Poa pratensis* Semi-natural Shrub Herbaceous Vegetation [Green Rabbitbrush / Kentucky Bluegrass Semi-natural Shrub Herbaceous Vegetation] (CEGL002933)
- *Cirsium arvense* Weedy Forbs Great Plains Herbaceous Vegetation [Canada Thistle Weedy Forbs Great Plains Herbaceous Vegetation] (CEGL005260)
- *Conyza canadensis* Semi-natural Herbaceous Vegetation [Canada Horseweed Semi-natural Herbaceous Vegetation] (CEGL002800)
- ^w *Cornus sericea* Shrubland [Red-osier Dogwood Shrubland] (CEGL001165)
- *Elymus repens* Semi-natural Herbaceous Vegetation [Creeping Wild Rye Semi-natural Herbaceous Vegetation] (CEGL005868)
- *Ericameria nauseosa* Shrubland [Rubber Rabbitbrush Shrubland] (CEGL002713)
- *Ericameria parryi* / *Achnatherum hymenoides* Shrubland [Parry's Rabbitbrush / Indian Ricegrass Shrubland] (CEGL003751)
- *Erodium cicutarium* Semi-natural Annual Herbaceous Vegetation [Redstem Stork's-bill Semi-natural Annual Herbaceous Vegetation] (CEGL002085)
- *Glossopetalon spinescens* var. *meionandrum* - *Atriplex confertifolia* Shrubland [Utah Greasebush - Shadscale Shrubland] (N/A)
- *Hesperostipa comata* Great Basin Herbaceous Vegetation [Needle-and-thread Great Basin Herbaceous Vegetation] (CEGL001705)
- *Hesperostipa comata* - *Achnatherum hymenoides* Herbaceous Vegetation [Needle-and-thread - Indian Ricegrass Herbaceous Vegetation] (CEGL001703)
- *Holodiscus dumosus* Rock Outcrop Sparse Vegetation [Glandular Oceanspray Rock Outcrop Sparse Vegetation] (CEGL002801)
- ^w *Hordeum jubatum* Herbaceous Vegetation [Foxtail Barley Herbaceous Vegetation] (CEGL001798)
- ^w *Juncus balticus* Herbaceous Vegetation [Baltic Rush Herbaceous Vegetation] (CEGL001838)
- *Juniperus osteosperma* / *Artemisia nova* Woodland [Utah Juniper / Black Sagebrush Woodland] (CEGL000728)

- *Juniperus osteosperma* / *Artemisia tridentata* ssp. *wyomingensis* Woodland [Utah Juniper / Wyoming Big Sagebrush Woodland] (CEGL000730)
- *Juniperus osteosperma* / *Bromus tectorum* Semi-natural Woodland [Utah Juniper / Cheatgrass Semi-natural Woodland] (CEGL002817)
- *Juniperus osteosperma* / *Leymus salinus* Woodland [Utah Juniper / Salinas Lyme Grass Woodland] (CEGL003109)
- *Juniperus osteosperma* / Mixed Shrubs Talus Woodland [Utah Juniper / Mixed Shrubs Talus Woodland] (CEGL002266)
- *Juniperus scopulorum* / *Artemisia tridentata* Woodland [Rocky Mountain Juniper / Basin Big Sagebrush Woodland] (CEGL000743)
- *Juniperus scopulorum* – *Quercus gambelii* Woodland [Rocky Mountain Juniper – Gambel Oak Woodland] (CEGL002967)
- *Krascheninnikovia lanata* / *Achnatherum hymenoides* Dwarf-shrubland [Winter-fat / Indian Ricegrass Dwarf-shrubland] (CEGL001323)
- *Leymus cinereus* Herbaceous Vegetation [Great Basin Lyme Grass Herbaceous Vegetation] (CEGL001479)
- *Leymus salinus* Shale Sparse Vegetation [Salinas Lyme Grass Shale Sparse Vegetation] (CEGL002745)
- *Pascopyrum smithii* Herbaceous Vegetation [Western Wheatgrass Herbaceous Vegetation] (CEGL001577)
- ^w *Phalaris arundinacea* Western Herbaceous Vegetation [Reed Canarygrass Western Herbaceous Vegetation] (CEGL001474)
- ^w *Picea pungens* / *Alnus incana* Woodland [Blue Spruce / Speckled Alder Woodland] (CEGL000894)
- ^w *Picea pungens* / *Cornus sericea* Woodland [Blue Spruce / Red-osier Dogwood Woodland] (CEGL000388)
- *Picea pungens* / *Mahonia repens* Forest [Blue Spruce / Creeping Oregon-grape Forest] (CEGL000395)
- *Pinus edulis* - (*Juniperus monosperma*, *Juniperus osteosperma*) / *Hesperostipa comata* Woodland [Two-needle Pinyon - (One-seed Juniper, Utah Juniper) / Needle-and-thread Woodland] (CEGL000797)
- *Pinus edulis* - *Juniperus osteosperma* / *Amelanchier utahensis* Woodland [Two-needle Pinyon - Utah Juniper / Utah Serviceberry Woodland] (CEGL002329)
- *Pinus edulis* - *Juniperus osteosperma* / *Artemisia nova* Woodland [Two-needle Pinyon - Utah Juniper / Black Sagebrush Woodland] (CEGL002331)
- *Pinus edulis* - *Juniperus osteosperma* / *Atriplex* spp. Woodland [Two-needle Pinyon - Utah Juniper / Saltbush species Woodland] (CEGL002366)
- *Pinus edulis* - *Juniperus osteosperma* / *Bromus tectorum* Semi-natural Woodland [Two-needle Pinyon - Utah Juniper / Cheatgrass Semi-natural Woodland] (CEGL002367)
- *Pinus edulis* - *Juniperus osteosperma* / Mixed Shrubs Talus Woodland [Two-needle Pinyon - Utah Juniper / Mixed Shrubs Talus Woodland] (CEGL002328)
- *Pinus edulis* - *Juniperus osteosperma* / Sparse Understory Woodland [Two-needle Pinyon - Utah Juniper / Sparse Understory Woodland] (CEGL002148)
- *Pinus edulis* - *Juniperus* spp. / *Artemisia tridentata* (ssp. *wyomingensis*, ssp. *vaseyana*) Woodland [Two-needle Pinyon - Juniper species / (Wyoming Big Sagebrush, Mountain Big Sagebrush) Woodland] (CEGL000776)

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- *Pinus edulis* - *Juniperus* spp. / *Cercocarpus montanus* - Mixed Shrubs Woodland [Two-needle Pinyon - Juniper species / Mountain-mahogany - Mixed Shrubs Woodland] (CEGL000780)
- *Pinus edulis* - (*Juniperus* spp.) / *Holodiscus dumosus* Woodland [Two-needle Pinyon - (Juniper species) / Glandular Oceanspray Woodland] (CEGL002802)
- *Pinus edulis* - *Juniperus* spp. / *Leymus salinus* Woodland [Two-needle Pinyon - Juniper species / Salinas Lyme Grass Woodland] (CEGL002340)
- *Pinus edulis* - *Juniperus* spp. / *Poa fendleriana* Woodland [Two-needle Pinyon - Juniper species / Muttongrass Woodland] (CEGL000787)
- *Pinus edulis* - *Juniperus* spp. / *Pseudoroegneria spicata* Woodland [Two-needle Pinyon - Juniper species / Bluebunch Wheatgrass Woodland] (CEGL000788)
- *Pinus edulis* - *Juniperus* spp. / *Quercus gambelii* Woodland [Two-needle Pinyon - Juniper species / Gambel Oak Woodland] (CEGL000791)
- *Pinus ponderosa* / *Purshia tridentata* Woodland [Ponderosa Pine / Antelope Bitterbrush Woodland] (CEGL000867)
- *Pinus ponderosa* / *Quercus gambelii* Woodland [Ponderosa Pine / Gambel Oak Woodland] (CEGL000870)
- *Pleuraphis jamesii* Herbaceous Vegetation [James' Galleta Herbaceous Vegetation] (CEGL001777)
- *Poa fendleriana* Herbaceous Vegetation [Muttongrass Herbaceous Vegetation] (CEGL001925)
- *Poa pratensis* - (*Pascopyrum smithii*) Semi-natural Herbaceous Vegetation [Kentucky Bluegrass - (Western Wheatgrass) Semi-natural Herbaceous Vegetation] (CEGL005265)
- *Poa secunda* Herbaceous Vegetation [Curly Bluegrass Herbaceous Vegetation] (CEGL001657)
- ^w *Populus angustifolia* / *Alnus incana* Woodland [Narrowleaf Cottonwood / Speckled Alder Woodland] (CEGL002642)
- ^w *Populus angustifolia* / *Cornus sericea* Woodland [Narrowleaf Cottonwood / Red-osier Dogwood Woodland] (CEGL002664)
- ^w *Populus angustifolia* / *Crataegus rivularis* Woodland [Narrowleaf Cottonwood / River Hawthorn Woodland] (CEGL002644)
- ^w *Populus angustifolia* / Invasive Perennial Grasses Semi-natural Woodland [Narrowleaf Cottonwood / Invasive Perennial Grasses Semi-natural Woodland] (CEGL003749)
- ^w *Populus angustifolia* - *Juniperus scopulorum* Woodland [Narrowleaf Cottonwood - Rocky Mountain Juniper Woodland] (CEGL002640)
- ^w *Populus angustifolia* - *Picea pungens* / *Alnus incana* Woodland [Narrowleaf Cottonwood - Blue Spruce / Speckled Alder Woodland] (CEGL000934)
- ^w *Populus angustifolia* / *Prunus virginiana* Woodland [Narrowleaf Cottonwood / Choke Cherry Woodland] (CEGL000651)
- ^w *Populus angustifolia* / *Quercus gambelii* Woodland [Narrowleaf Cottonwood / Gambel Oak Woodland] (CEGL002804)
- ^w *Populus angustifolia* / *Rhus trilobata* Woodland [Narrowleaf Cottonwood / Skunkbush Sumac Woodland] (CEGL000652)
- ^w *Populus angustifolia* / *Rosa woodsii* Forest [Narrowleaf Cottonwood / Woods' Rose Forest] (CEGL000653)
- ^w *Populus angustifolia* / *Salix exigua* Woodland [Narrowleaf Cottonwood / Coyote Willow Woodland] (CEGL000654)

- *Populus tremuloides* / *Amelanchier alnifolia* - *Symphoricarpos oreophilus* / *Calamagrostis rubescens* Forest [Quaking Aspen / Saskatoon Serviceberry - Mountain Snowberry / Pinegrass Forest] (CEGL000567)
- *Populus tremuloides* / *Amelanchier alnifolia* - *Symphoricarpos oreophilus* / Mixed Graminoid Forest [Quaking Aspen / Saskatoon Serviceberry - Mountain Snowberry / Mixed Graminoid Forest] (CEGL002816)
- *Populus tremuloides* / *Amelanchier alnifolia* - *Symphoricarpos oreophilus* / *Thalictrum fendleri* Forest [Quaking Aspen / Saskatoon Serviceberry - Mountain Snowberry / Fendler's Meadowrue Forest] (CEGL000569)
- *Populus tremuloides* / *Carex geyeri* Forest [Quaking Aspen / Geyer's Sedge Forest] (CEGL000579)
- *Populus tremuloides* / *Ceanothus velutinus* Forest [Quaking Aspen / Tobacco-brush Forest] (CEGL000581)
- *Populus tremuloides* / Invasive Perennial Grasses Forest [Quaking Aspen / Invasive Perennial Grasses Forest] (CEGL003748)
- *Populus tremuloides* / *Juniperus communis* / *Carex geyeri* Forest [Quaking Aspen / Common Juniper / Geyer's Sedge Forest] (CEGL000588)
- *Populus tremuloides* / *Juniperus communis* / *Lupinus argenteus* Forest [Quaking Aspen / Common Juniper / Silver-stem Lupine Forest] (CEGL000589)
- *Populus tremuloides* / *Mahonia repens* Forest [Quaking Aspen / Creeping Oregon-grape Forest] (CEGL000594)
- *Populus tremuloides* / *Prunus virginiana* Forest [Quaking Aspen / Choke Cherry Forest] (CEGL000596)
- * *Populus tremuloides* - *Pseudotsuga menziesii* / *Amelanchier alnifolia* Forest [Quaking Aspen - Douglas-fir / Saskatoon Serviceberry Forest] (CEGL000543)
- * *Populus tremuloides* / *Quercus gambelii* / *Symphoricarpos oreophilus* Forest [Quaking Aspen / Gambel Oak / Mountain Snowberry Forest] (CEGL000598)
- *Populus tremuloides* / *Symphoricarpos oreophilus* Forest [Quaking Aspen / Mountain Snowberry Forest] (CEGL000610)
- *Populus tremuloides* / *Symphoricarpos oreophilus* / *Thalictrum fendleri* Forest [Quaking Aspen / Mountain Snowberry / Fendler's Meadowrue Forest] (CEGL000616)
- *Populus tremuloides* / Tall Forbs Forest [Quaking Aspen / Tall Forbs Forest] (CEGL000618)
- * *Prunus virginiana* - (*Prunus americana*) Shrubland [Choke Cherry - (American Plum) Shrubland] (CEGL001108)
- *Pseudotsuga menziesii* / *Acer glabrum* Forest [Douglas-fir / Rocky Mountain Maple Forest] (CEGL000418)
- *Pseudotsuga menziesii* / *Amelanchier alnifolia* Forest [Douglas-fir / Saskatoon Serviceberry Forest] (CEGL000420)
- *Pseudotsuga menziesii* / *Carex geyeri* Forest [Douglas-fir / Geyer's Sedge Forest] (CEGL000430)
- *Pseudotsuga menziesii* / *Artemisia tridentata* (ssp. *vaseyana*, ssp. *wyomingensis*) Woodland [Douglas-fir / (Mountain Big Sagebrush, Wyoming Big Sagebrush) Woodland] (CEGL002808)
- *Pseudotsuga menziesii* / *Holodiscus dumosus* Scree Woodland [Douglas-fir / Glandular Oceanspray Scree Woodland] (CEGL000902)
- *Pseudotsuga menziesii* / *Mahonia repens* Forest [Douglas-fir / Creeping Oregon-grape Forest] (CEGL000442)

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- *Pseudotsuga menziesii* / *Poa fendleriana* Woodland [Douglas-fir / Muttongrass Woodland] (CEGL002809)
- *Pseudotsuga menziesii* / *Prunus virginiana* Forest [Douglas-fir / Choke Cherry Forest] (N/A)
- *Pseudotsuga menziesii* / *Quercus gambelii* Forest [Douglas-fir / Gambel Oak Forest] (CEGL000452)
- *Pseudotsuga menziesii* Scree Woodland [Douglas-fir Scree Woodland] (CEGL000911)
- *Pseudotsuga menziesii* / *Symphoricarpos oreophilus* Forest [Douglas-fir / Mountain Snowberry Forest] (CEGL000462)
- *Quercus gambelii* / *Amelanchier alnifolia* Shrubland [Gambel Oak / Saskatoon Serviceberry Shrubland] (CEGL001109)
- *Quercus gambelii* / *Amelanchier utahensis* Shrubland [Gambel Oak / Utah Serviceberry Shrubland] (CEGL001110)
- *Quercus gambelii* / *Artemisia tridentata* Shrubland [Gambel Oak / Basin Big Sagebrush Shrubland] (CEGL001111)
- *Quercus gambelii* / *Carex geyeri* Shrubland [Gambel Oak / Geyer's Sedge Shrubland] (CEGL005995)
- *Quercus gambelii* - *Cercocarpus montanus* / (*Carex geyeri*) Shrubland [Gambel Oak - Mountain-mahogany / (Geyer's Sedge) Shrubland] (CEGL001113)
- *Quercus gambelii* / *Festuca thurberi* Shrubland [Gambel Oak / Thurber's Fescue Shrubland] (CEGL002805)
- *Quercus gambelii* - *Holodiscus dumosus* Shrubland [Gambel Oak - Glandular Oceanspray Shrubland] (CEGL002341)
- *Quercus gambelii* / *Poa fendleriana* Shrubland [Gambel Oak / Muttongrass Shrubland] (CEGL002949)
- *Quercus gambelii* / *Prunus virginiana* Shrubland [Gambel Oak / Choke Cherry Shrubland] (CEGL005994)
- *Quercus gambelii* / *Rhus trilobata* Shrubland [Gambel Oak / Skunkbush Sumac Shrubland] (CEGL002338)
- *Quercus gambelii* / *Symphoricarpos oreophilus* Shrubland [Gambel Oak / Mountain Snowberry Shrubland] (CEGL001117)
- ^w *Salix exigua* / Mesic Forbs Shrubland [Coyote Willow / Mesic Forbs Shrubland] (CEGL001202)
- ^w *Salix exigua* / Mesic Graminoids Shrubland [Coyote Willow / Mesic Graminoids Shrubland] (CEGL001203)
- ^w *Salix geyeriana* / Mesic Forbs Shrubland [Geyer's Willow / Mesic Forbs Shrubland] (CEGL002666)
- ^w *Salix geyeriana* / Mesic Graminoids Shrubland [Geyer's Willow / Mesic Graminoids Shrubland] (CEGL001210)
- *Sarcobatus vermiculatus* Disturbed Shrubland [Black Greasewood Disturbed Shrubland] (CEGL001357)
- *Thinopyrum intermedium* Semi-natural Herbaceous Vegetation [Intermediate Wheatgrass Semi-natural Herbaceous Vegetation] (CEGL002935)

APPENDIX L: SPECIAL-STATUS ANIMAL AND PLANT SPECIES

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
<i>Fish</i>						
d	<i>Gila cypha</i>	Humpback chub	E; G1	T; S1	A "big river" fish; humpback chub historically ranged in the main stem Colorado River downstream to below the Hoover Dam site. Present populations are restricted to areas in and upstream, of the Grand Canyon. In Colorado the humpback chub occurs in the Yampa, Gunnison, Green, and Colorado rivers (CDOW 2010b). The greatest numbers of humpback chubs in Colorado were collected at the Black Rocks area of the Colorado River downstream of Grand Junction near the Colorado/Utah border.	Humpback chub do not occur in Black Canyon NP or Curecanti NRA (NPS 2007). There are no water depletions associated with implementation of this proposed Wilderness and Backcountry Management Plan.
d	<i>Gila elegans</i>	Bonytail	E; G1	E; SX	The bonytail is considered the rarest of the endangered fish species in the Colorado River basin. Bonytail were historically common in portions of the upper and lower Colorado River basins (USFWS 2010). Bonytail are being reared at the Wahweap Hatchery in Utah and in ponds at the Horsethief Canyon State Wildlife Area in western Colorado. Populations are being reintroduced by stocking individuals within the Colorado, Green, and Yampa rivers. If present in the Gunnison River, bonytail were most likely extirpated after the Aspinall Unit dams were constructed in the 1960s. One bonytail was reported from the Gunnison River near Delta, CO in 1981 and other specimens have been taken in the Green River in Colorado. Another was collected at the Black Rock area of the Colorado River west of Grand Junction, CO in 1984.	Bonytail do not occur in Black Canyon NP or Curecanti NRA (NPS 2007). This species was reported as rare in Black Canyon NP from 1964 to 1974; however, Wiltzius (1978) states this record may have been misidentified Colorado roundtail chub specimens. There are no water depletions associated with implementation of this proposed Wilderness and Backcountry Management Plan.

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
d	<i>Gila robusta</i>	Colorado roundtail chub	—; G3	SC; S2	<p>A large river fish, Colorado roundtail chub occupy slow moving waters adjacent to areas of faster water. Adults concentrate in quiet swirling water adjacent to fast moving water, swimming in small groups into the faster water presumably to feed. Young occupy shallow river runs while juveniles concentrate in eddies and irrigation ditches. A moderately streamlined minnow the adults have silvery shading dorsally to dusky yellow or light green; spawning males have a pink cast to fins. Adults can attain 18 inches (46 cm) in length and 2 pounds (908 g) in weight (CDOW 2010b). It has historically been the most common member of the genus <i>Gila</i> in the Colorado River Basin, extending in elevation to the mountain foothills. In Colorado, the roundtail chub occurs in the Colorado River mainstem and larger tributaries (e.g., White, Yampa, Dolores, San Juan, and Gunnison rivers) (CDOW 2010b). Spawning occurs during spring and early summer when spring runoff is subsiding (February through June), and when water temperatures are approximately 20°C. Spawning occurs in response to flooding and includes pool, run, and riffle habitats; Colorado roundtail chub have an average life span of 8 to 10 years.</p>	<p>Colorado roundtail chub do not occur in Black Canyon NP or Curecanti NRA (NPS 2007).</p> <p>Colorado roundtail chub were reported as rare in Black Canyon NP from 1964–1974 and were most likely extirpated after the Aspinall Unit dams were constructed in the 1960s.</p> <p>There are no water depletions associated with implementation of this proposed Wilderness and Backcountry Management Plan.</p>
✓	<i>Oncorhynchus clarki pleuriticus</i>	Colorado River cutthroat trout	—; G4	SC; S3	<p>Occurs in the upper Colorado River drainage; the Colorado River cutthroat trout is the ancestor of the other two native Colorado cutthroat trout varieties (CDOW 2010b). Colorado River cutthroat trout probably occur in Curecanti NRA (NPS 2007).</p>	---

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
d	<i>Ptychocheilus lucius</i>	Colorado pikeminnow	E; G1	T; S1	In Colorado, the species occurs within the Green, Yampa, White, Colorado, Gunnison, San Juan, and Dolores rivers (CDOW 2010b). The Colorado pikeminnow, known previously as the Colorado squawfish, is the largest North American minnow and may attain 6 ft (1.8 m) in length and weigh 80 pounds (36.4 kilograms). Natural reproduction of Colorado pikeminnow is currently known from the Green, Yampa, upper Colorado, Gunnison, and San Juan rivers (USFWS 2002). Colorado pikeminnow within the upper Colorado River sub-basin are believed to spawn near Grand Junction, CO and in the lower Gunnison River (USFWS 2002). One of three wild populations occurs partially within the lower 54 km (33.6 mi) of the Gunnison River. Although recruitment dynamics are not well documented, exchange of adult Colorado pikeminnows between the upper Colorado and Gunnison rivers is documented through a selective fish passage structure in the lower Gunnison River. Increased dispersal has occurred into the Gunnison River due to increased numbers of adult fish migrating into the river through the Redlands Fishway. The Redlands Fishway on the lower Gunnison River has allowed Colorado pikeminnow and other native fishes to move past the Redland Diversion and regain access to about 50 km of the Gunnison River (USFWS 2002). Colder water and decreases in water quality probably resulted in reproductive failure and slowed growth of the warm-water native fishes in the Gunnison River.	Colorado pikeminnow do not occur in Black Canyon NP or Curecanti NRA (NPS 2007). There are no water depletions associated with implementation of this proposed Wilderness and Backcountry Management Plan.
d	<i>Xyrauchen texanus</i>	Razorback sucker	E; G1	E; S1	Occurring historically throughout the Colorado River drainage basin, the razorback sucker has become very rare upriver from the Grand Canyon (CDOW 2010b). In the upper Colorado River basin, razorback suckers occurred in the Colorado, Green, and San Juan rivers (USFWS 1998)	Razorback sucker do not occur in Black Canyon NP or Curecanti NRA (NPS 2007). There are no water depletions associated with implementation of this proposed Wilderness and

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
					<p>from Lee’s Ferry, AZ, to Rifle, CO, in the Colorado River and in the Gunnison River to Delta, CO (Wiltzius 1978). In Colorado, recent specimens have been collected from the lower main stem Colorado, Gunnison, lower Yampa, and Green rivers. Razorback suckers are represented by fewer than 70 specimens collected in Colorado since 1979 (CDOW 2010b). Upstream reservoirs (Taylor Park Dam and the Aspinall Unit) on the Gunnison River have changed the temperature regime and timing of runoff flows. Water use is mainly non-consumptive and most of the water volume still flows down the Gunnison River (USFWS 1998). The USFWS and the BOR manage reservoir releases to mimic the shape of the natural hydrograph for this designated critical habitat. Adequate flows are maintained in most of the Gunnison River reach below the dams because the Redlands Diversion Dam has a senior water right, however, the 2.3 mi (3.7 km) of river below the dam have been completely dewatered historically. A minimum flow of at least 300 cfs below the Redlands Diversion Dam at all times maintains razorback sucker critical habitat. Completion of a fish passage around the Redlands Diversion Dam in 1996 allows fish movement between this Gunnison River reach and the Colorado River (USFWS 1998). Some small-scale augmentation stockings of razorback suckers have occurred in the Green, Colorado, Gunnison, and San Juan rivers upper basin (USFWS 1998). Recapture results indicated that some stocked fish survived.</p>	<p>Backcountry Management Plan.</p>
<i>Amphibians</i>						
✓	<i>Rana pipiens</i>	Northern leopard frog	---; G5	SC; S3	The northern leopard frog is a Colorado species of special concern and was collected within the Black Canyon prior to damming in 1961. The specimen is preserved in the	---

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
					University of Michigan, Museum of Zoology (UMMZ 122926). The status in Black Canyon NP and Curecanti NRA is unconfirmed Hammerson 2005). A resource management specialist observed the northern leopard frog within Black Canyon NP.	
<i>Birds</i>						
d	<i>Buteo regalis</i>	Ferruginous Hawk	—; G4	SC; S3S4	Ferruginous hawks are a Colorado species of special concern. They have never been detected during extensive avian surveys (1992 to present) in either park unit (T. Childers pers. comm. 2011); Andrews and Righter (1992) describe this species as an uncommon to rare winter resident in western Colorado. CDOW (2010b) states the Ferruginous Hawk is a winter resident on the eastern plains of Colorado. It is also considered a rare summer resident on the eastern plains and occurs locally in Moffat and Routt counties, along the Book Cliffs, in the Grand Valley, and in the San Luis Valley. The Ferruginous Hawk inhabits grasslands, semidesert shrublands, and agricultural lands, primarily and is a rare user of pinyon-juniper woodlands. Breeding hawks nest in isolated trees, on rock outcrops, structures including windmills and power poles, or on the ground. Winter residents concentrate around prairie dog towns and winter Ferruginous Hawk numbers and distribution fluctuate greatly according to the availability of prairie dogs (CDOW 2010b).	The ferruginous hawk does not occur in Black Canyon NP or Curecanti NRA.
✓	<i>Centrocercus minimus</i>	Gunnison Sage-grouse	C; G1	SC; S1	Gunnison Sage-grouse occur in Black Canyon NP and Curecanti NRA (NPS 2007). The NPS is dedicated to the conservation of the Gunnison Sage-grouse by focusing management decisions, e.g., several visitor-use areas near leks are closed during the mating season (NPS 2010). In addition, NPS biological science technicians conducted studies, including trapping Sage-grouse on	---

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
					breeding grounds and fitting them with small radio transmitters; marked Sage-grouse were tracked over a period of time to identify preferred habitat types.	
✓	<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	C; G5	SC; S3	The yellow-billed cuckoo was observed in Curecanti NRA during June 2010; additionally riparian habitat does occur that could support this species (USFWS 2010).	—
✓	<i>Falco peregrinus</i>	American Peregrine Falcon	Delisted; G4	SC; S2	American Peregrine Falcons are present in both Black Canyon NP and Curecanti NRA (Boretti 1990, Chase 2000, Giroir 2004). In Black Canyon NP, there are three known, established territories which are occupied every year. In Curecanti NRA, there are also three known, established territories.	---
✓	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Delisted; G5	T; S1S3	There are no known breeding Bald Eagle pairs in Black Canyon NP or Curecanti NRA, but a winter resident population occurs mostly within Curecanti NRA.	---
d	<i>Strix occidentalis lucida</i>	Mexican Spotted Owl	T; G3	T; S1	Additionally there is no Mexican Spotted Owl critical habitat designated within Black Canyon NP or Curecanti NRA, however, both park units make up a portion of the Southern Rocky Mountain – Colorado Recovery Unit.	The Mexican spotted owl has not been detected in Black Canyon NP or Curecanti NRA during ongoing presence/absence surveys beginning in 2006 (T. Childers pers. comm. 2011).
Mammals						
d	<i>Cynomys gunnisonii</i>	Gunnison's prairie dog	C; G5	---; S5	The Gunnison's prairie dog inhabits sagebrush, rabbitbrush, grassland, and abandoned field habitats of Curecanti NRA in the vicinity of Elk Creek and to the east. Seglund and Schnurr (2010) reported that 28 acres (11 ha) in five colonies within Curecanti NRA were occupied by Gunnison's prairie dog populations. Historically, nine colonies occupying 182 acres (71.7 ha) were present within Curecanti NRA; however, four of the colonies were extirpated by bacteria-caused plague (Seglund and Schnurr 2010).	Gunnison's prairie dog occurs within the Curecanti NRA front country; the species does not occur within Black Canyon NP. The scope of this proposed Wilderness and Backcountry Management Plan does not affect Gunnison's prairie dog.

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

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					The colonies are within the Gunnison Individual Population Area which includes the Gunnison Basin and Cochetopa Park. Gunnison's prairie dogs emerge from hibernation around mid-March to late April and become very active in late June when the pups emerge. The prairie dogs are typically preyed upon by the coyote, badger, and species of hawks and eagles; one study determined that prairie dogs make up approximately 75% of the diet of Golden Eagle (<i>Aquila chrysaetos</i>) chicks. Humans may become concerned about contact with prairie dogs, e.g., in Curecanti NRA, the Gunnison's prairie dog population carries fleas that sometimes host a bacterium (<i>Yersinia pestis</i>) known to cause bubonic plague in humans. Historically, Curecanti NRA prairie dog colonies have experienced plague-related die-offs at North Willow, Elk, and Stevens creeks. Curecanti NRA has developed and uses an active management program to assure visitor safety and to maintain a healthy prairie dog population. Hunting the Gunnison's prairie dog within Curecanti NRA is prohibited.	
✓	<i>Lontra canadensis</i>	Northern river otter	---; G5	T; S3S4	Northern river otters occur in the Colorado, Gunnison, Piedra, and Dolores rivers and tracks and other sign of river otters have also been found in the Poudre and Laramie drainages in Larimer County. Northern river otter are represented by confirmed sightings in both Black Canyon NP and Curecanti NRA.	---
d	<i>Lynx canadensis</i>	Canada lynx	T; G5	E: S1	A Lynx Analysis Unit (southern boundary) occurs approximately 0.5 mile north of the Soap Creek Arm of Blue Mesa Reservoir within Curecanti NRA (USFWS 2010; Broderdorp pers. comm. 2011). In Colorado, Canada lynx appear to be restricted to extremely isolated areas of the mountains of the central portion of the state (CDOW	The Canada lynx is not known to occur within Black Canyon NP or Curecanti NRA (NPS 2007) and no suitable Canada lynx habitat occurs within the park units. However, suitable habitat does occur north of the Soap Creek area of Curecanti NRA and

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
					2010b); spruce-fir forest types, generally above 7,000 feet (2,500 m) in the mountains of Colorado represent the southern range boundary (CDOT undated). To meet both security (dense forests) and food requirements (open woodlands support snowshoe hares), good Canada lynx habitat consists of a mosaic of forest and woodland types joined by travel corridors. Increased human use of remote areas that Canada lynx prefer occurs when roads and trails create access (CDOT n.d.). Road and trail access and human use may degrade and fragment habitat by increasing human disturbance and human-caused mortality. Roads and trails also allow Canada lynx competitors to access previously unavailable habitats. Compacted snow on recreational trails allows Canada lynx competitors (mountain lion, bobcat, coyote) winter access to areas where deep snow previously prevented access.	Canada lynx may travel through the edge of Curecanti NRA while moving between high elevation forests. The scope of this proposed Wilderness and Backcountry Management Plan does not affect Canada lynx.
✓	<i>Corynorhinus townsendii pallescens</i>	Townsend's big-eared bat subsp.	—; G4	SC; S2	Townsend's big-eared bat is a Colorado species of special concern that is known to occur within Black Canyon NP following capture and positive identification during the 2001–2002 NCPN Mammalian Inventory (Haymond et al. 2003).	—
<i>Plants</i>						
d	<i>Aquilegia micrantha</i>	Alcove columbine	—; G5	—; S5	The alcove columbine is a Colorado endemic previously known from a historical location in Montezuma County at an elevation of 6,400 ft (1,951 m) (Spackman et al. 1997; Spackman and Anderson 2002). The species habitat is mesic, typically seeps emerging under shady cliffs in canyons.	Alcove columbine occur in some canyon alcoves in Black Canyon NP (Hogan, et al. 2009). The species is not monitored by the NPS.
✓	<i>Astragalus anisus</i>	Gunnison milkvetch	—; G2G3	—; S2S3	Gunnison milkvetch do not occur in Black Canyon NP but do occur in Curecanti NRA (Hogan et al. 2009). The species is monitored by the NPS in Curecanti NRA.	---
d	<i>Astragalus microcymbus</i>	Skiff milkvetch	—; G1	—; S1	The skiff milkvetch is a Colorado endemic observed along South Beaver Creek in	Skiff milkvetch does not occur in Black Canyon NP or Curecanti

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
					Gunnison County approximately 3.0 mi from the Saguache County border and occurring between the elevations of 7,600 to 8,400 ft (2,317 to 2,560 m) (Spackman et al. 1997). The species has become established within open sagebrush communities and Utah juniper / sagebrush communities on moderately steep to steep slopes. Soils vary from gray to reddish-colored clay soils, often with cobbles or other rocky substrate. The status within Black Canyon NP and Curecanti NRA is "Unconfirmed," however several voucher specimens have been collected outside Black Canyon NP boundary (Hogan et al. 2009).	NRA (Hogan et al. 2009).
d	<i>Astragalus wetherillii</i>	Wetherill's milkvetch	---; G3	---; S3	Wetherill's milkvetch occurs in western Colorado and eastern Utah but has not yet been reported for Gunnison or Montrose counties between the elevations of 5,250 to 7,400 ft (1,600-2,256 m) (Spackman et al. 1997). The species has become established within sagebrush and Utah juniper on steep slopes, canyon benches, and talus slopes. Soils are sandy clay derived from shale or sandstone. The status within Black Canyon NP and Curecanti NRA is 'Unconfirmed' (Hogan et al. 2009).	Wetherill's milkvetch does not occur in Black Canyon NP or Curecanti NRA (Hogan, et al. 2009).
✓	<i>Cirsium perplexans</i>	Adobe thistle	BLM-S; G2G3	---; S2S3	The adobe thistle is monitored by the NPS in Black Canyon NP; it is endemic to the Gunnison and Colorado River valleys. The species occurs in open areas and on disturbed sites in mixed shrublands and pinyon – juniper woodlands at elevations of 5,000-8,000 ft (1,524 to 2,438 m).	---
d	<i>Epipactis gigantea</i>	Giant helleborine	---; G4	---; S2S3	The giant helleborine is widely distributed from British Columbia to central Mexico and from Montrose County, among other counties in Colorado between the elevations of 4,800-8,000 ft (1,463 to 2,438 m) (Spackman et al. 1997). The species has become established on seeps emerging from sandstone cliffs and hillsides and in	Giant helleborine occur in some canyon alcoves, hillside seeps, and at springs in Black Canyon NP (Hogan et al. 2009). The species is not monitored by the NPS.

TABLE L-1. SPECIAL STATUS ANIMAL AND PLANT SPECIES

MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
					saturated soil near springs including some hot springs. The species is rare in Colorado and was reported within Black Canyon NP in Hogan et al. (2009).	
✓	<i>Gilia penstemonoides</i>	Black Canyon gilia	---; G3	---; S3	Monitored by NPS in Black Canyon NP; endemic in Gunnison, Montrose, Hinsdale, and Mineral counties; occurs on vertical canyon walls, narrow ledges, and cliff rims between the elevations of 6,800 to 9,000 ft (2,073 to 2,743 m) (Spackman et al. 1997).	---
d	<i>Lomatium concinnum</i>	Adobe desert parsley	---; G2G3	---; S2S3	The adobe desert parsley is a Colorado endemic limited to Mancos Formation shale exposures in Montrose, Delta, and Ouray counties between the elevations 5,500 to 7,000 ft (1,676 m to 2,134 m) (Spackman et al. 1997). The species has become established within shadscale, sagebrush, greasewood, and/or Gambel oak communities on adobe hills and plains. Soils are rocky, alkaline clay derived from shale. There is a museum voucher specimen collected within Black Canyon NP (Hogan et al. 2009).	Adobe desert parsley occurs in badlands habitat in Black Canyon NP (Hogan et al. 2009). The species is not monitored by the NPS.
d	<i>Penstemon retrorsus</i>	Adobe hills penstemon	---; G3	---; S3	The adobe hills penstemon is a Colorado endemic limited to Mancos Formation shale exposures in Montrose and Delta counties between the elevations 5,100 to 6,500 ft (1,555 m to 1,981 m) (Spackman et al. 1997). The species has become established within saltbush and sagebrush communities on nearly barren gray adobe hills in moist sites including drainages or on the north-facing hillslopes. Soils are alkaline clay derived from shale. There is a museum voucher specimen collected within Black Canyon NP (Hogan et al. 2009).	Adobe hills penstemon occur in badlands habitat in Black Canyon NP (Hogan, et al. 2009). The species is not monitored by the NPS.

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MAJOR GROUP	SCIENTIFIC NAME	COMMON NAME	FEDERAL ¹ ; GLOBAL ³ STATUS	COLORADO ² ; STATE ⁴ STATUS	DISTRIBUTION AND HABITAT COMMENTS AND NOTES	REASONS FOR DISMISSING FROM EA ANALYSIS, IF DISMISSED
✓	<i>Sullivantia hapemannii</i> var. <i>purpusii</i>	Hapeman's sullivantia	---; G3	---; S3	Hapeman's sullivantia is monitored by the NPS in Black Canyon NP; it is a Colorado endemic of mesic hanging gardens on wet cliffs, in alcoves, and on wet boulders of various bedrock types. The variety occurs in west-central Colorado including Gunnison and Montrose counties between the elevations of 7,000 to 10,000 ft (2,134 m to 3,048 m) (Spackman et al. 1997).	---

✓ = impacts to this species discussed in this environmental assessment
d = impacts to this species dismissed from detailed analysis in this environmental assessment

¹ C=Candidate, E = Listed as Endangered; T=Listed as Threatened, BLM-S = Bureau of Land Management-Sensitive

² E=Endangered, T=Threatened, SC=Species of Concern

³ G1= Critically Imperiled, G2=Imperiled, G3=Moderate Risk of Extinction, G4=Apparently Secure, G5=Secure

⁴ S1= Critically Imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently Secure, S5=Secure, SU=Unrankable, SX=Presumed Extinct



As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. Administration.

