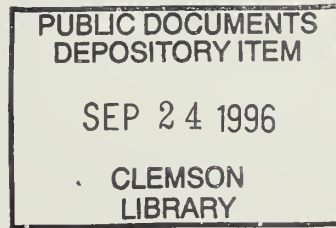


# General Management Plan





**General  
Management  
Plan**



**Black Canyon of the Gunnison  
National Monument  
and  
Curecanti National Recreation Area**

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*Prepared by the staffs of  
Black Canyon of the Gunnison National Monument,  
Curecanti National Recreation Area  
and the Rocky Mountain System Support Office*



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**GENERAL MANAGEMENT PLAN**  
**Black Canyon of the Gunnison National Monument**  
**Curecanti National Recreation Area**  
**Montrose and Gunnison Counties, Colorado**

A general management plan (GMP) is needed to provide the National Park Service with a long-range management program for the continued protection of the unique resources found within Black Canyon of the Gunnison National Monument (Black Canyon) and Curecanti National Recreation Area (Curecanti).

The plan sets forth a management concept for each park; establishes a role for each park within the context of regional trends and plans for conservation, recreation, transportation, economic development, and regional issues; and identifies the conditions necessary to resolve issues and achieve management. The primary objective for park management is to guide the protection and preservation of the natural and cultural environments while permitting ecological processes to continue with a minimum of human disturbance. The plan also considers a variety of recreational and interpretive visitor experiences that enhance the enjoyment and understanding of the park resources.

Within this context, the purpose of this document is to provide a framework and broad, general direction for park management. This document requires that proposals for future actions be substantiated by further surveys and environmental assessments either prior to or as part of a design or during the development of specific resource management and visitor service plans. Primary emphasis is placed on providing guidance for the parks' long-term needs.

Major long-range issues addressed in the strategic plan and environmental assessment set objectives for resource protection, visitor use and experience, and park operations. The plan also establishes the necessary first steps in addressing desired ecological and social conditions and capacities for the park.

Four alternatives have been considered for each park. The proposed action represents a new general management plan for Black Canyon of the Gunnison National Monument and Curecanti National Recreation Area. Alternatives provide for distinctly different levels of use, visitor orientation to resources, and visitor service. The same set of management prescriptions noted on the next few pages are applied in various combinations to describe each alternative. Combinations of management prescriptions establish the complete strategy for management of lands within the boundary. Prescriptions are based largely on resource values, with provisions for retention of existing development and uses tied to each alternative's general theme.

All alternatives consider a broad strategic management scheme for the park. This does not preclude development options and partnerships outside park boundaries as long as these proposals are supportive and consistent with the park's chosen management direction. Alternative sites within the park boundaries for visitor contact, maintenance, and administration would be evaluated when proposals are presented. Partnerships with other agencies and local entities would be explored to minimize cost and impacts on resources and to provide consolidated services to the public.

Alternatives for visitor use, development, and park operations range from no action (continuation of existing management) to establishing new use patterns while broadening protection of natural resources. Alternatives are broad and strategic in nature, requiring additional site-specific environmental analysis to be completed at the time of conceptual design. This would require an environmental document, either an environmental assessment or an environmental impact statement.

Alternative A describes the no-action alternative, what happens if existing management continues. Alternative B, the National Park Service proposal, describes an alternative with a balanced mix of recreational experiences, capitalizing on the unique aspects that each park brings to those experiences. Alternative C describes a situation that provides for more primitive recreation experiences, encouraging visitors to seek more developed recreational experiences in other areas outside the park boundaries. Alternative D provides for more developed recreational experiences while protecting sensitive resources.

Also included are the results of public involvement and consultation/coordination that have been conducted thus far.

John F. Chapman

Superintendent

Black Canyon of the Gunnison National Monument

Curecanti National Recreation Area



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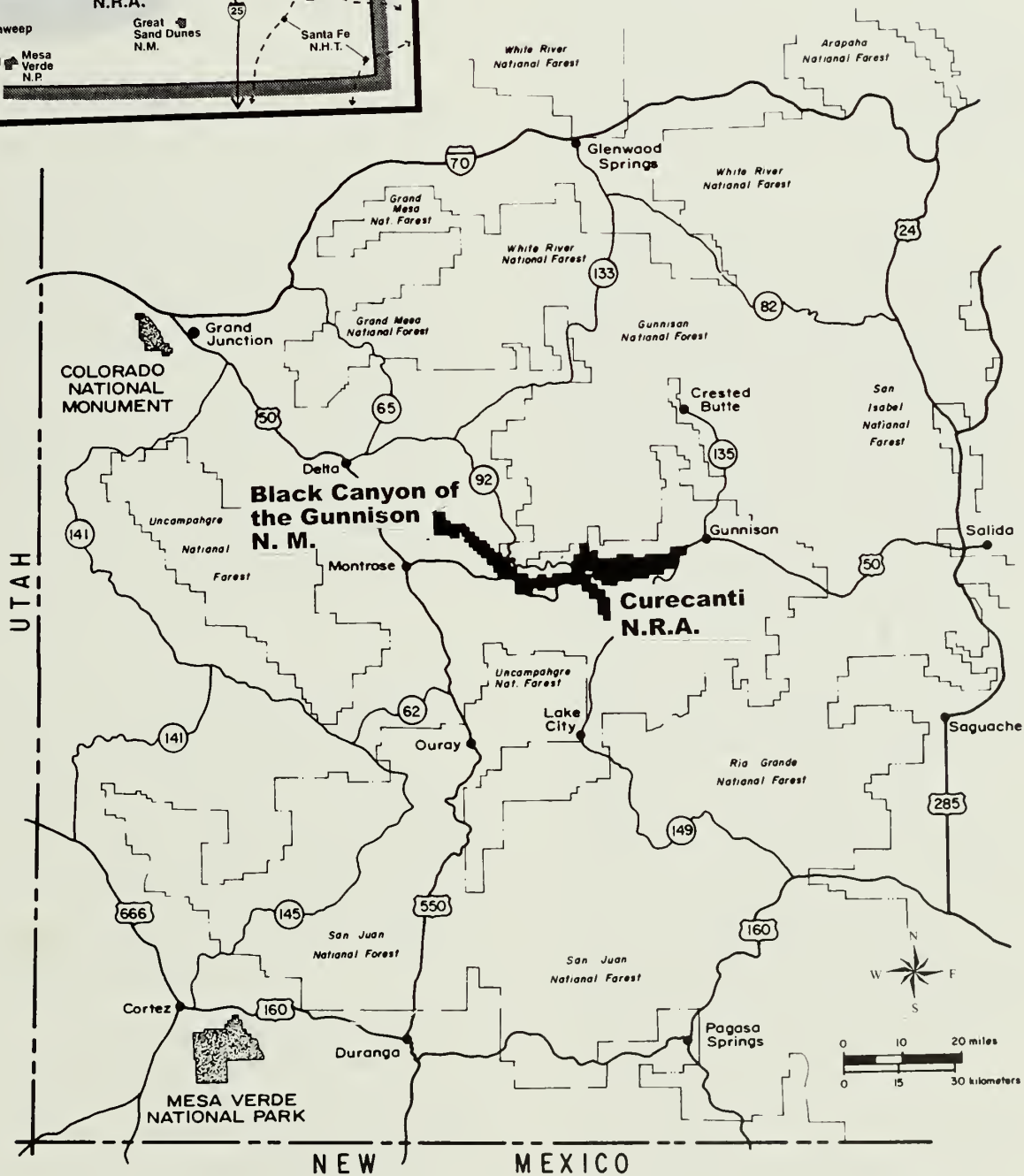
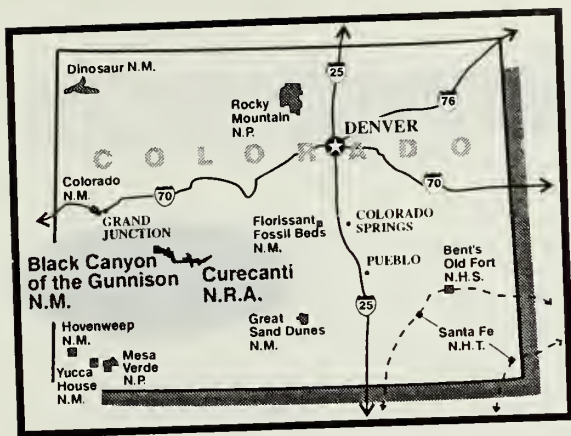
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## Vicinity Map

### Black Canyon of the Gunnison National Monument and Curecanti National Recreation Area

#### Colorado

U. S. Department of the Interior - National Park Service



### INTRODUCTION

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Curecanti National Recreation Area and Black Canyon of the Gunnison National Monument are directly adjacent to one another and are linked ecologically as part of the larger Gunnison River Basin ecosystem. Yet each park has a very different purpose. Together, these park units contribute different resources and spectrums of recreational opportunities for the tourism that exists in the larger Grand Junction-Montrose-Delta-Gunnison-North Fork area.

The region in which the parks lie is one of great elevation ranges (see Vicinity Map). Both parks are common to the Gunnison River with elevations from 6,500 feet above sea level in Black Canyon, rising above 14,000 feet on mountain peaks visible within 30 miles. The parks are approximately 250 miles southwest of Denver.

Black Canyon of the Gunnison has a unique and spectacular landscape that was formed slowly by the action of water and rock scouring down through hard Proterozoic crystalline rock. No other canyon in North America combines the narrow opening, sheer walls, and startling depths offered by the Black Canyon of the Gunnison. The park shares its eastern boundary with Curecanti National Recreation Area.

The Curecanti National Recreation Area is composed of three reservoirs named for corresponding dams on the Gunnison River. Panoramic mesas, fjord-like reservoirs, and deep, steep, and narrow canyons abound. Blue Mesa Reservoir is Colorado's largest body of water and is the largest Kokanee Salmon fishery in the United States. Morrow Point Reservoir is the beginning of the

Black Canyon of the Gunnison, and below, Crystal Reservoir is the site of the Gunnison Diversion Tunnel, a National Historic Civil Engineering Landmark. Recently discovered dinosaur fossils, a 5,000-acre archeological district, a narrow-gauge train, and traces of 6,000-year-old dwellings further enhance the offerings of Curecanti.

The purpose of this environmental assessment is to provide sufficient information and analysis for determining whether to prepare a Finding of No Significant Impact (FONSI) or filing a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS). If, based on review of the General Management Plan and the results of the public review process, the field director concludes that the plan will result in significant environmental impacts, then the project would include preparation of a draft and final EIS.

This plan sets forth the basic management philosophy for both parks, managed as one integral unit, and provides strategies for addressing issues and management objectives. This document includes measures for the preservation of the area's resources, indications of the types and general intensities of development (including visitor circulation and transportation patterns, systems, and modes) associated with public enjoyment and use of each area, and the first steps in identifying visitor carrying capacities for both units.

The document also discloses the potential environmental consequences, so far as can be determined by a strategic plan, that may result from implementation of various alternatives. It documents the process used by the National Park Service in preparing a general management plan for both parks.

## **THE PLANNING PROCESS**

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The planning process builds upon the logic established for national parks, starting with the national park system and all other applicable laws, regulations, and policies. The proposed action and alternatives displayed in this document are based on each unit's purpose and significance. Alternatives have three common components in the plan—the vision, the specific objectives, and management prescriptions. Each alternative responds differently in addressing the specific objectives.

The vision is a short narrative that describes the park's desired future condition. It is meant to stand the test of time and reflect the park's purpose and significance. It expresses the management philosophy for the park and what the park is to be like in the future.

Specific objectives capture the essence of the vision, providing clarity and priorities. These objectives are issue-, resource-, or geographic-specific. They may include products to be produced or conditions to be attained or maintained. As a whole, objectives are interrelated and interdependent on one another. The specific objectives provide a basis for allocating resources and define management regions in the park.

Management prescriptions can be either geographically or programmatically based, or a combination of both. Geographic prescriptions describe characteristics of the management region for which they were developed and define the outputs, activities, and projects for that region. Programmatic prescriptions are not tied to a specific management region. They address resource goals in the context of a large area, such as air quality. The rationale for defining

regional boundary delineations is included in the planning document.

Management prescriptions for each region are based on the character and condition of the resource involved. They are not only tied to local or park-wide needs but also take into consideration factors beyond park boundaries. A menu of available management prescriptions is developed. Each alternative revolves around a common theme, and the same set of prescriptions is applied differently over park lands depending on the theme of the alternative. Themes set the basis for developing distinctly different alternatives that provide a variety of visitor experience options.

The plan provides general or strategic guidance and is not detailed, specific, or highly technical in nature. Highly technical environmental analysis is to be done when funds become available to begin design of facilities, if prescribed by the management plan, when site-specific impacts can be addressed. All undertakings will also be subject to Section 106 review and compliance prior to implementation.

## **THE NATIONAL PARK SYSTEM**

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The national park system represents a collection of our national heritage and includes many of the nation's most outstanding and significant natural, cultural, historic, and recreational resources. Each unit contains resources and values that makes it something special—even nationally significant. Black Canyon of the Gunnison and Curecanti are two such units, each filling a particular niche in the system. The “niche” filled by each park is defined by its park purpose.

The National Park Service's purpose of conserving resources—whether they be



natural, cultural, historic, or recreational—recognizes the importance of preservation as an active management tool. This preservation principal respects both natural and human relationships and emphasizes the value of maintaining land for the purpose of preserving natural ecosystems, historic significance, and outstanding recreational opportunities.

Balanced against the protection and preservation of these resources is the value of public enjoyment by present and future generations. Human use often can threaten the very resources that the National Park Service is tasked to protect. Many public debates have revolved around the balancing of these two National Park Service purposes. Whether it is telling a story or distributing use carefully to protect resources, the Service uses the principles of human and natural management to accomplish its mission. But at the very least, “these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system managed for the benefit and inspiration of all people.” (16 USC 1a-1;1970)

## **MANAGEMENT ASSESSMENT**

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In 1993, each unit conducted a three-day management assessment workshop (Black Canyon in August and Curecanti in October) with participants from the parks’ staffs, the regional office, other agencies, and the public. This process began by looking at each park’s legislation in an effort to clearly define its purpose and significance. The next step identified management objectives, which are broad, conceptual descriptions of what the park could be like relative to resource management, visitor services, human resources, and partnerships. Applicable management objectives derived during the

management assessment were used to help define more specific objectives for this plan.

## ***Curecanti National Recreation Area***

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### **Park Purpose**

The reason or reasons for which Curecanti was set aside as a part of the national park system is called its *park purpose*. Purpose statements are based upon legislation, legislative history, and historic trends. Curecanti is currently being administered by the NPS based on a number of cooperative agreements and legal mandates. Curecanti has not yet been authorized by specific legislation as a separate unit of the national park system.

The specific legal mandates for Curecanti National Recreation Area include the Colorado River Storage Project Act and a memorandum of agreement between the Bureau of Reclamation and the National Park Service. Also, draft legislation to establish Curecanti as a unit of the national park system suggests additional legislative intent. The purpose statements below reflect these mandates and legislative intent for Curecanti.

### ***Purposes***

- To conserve the scenery, natural, historic, and archeological resources, and wildlife of Curecanti National Recreation Area.
- To provide for public use and enjoyment in such a way as to ensure visitor safety and resource preservation or conservation by establishing and maintaining facilities and providing protective and interpretive services.

### ***Mandates***

- To manage the lands, waters, and activities of Curecanti National Recreation Area in such a way that it does not interfere with the purposes of the Colorado River Storage Project Act and other Bureau of Reclamation agreements affecting the operation of the Aspinall Unit.

- To mitigate the loss of fish and wildlife resources as a result of the Colorado River Storage Project.

Other legislation affecting the management of Curecanti National Recreation Area includes the 1916 Organic Act, the National Environmental Policy Act, the National Historic Preservation Act, the Archeological Resources Protection Act, and the Endangered Species Act.

## Park Significance

Significance is summarized in statements that capture the essence of Curecanti's importance to our natural and cultural heritage. Significance statements are not an inventory of significant resources but rather describe the importance or distinctiveness of the aggregate of resources in the park. The following are the significance statements developed for the park through the management assessment process.

- The evolution of life in the Gunnison Basin and its ultimate dependence on water is illustrated and interpreted at Curecanti. Evidence of the impact that water has had on past settlements and developments abounds in the area's geology and history.
- The three dams of the Aspinall Unit are unique in concept and construction. The dams were conceived in the 1950s and built during the 1960s, not only to provide irrigation, flood control, and hydroelectric power but also to provide the ability to manage water for recreation and protection of the unique resources of the Black Canyon of the Gunnison National Monument downstream. The three-dam complex also allows flexible water management of upstream water resources for recreation and irrigation while providing exchange water to the Uncompahgre Valley through the Gunnison Tunnel, a 6-mile, hand-dug tunnel built in the early 1900s, which is recognized as a National Civil Engineering Landmark.
- The quality of water in the Gunnison River has been identified as a natural treasure. The headwaters of this river flow into Blue Mesa Reservoir and from there travel continually westward.
- Blue Mesa Reservoir is one of the largest high-altitude bodies of water in the United States. It provides an exciting diversity of water recreation treating windsurfers, sailboaters, and water-skiers. The three reservoirs provide one of the best cold-water fisheries in Colorado, attracting enthusiasts from throughout the nation and offering a diversity of game fish.
- The rock formations and canyons of Curecanti, which include the upper reaches of the Black Canyon of the Gunnison, tell a story of geologic change that occurred over the course of 2 billion years. Violent volcanic activity and erosion are today revealed in the inspiring pinnacles, cliffs, and mesas of the recreation area.
- The scenic values of the canyon, the needles, the pinnacles, and the reservoirs provide dramatic contrast, which causes visitors to slow down, pause, and reflect on the diversity of the landscape and its spaciousness.
- Curecanti National Recreation Area provides critical winter range essential for the long-term viability of elk, deer, and bighorn sheep. This affords visitors the opportunity to view and enjoy these animals in their natural habitat.
- Curecanti National Recreation Area provides feeding and roosting opportunities and protects existing and potential breeding habitat for endangered species, such as the bald eagle and peregrine falcon. Other species of concern dependent on Curecanti resources include golden eagle, great blue heron, and numerous other migratory birds.
- Curecanti provides one of the best cold-water fishing opportunities in the nation. This is due primarily to the unique spawning Kokanee salmon run occurring in Blue Mesa. The Morrow Point and Crystal Reservoirs' trout fisheries routinely attract fishing enthusiasts from throughout the nation because of the high-quality trout fishing and uniqueness of the canyon environment.
- Habitat within and adjacent to Curecanti National Recreation Area provides the opportunity to reintroduce and establish breeding populations of native Colorado River cutthroat trout.
- Exposures of the Morrison Formation contain fossil evidence of the Mesozoic Era, of which

more recent deposits suggest that musk ox, cave lions, and cheetah roamed Blue Mesa during the ice ages.

- The prehistoric and historic stories of human culture in the Curecanti area are recorded in the traces and tracks left by Native Americans, miners, railroaders, and ranchers. These signs document not only the human struggles to survive but also how changing human value systems, economic, social, and technological changes, and the importance of water have shaped the use and character of the land and its people. Cultural history contains archeological examples of some of the oldest villages found in North America, predating the building of the pyramids. The narrow-gauge railroad exhibited in Cimarron graphically portrays the story of technology's effects of shaping people and using land; the agony and difficulties of building track in narrow canyons in winter where the sun seldom shined; of taking the hard way instead of the easy trail. The finest examples of the railroad are on exhibit at Cimarron.

## ***Black Canyon Of The Gunnison National Monument***

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### **Park Purpose**

The reason or reasons for which Black Canyon of the Gunnison National Monument was set aside as a part of the national park system is called its *park purpose*. Purpose statements are based upon legislation, legislative history, and historic trends.

The purpose statements below reflect the legislative intent for the monument. Other legislation affecting management of the monument includes the 1916 Organic Act, the National Environmental Policy Act, the National Historic Preservation Act, the Wilderness Act, the Archeological Resources Protection Act, and the Endangered Species Act.

The purpose of the Black Canyon of the Gunnison National Monument is to provide for:

- preservation and protection of the spectacular gorges and scenic values.
- protection of natural, cultural, and scientific resources and items of educational interest.
- educational, scientific, and interpretive opportunities.
- preservation of the integrity and characteristics of lands designated as wilderness.
- opportunities for public use and enjoyment of these resources in a manner that will leave them unimpaired for future generations.
- management of monument resources as an integral part of the Gunnison River Basin.

### **Park Significance**

Significance is summarized in statements that capture the essence of Black Canyon's importance to our natural and cultural heritage. Significance statements are not an inventory of significant resources but rather describe the importance or distinctiveness of the aggregate of resources in the park. The following are the significance statements developed for the park through the management assessment process.

- The dynamic evolution of the Black Canyon, involving the forces of heat, pressure, and water action, has created one of the world's premier wild canyons, because of its sheer cliffs, depth, and narrowness, as it towers over the rapidly falling river. It is a visual attraction that draws hundreds of thousands of visitors each year.
- Clean air and panoramic views pale the influence of humans and give a feeling of what once was throughout the west.
- It's the view.
- The monument contains a diversity of plant and animal species, several of which are rare, endangered, or unique to the area. Natural resources provide an unaltered baseline from which to measure changes in regional and global conditions.
- The writing is on the wall. Without opening a book, one can go back over 1.7 billion years of geologic history as these vertical walls tell their story.



- Black Canyon is the centerpiece of geologic diversity in a relatively small area, reflecting 1.7 billion years of geologic evolution.
- The inner canyon wilderness is truly a wild, foreboding place.
- Tourism is a leading industry in the Gunnison Basin. Centrally located in the basin, Black Canyon is an accessible destination that serves many visitors annually and directly contributes to the local economy.
- The establishment of Black Canyon as a unit of the national park system is a symbol of community pride.
- Its position along the Gunnison River combined with its values make BLCA an integral part of ecosystem management of the Gunnison River Basin.
- At every turn, nook, and cranny, Black Canyon affords the opportunity for visitors to discover new vistas of nature and self.
- Black Canyon is a superlative example of continuing river erosion that is accessible to and understandable by the public.
- The combination of depth and narrowness makes Black Canyon a one of a kind setting in North America.
- The sheer size of the canyon creates an experience where you feel the dominance of nature over people.
- The steep gradient of the Gunnison River and the depth and narrowness of the Black Canyon is a physical barrier to the migration of fish, plants, and animals. This has resulted in a

diverse group of isolated biological communities that provide unique opportunities for scientific study, for example, evolution of plants and animals, impacts of migration barriers, and so on.

- The park's canyons and backcountry areas are quiet places where the sounds of nature create an experience for visitors that last a lifetime. You can hear the river flow and the wind in the trees. At times the river talks.
- You can go into the wilderness and experience primal America and bring back a sense of adventure and discovery.
- The canyon is a great place for scientific discovery and environmental education. It is a living classroom providing unique insights into geology, water and wind erosion, air quality, wildlife habitat, and cultural history.
- The magnificence of the canyon—its spectacular depth and color—defy description. It touches the emotion, imagination, and spirit. And a river runs through it!
- People can enjoy the canyon through a variety of recreational experiences that include sight-seeing, fishing, hiking, climbing, kayaking, photography, wildlife watching, meditation, and solitude.

## VISIONS FOR RESOURCES, INTERPRETATION, AND RECREATION

The following vision statements are based on input received during the management assessment. They are short narratives relating “what could be” in the future and are used in evaluating the appropriateness of various alternatives.

### ***Curecanti National Recreation Area***

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Water. Water is a simple compound with important physical properties but its value evolves with generations. Water shaped and carved the land in the Gunnison country for eons. Meltwaters caused rushing streams with tremendous mudslides. Dinosaurs fell. Apatosaur and Diplodocus bones would fossilize. The stark, sagebrush-covered mesas of mud and sandstones would receive little rain. Erosion would slow and life would survive in an arid climate.

Left alone, the Gunnison River would continue to meander and carve. The river would provide a ribbon of life for cottonwoods and willows, native trout, and migrating birds. People would hunt, people would gather, people would cook in rock-lined hearths. Descendants would be remembered in place names—Chipeta, Sapinero, Curicata.

Later, people would explore, migrate, and engineer. The river would present what would seem to be a natural

path to the West, a trail for a railroad. Cattle, sheep, market goods, and people would be transported by a tiny train on a narrow railbed. Communities would grow, tied by the train. The West would grow, and agriculture would expand in the warm desert with enough water.

The high, rugged, dry

landscape would not be interrupted by a narrow green thread, but by three large reservoirs. Blue Mesa would be the largest reservoir in Colorado, storing water for agriculture and power generation. Morrow Point, the first reservoir in the Black Canyon would be formed behind a thin arch, double curvature, concrete dam containing a massive power generating plant. A third reservoir—Crystal—would be held by a dam built for the purpose of regulating downstream riverflows.



Windsurfers at Curecanti National Recreation Area

The reservoirs would interrupt terrestrial migration paths and create flatwater surfaces for migrating waterfowl. The reservoirs and surrounding land would attract hundreds of thousands of visitors. Soon a million people would find the area to relax and pursue a lifestyle of water-based recreation. Sweeping vistas, clear water, and a new refuge for now threatened and endangered species defines the territory called Curecanti National Recreation Area.

The present definition should endure. New uses, new values, new technology will come, yet history will be preserved and told. Decisions will be made by people for the good of future generations. Clear water and sweeping vistas, abundant wildlife, and a harsh, arid ecosystem, balanced by ribbon-like riparian life zones brought generations of people to the area. These values are timeless and fragile. Curecanti will continue to provide refuge and recreation for all future generations.





North Rim, Black Canyon of the Gunnison National Monument  
© David Halpern

## ***Black Canyon of the Gunnison National Monument***

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The spectacular canyon and adjacent uplands known as the Black Canyon of the Gunnison is a special place that touches mind and soul and offers a variety of opportunities to enjoy and contemplate one of nature's foremost scenic wonders. A place where quiet is enhanced by sounds provided by nature—where the continuous roar of the river rushing amidst boulders and over falls attests to the power of the Gunnison to carve out a canyon over 2,000 feet deep. Although upstream dams have partially regulated the Gunnison, it is managed to exemplify a wild river, with flows mirroring natural levels, where the water is unpolluted, and the exceptional recreational, scenic, and educational values of the system are protected. Highly regarded and appreciated for its clean air and panoramic vistas, the rural and undeveloped nature of the landscape adds a pristine appearance that promotes opportunities for discovery and enlightenment. The canyon is, indeed, a living classroom.

For those seeking to expand and expound on the resources and values found in the wilderness and front country, exceptional interpretive opportunities and media are available. A wide variety of activities and challenges includes sight-seeing, hiking, fishing, wilderness backpacking, climbing, and white-water boating. Developed areas and facilities offer modest amounts of visitor conveniences in some areas, which provide a good balance when compared to the primitive opportunities found throughout the monument.

The National Park Service manages the river, canyon, and uplands as a part of the larger Gunnison Basin. Partnerships with a variety of local, state, and federal agencies as well as private organizations help align goals that aggressively protect the natural and cultural resources of the region, including riverine resources, wildlife, superb air quality and visibility, and maintenance of a rural viewscape. This in turn maintains a high quality of life for our neighbors. Additionally, partnerships assist in coordinating a variety of high-quality services that meet our visitors' needs as well as those of the people in nearby communities.

Our children's children will be able to learn from and enjoy the canyon as we have because the canyon is used in ways that are sustainable, leaving the resources unimpaired. Our canyon memories and experiences do indeed last a lifetime.



## **SPECIFIC OBJECTIVES**

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Specific objectives further refine the management objectives completed during the 1993 management assessment workshops. They provide clarity and priorities. These objectives are resource-, geographic-, or issue-specific. They may include products to be produced or conditions to be attained or maintained. As a whole, objectives are interrelated and interdependent. The specific objectives provide a basis for allocating resources and define management regions in the park.

### ***Curecanti National Recreation Area***

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The following resource-, geographic-, and issue-specific objectives apply to Curecanti National Recreation Area.

#### **Prime Resource**

Prime resource lands are defined as those resources that made a direct contribution to establishing the park as a unit of the national park system and are related to the park's purpose and significance. Other lands within the park are also important to protecting and supporting the prime resource, but are not considered to be the prime resource.

Water is considered to be the primary resource of the national recreation area. Fresh water is a particularly important and sensitive ecosystem component. Its physical availability and quality are critical determinants not only of aquatic resources but of a park's overall natural resource conditions. Surface water and groundwater are important in determining site suitability and uses, while also serving as important transport mechanisms. Depending upon watershed characteristics and the hydrologic cycle, water often connects park resources to resources outside park boundaries. Water may thus deliver pollutants generated by

activities outside park boundaries to park waters, or transport pollutants generated within the park to waters outside its boundaries. Similarly, impacts on aquatic ecosystems due to alterations of natural populations or environments will cross park boundaries via the aquatic environment.

#### **Resource-Specific Objectives**

■ **VEGETATION** — Perpetuate native plant life as part of natural ecosystems.

##### *Conditions to be attained:*

- 1) The spread of noxious weeds is controlled.
- 2) Habitat for candidate endangered species is protected or enhanced.
- 3) Trespass livestock and their impacts on resources have been identified, mitigated, and managed.

■ **WILDLIFE** — Perpetuate native wildlife as an integral part of the natural ecosystems.

##### *Conditions to be attained:*

- 1) Endangered and threatened species are protected.
- 2) Habitat fragmentation of bighorn sheep and other large ungulate range is quantified.
- 3) Park works cooperatively with other agencies to develop plans to identify and mitigate causes and impacts of habitat fragmentation.
- 4) Facility development does not adversely impact sensitive wildlife and vegetative habitat.
- 5) Prescribed fire is used, where appropriate, to improve forage and escape terrain for bighorn sheep.
- 6) Strategies for prevention of the spread of domestic sheep diseases to bighorn sheep populations have been developed and are implemented.

■ **WILDLIFE AND FISHERIES** — Maintain and restore aquatic terrestrial habitats to protect their ecological and

aesthetic character and dependent animal and plant communities.

*Conditions to be attained:*

- 1) Harvesting of species will not decrease or conflict with the opportunity for the public to view wildlife in its natural environment.
- 2) There are opportunities to improve aquatic habitat for reintroduction of cutthroat trout, and reintroduction is pursued with appropriate consultation with other agencies.
- 3) The quality sport fishery is maintained.

■ **WILDLIFE** — Manage populations of prairie dogs to minimize a human health hazard and provide for adequate public education.

*Condition to be attained:*

- 1) Prairie dog habitat is modified to reduce the potential for plague.
- **WILDLIFE** — Allow hunting and trapping of game species where such use is specifically authorized.

*Condition to be attained:*

- 1) Harvesting of game species is monitored so that it does not derogate resource values, cause undue safety hazards for the visiting public, or interfere with non-hunting visitation and is consistent with the memorandum of agreement (MOA) with the Bureau of Reclamation (BOR), Colorado Division of Wildlife (CDOW) laws and policies, the primary purposes of the park, and the Colorado River Storage Project (CRSP).
- **WATER** — Manage water resources and aquatic ecosystems to maintain, rehabilitate, and perpetuate its inherent integrity in coordination with the state and other federal agencies and consistent with the Clean Water Act (33 USC 1251 et seq.).

*Conditions to be attained:*

- 1) There is an opportunity to enhance viable populations of sensitive or native species.

- 2) Water quality is maintained at its present high level.
- 3) Groundwater quality is maintained at its present high level.

■ **AIR** — Perpetuate Class II air quality in parks because of its critical importance to visitor enjoyment, human health, scenic vistas, and the preservation of natural systems and cultural resources.

*Conditions to be attained:*

- 1) Facilities and activities within parks are in compliance with Clean Air Act requirements, including state and local regulations.
- 2) Information to document air quality conditions has been acquired.
- 3) A strategy to use available information to remedy existing and prevent future air pollution effects on park resources and values has been developed.

■ **SCENIC** — Maintain a full spectrum of tangible and intangible attributes for which the national recreation area was established. Parks contain various tangible natural and cultural features such as animals, plants, waters, geologic features, historic buildings and monuments, and archeological sites. They also have intangible qualities such as natural quiet, solitude, space, scenery, scenic vistas, a sense of history, sounds of nature, and clear night skies that are important components of visitor use and enjoyment.

*Conditions to be attained:*

- 1) Internal—viewsheds remain generally natural and undeveloped as seen from within the park.
- 2) External—management for viewsheds that are critical to providing quality recreational experiences for park visitors is cooperatively coordinated with adjacent land management agencies, county planning entities, private landowners, and transportation agencies.
- 3) Park development and park facilities do not derogate viewsheds or other scenic qualities.

■ ***PALEONTOLOGICAL RESOURCES*** — Identify, protect, and preserve paleontological resources, including both organic and mineralized remains in body or trace form, for interpretation, education, and scientific research.

*Conditions to be attained:*

- 1) The extent of these resources is identified, inventoried, and protected.
- 2) Interpretation of paleontological resources is provided without endangering the resource.
- 3) The integrity of paleontological resources from effects of human use and fluctuating reservoir levels is maintained.

■ ***CULTURAL RESOURCES*** — Identify, preserve, and, where appropriate, enhance cultural resources for public enjoyment, interpretation, education, and scientific research.

*Conditions to be attained:*

- 1) Cultural sites are inventoried and documented; significant sites are preserved.
- 2) An integrated research strategy has been developed that allows effective and efficient allocation of people and resources.
- 3) Interpretation of archeological resources is provided without endangering the resource.
- 4) A long-range management scheme for preservation and interpretation of narrow-gauge railroad artifacts at Cimarron has been developed.

■ ***VISITOR USE AND LANDS*** — Determine the appropriate levels of visitor use and experience and alternative strategies for maintaining the diversity of quality visitor experiences consistent with Curecanti NRA's purposes and significance.

*Conditions to be attained:*

- 1) A plan has been developed with public input to guide the park in ensuring a quality visitor experience, resource conservation, and

development of only those facilities deemed necessary and appropriate.

■ ***INTERPRETATION*** — Determine the level of government and private sector educational services, using state-of-the-art methodologies to enhance the visitor's experience and provide educational and interpretive programs.

*Conditions to be attained:*

- 1) Park continues to serve as a center for outreach programs with school systems, developing seminars and curriculums.
- 2) Educational programming is provided year around at existing park facilities using appropriate natural and cultural park themes.

■ ***COMMERCIAL SERVICES*** — Identify the optimum level of commercial services to be provided and their complementary role in accomplishment of the park mission. Commercial services include anything offered to the public or private individuals, in which park resources are used and that results in compensation of any kind to an individual, organization, or corporation. Compensation may be "for profit" or "non-profit" under local, state, or federal law.

*Conditions to be attained:*

- 1) A commercial services plan has been completed to provide long-term strategic guidance for management of commercial services.
- 2) Consistent with the Concessions Policy Act of 1965, the commercial services plan evaluates, through the planning process, those services that are necessary and appropriate for the present and future visitors to each park.
- 3) The commercial services plan identifies:
  - commercial services and facilities that are necessary and appropriate
  - levels of services and facilities essential to serve visitors
  - types of facilities necessary to support commercial services



- appropriate areas for facilities that serve visitors
- 4) The type of commercial facilities and services that would complement quality and diverse visitor experiences and resource conservation have been determined.

■ **FACILITIES** — Provide facilities and services that are attractive, safe, accessible, and of high-quality design that are located to minimize their impact on the surrounding landscape and resources.

*Conditions to be attained:*

- 1) The recreation area has appropriately designed and situated visitor facilities, including exhibits that are sensitive to the surrounding environment and readily accessible to all populations.
- 2) Facilities, including employee housing, commercial service operations, and equipment are appropriate, sufficient, and properly maintained for the park mission and visitor use.
- 3) State highway maintenance is accomplished in a coordinated and cooperative manner as consistent as possible with NPS policies and the protection of resources.
- 4) Professional emergency services are provided year-round to park visitors either directly by park staff and/or through innovative cooperation.
- 5) A strategy has been developed to complement and support the Regional Transportation Plan as it relates to Highways 50, 149, and 92 (not including four-lane highway development) and the construction of bicycle paths along these routes.
- 6) Facilities serving various functions are efficiently organized and do not conflict with land use.
- 7) Maintenance and administration facilities are organized in a fashion that protects resources and meets visitor needs.

## Geographic-Specific Objectives

■ **RIPARIAN RIVERINE** — Preserve natural riverine processes and aquatic

habitat, its functions, and its natural and beneficial values while maintaining the area as an active outdoor classroom for park visitors.

*Conditions to be attained:*

- 1) Natural succession processes that provide for shifts in organism abundance and distribution when there are changes in the rates and locations of beach-building and erosion from the river are evident.
- 2) Habitat and species diversity are monitored and maintained.
- 3) A strategy has been developed to determine the level of day use facilities that would complement a quality visitor experience and resource conservation.
- 4) Hunting policy considering safety conflicts with the day use area is determined in cooperation with the Colorado Division of Wildlife.
- 5) Wayside exhibits relating trails, information, and natural processes of the area and an outreach education area are provided.

■ **GUNNISON RIVER CANYON** — Determine level of day use facilities at Wilson's Landing. Determine level of development of roadside pull-offs.

*Conditions to be attained:*

- 1) A plan has been developed that determines the level of day use facilities that would complement a quality visitor experience and resource conservation.
- 2) A plan has been developed that determines the amount of roadside pull offs necessary to complement a scenic driving experience, provide a quality visitor experience, and provide for interpretation of the park's resources.

■ **BLUE MESA** — Determine the appropriate levels of visitor use, experience, the reservoir's carrying capacity, reservoir levels, and alternative strategies for maintaining the diversity of quality visitor experiences consistent with Curecanti NRA's purposes and significance.

*Conditions to be attained:*

- 1) The carrying capacity and the public's perception of what constitutes a quality visitor experience on Blue Mesa (numbers of boats, any use conflicts such as fishermen/jet skiers/water-skiers/windsurfers) has been determined and evaluated in light of resource management and visitor use criteria.
- 2) The appropriate levels of additional launch and/or marina facilities, if any, and their location(s) have been determined.
- 3) Reservoir elevations are cooperatively maintained at appropriate levels throughout the year consistent with quality recreational experiences and protection of natural and cultural resources.

■ **BLUE MESA** — Develop a cooperative approach with adjacent land management agencies, private landowners, and other federal, state, and local agencies to protect viewsheds seen from Blue Mesa that are critical to providing quality recreational experiences.

*Conditions to be attained:*

- 1) Viewsheds remain generally natural and undeveloped as seen from the reservoir.
- 2) Viewsheds that are critical to providing quality recreational experiences for park visitors are protected from inappropriate development.
- 3) Appropriate developments are aesthetic, blend into the surrounding landscape, complement the natural scenery, and have a minimal impact on the affected environment.

■ **LAKE ARMS** — Provide a diversity of recreational experiences appropriate to the lake arms.

*Conditions to be attained:*

- 1) Obtain public perceptions of appropriate levels and types of use, considering both the human experience and resources.
- 2) Recreation activities are consistent with desired visitor experiences in the lake arms.

- 3) Backcountry campsites (boat in and hiking) are located and managed to minimize impact to park resources and provide a quality experience.

■ **LAKE ARMS** — Develop a cooperative approach with adjacent land management agencies, private landowners, and other federal, state, and local agencies to protect viewsheds seen from the lake arms that are critical to providing quality recreational experiences.

*Conditions to be attained:*

- 1) Viewsheds remain natural and undeveloped as seen from the reservoir.
- 2) Viewsheds that are critical to providing quality recreational experiences for park visitors are protected from inappropriate development.

■ **INNER CANYON** — Provide a diversity of recreational experiences appropriate to the inner canyon.

*Conditions to be attained:*

- 1) Appropriate flatwater recreation activities are consistent with desired visitor experiences in the inner canyon.
- 2) Commercial services for the backcountry are consistent with the commercial services management plan, ensuring quality visitor experience in a secluded primitive environment.
- 3) Solitude is maintained for a secluded backcountry experience.
- 4) Backcountry campsites are located and managed to minimize impact to park resources, consistent with a quality visitor experience.
- 5) Hiking trails are located and maintained to provide safe visitor access, consistent with resource management principles.

■ **CANYON RIM** — Develop a cooperative approach with adjacent land management agencies, private landowners, and other federal, state, and local agencies to protect viewsheds seen from the canyon rim to protect resources and enhance interpretive

opportunities that are critical to providing quality visitor experiences.

*Conditions to be attained:*

- 1) Viewsheds remain generally natural and undeveloped.
- 2) Waysides are provided to interpret the resource and provide orientation for visitors.

**Issue-Specific Objectives**

■ *FUTURE DEVELOPMENT*

*SURROUNDING THE PARK* — Parks contain both tangible and intangible resources. Tangible natural and cultural features include animals, plants, waters, geologic features, paleontological resources, historic buildings and monuments, and archeological sites. Intangible qualities include natural quiet, solitude, space, scenery, scenic vistas, a sense of history, sounds of nature, and clear night skies. These attributes are important both to the conservation of resources and to their use and enjoyment by the public. There are two areas of special concern that could be impacted by inappropriate development of surrounding lands—water quality and aesthetics.

*Conditions to be attained:*

- 1) A strategy for a local community baseline information system has been developed to provide a better understanding of the physical and ecological processes that shape and contribute to the evolution of Curecanti and the Gunnison Basin.
- 2) Viewsheds remain generally natural and undeveloped as seen from within the park.
- 3) A cooperative strategy for any appropriate private land development adjacent to Curecanti has been developed with land management agencies, private landowners, county planning entities, and transportation agencies so that water quality and aesthetic quality of the park experience are not adversely impacted.

***Black Canyon of the Gunnison  
National Monument***

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The following resource- and geographic-specific objectives apply to the Black Canyon of the Gunnison National Monument.

**Prime Resource**

Prime resource lands are defined as those resources that made a direct contribution to establishing the park as a unit of the national park system and are related to the park's purpose and significance. Other lands within the monument are also important to protecting and supporting the prime resource, but are not considered to be the prime resource.

Prime resource lands for the monument are those lands from the canyon edge to the Gunnison River below, mostly known as the Inner Canyon. The Inner Canyon and the majority of the westernmost upland, consisting of 11,180 acres, is wilderness designated under Public Law 94-567 (October 20, 1976). These lands are managed as part of the National Wilderness Preservation System, designated by Congress and legally protected as wilderness in perpetuity. The Wilderness Act defines wilderness as follows: "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." Wilderness areas are managed for the use and enjoyment of the American people in such manner as will leave the areas unimpaired for future use and enjoyment as wilderness. Management includes the protection of these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. Public purposes of wilderness include recreation, scenic



preservation, scientific study, education, conservation, and historical use.

### **Resource-Specific Objectives**

■ **AIR** — Perpetuate and preserve outstanding air quality in the monument, which reflects its critical importance to visitor enjoyment, human health, scenic vistas, and the preservation of natural systems and cultural resources consistent with the aims of a designated Class I airshed.

#### *Conditions to be attained:*

- 1) Facilities and activities within parks are in compliance with Clean Air Act requirements, including state and local regulations.
- 2) Information and tools needed to document air quality conditions have been acquired.
- 3) A strategy to use available information to remedy existing and prevent future air pollution effects on park resources and values has been developed.

■ **CULTURAL RESOURCES** — Protect, preserve, and develop cultural resources for public enjoyment, interpretation, and scientific research.

#### *Conditions to be attained:*

- 1) Cultural sites—archeological and historic—have been inventoried and documented; significant sites are preserved including Civilian Conservation Corps (CCC) components—North Rim Road and Pulpit Rock and Dragon Point overlooks.
- 2) An understanding of the significance of the pre-history of the area has been attained and communicated to the public.
- 3) A strategy has been developed that helps define and interpret the importance of exploration, settlement, and development of the region, including its mining and agricultural history.
- 4) In concert with Curecanti National Recreation Area, the Bureau of Reclamation, and the Uncompahgre Valley Water Users Association, a strategy has been developed to identify and interpret the significance of water development

in the west and its subsequent impacts on the Black Canyon.

- 5) The importance of local support for the establishment of the canyon as a component of the national park system and subsequent expansion and creation of the Black Canyon of the Gunnison Wilderness has been identified and highlighted.

■ **INTERPRETATION** — Interpretation objectives are integrated and linked with the resource management program.

#### *Conditions to be attained:*

- 1) The interpretive program connects the visitor to the park's resources, builds a local and national constituency, and gains public support, which in turn meets the objective of protecting park resources.
- 2) An outreach component of the program provides vital information to protect resources and gain public support through schools, organizations, and partnerships.

■ **PALEONTOLOGICAL RESOURCES** — Protect and preserve paleontological resources, including both organic and mineralized remains in body or trace form, for public enjoyment, interpretation, and scientific research.

#### *Conditions to be attained:*

- 1) The extent of paleontological resources has been identified, inventoried, and protected.
- 2) Through interpretive opportunities, the public gains an understanding of the significance of the paleontological resources and the role they play as a component of the park's geological/zoological story.

■ **SCENIC VALUES AND SOUND** — Maintain a full spectrum of tangible and intangible attributes for which the national monument was established. Park areas contain various tangible natural and cultural features such as animals, plants, waters, geologic features, historic buildings and monuments, and archeological sites. They

also have intangible qualities such as natural quiet, solitude, space, scenery, scenic vistas, a sense of history, sounds of nature, and clear night skies that are important components of visitor use and enjoyment.

*Conditions to be attained:*

- 1) A strategy has been developed that protects viewsheds, allowing them to remain generally natural and undeveloped as seen from within the monument and Vernal Mesa.
- 2) Development that will be seen from within the park is done in a sensitive way, minimally impacting the visitor experience of a wild canyon setting and blending with the natural landscape.
- 3) Management for viewsheds that are critical to providing quality experiences for park visitors is cooperatively coordinated with adjacent land management agencies, county planning entities, private landowners, and transportation agencies.
- 4) A strategy has been developed to protect the viewshed along the scenic approaches to the monument (Highway 50 to the South Rim entrance and Crawford to North Rim boundary), emphasizing the importance of retaining the rural characteristics of the area along these routes.
- 5) Outstanding natural sound quality, night lighting, and air pollution are improved over 1993 levels.

■ **SOILS/GEOLOGY** — Seek to understand and preserve natural erosion processes as they relate to the monument and the formation of the canyon.

*Conditions to be attained:*

- 1) Accelerated erosion resulting from visitor use and/or management activities has been minimized or prevented.
- 2) Continued research pertinent to the geologic processes that created the canyon and adjacent landscapes is encouraged.

■ **VEGETATION** — Perpetuate native plant life as part of natural ecosystems.

*Conditions to be attained:*

- 1) The spread of noxious weeds is prevented.
- 2) Habitat for threatened and endangered species is protected.
- 3) Permit livestock is managed per the principals of sustainability; incidence of livestock trespass is eliminated by the use of fencing, or where feasible, by alternative controls; where fencing is not erected, resource impacts are identified and monitored to minimize such impacts.
- 4) Prescribed fire is used to mimic natural fire effects in certain areas.
- 5) Natural (pre-dam) river corridor vegetation has been restored and is maintained.
- 6) Impacts of visitor use are minimized.
- 7) Significant vegetation communities (e.g., old growth stands) have been identified and are protected.
- 8) Natural vegetation communities extending across park boundaries are enhanced through common efforts with other entities, minimizing habitat fragmentation in the region.

■ **WATER** — Manage and protect water resources and aquatic ecosystems to maintain, rehabilitate, and perpetuate their inherent natural integrity in coordination with the state and other federal agencies.

*Conditions to be attained:*

- 1) The Gunnison River's flows and flow regime are protected, ensuring sufficient and permanent water flows that mimic a more natural flow regime.
- 2) The extent of springs and seeps have been identified and protected.
- 3) Water quality is maintained at highest level possible, with the assistance of Curecanti National Recreation Area, consistent with the Clean Water Act (33 USC 1251 et seq.) and other applicable federal, state, and local laws and regulations.
- 4) Water quality for the world-class trout fisheries is maintained.
- 5) Other water users and agencies assist in achieving goals through recognition of common



benefits and support to reach mutually agreed-upon goals.

- **WILDLIFE** — Perpetuate native animal life as part of the natural ecosystem in consultation with federal and state agencies.

*Conditions to be attained:*

- 1) Endangered and threatened species are protected and the Service has accomplished its role in recovery of threatened and endangered species found at the monument.
- 2) Habitat fragmentation has been minimized.
- 3) Native Colorado River fish have been restored and/or are delisted.
- 4) The world-class trout fishery is maintained.
- 5) Zoological inventories have been completed and species are monitored to the point that changes in population trends or characteristics can be identified and/or managed.

- **VISITOR USE** — Develop a strategy to determine the appropriate levels of visitor use and experience and alternative strategies for maintaining the diversity of quality visitor experiences consistent with Black Canyon of the Gunnison NM's purposes and significance.

*Conditions to be attained:*

- 1) A strategy has been developed with public input to guide the park in ensuring a quality visitor experience, resource preservation, and development consistent with the noncrowded and pristine nature of the park and maintaining the ability of visitors to have a high-risk adventure experience in the wilderness.
- 2) Wilderness areas are properly monitored for resources, impacts, and usage.
- 3) A strategy to determine and establish a carrying capacity that protects resources and provides a range of experiences has been developed.
- 4) Recreational uses have been evaluated and are permitted when such use is otherwise compatible with park and NPS management objectives and regulations.

- **COMMERCIAL SERVICES** — Identify the optimum level of commercial services to be provided and their complementary role in accomplishment of the park mission. Commercial services include anything offered to the public or private individuals in which park resources are used and that results in compensation of any kind to an individual, organization, or corporation. Compensation may be “for profit” or “nonprofit” under local, state, or federal law.

*Conditions to be attained:*

- 1) A commercial services plan has been completed to provide long-term strategic guidance for management of commercial services.
- 2) Consistent with the Concessions Policy Act of 1965, the commercial services plan evaluates, through the planning process, those services that are necessary and appropriate for the present and future visitors to each park.
- 3) The commercial services plan identifies:
  - commercial services and facilities that are necessary and appropriate
  - levels of services and facilities essential to serve visitors
  - types of facilities necessary to support commercial services
  - appropriate areas for facilities that serve visitors
- 4) The type of commercial facilities and services that would complement quality and diverse visitor experiences and resource conservation have been determined.

- **FACILITIES** — Provide facilities and services that are attractive, safe, accessible, and of high-quality design, adhering to a common architectural theme. Such facilities should be located to minimize their impact on the surrounding landscape and resources.

*Conditions to be attained:*

- 1) Development that will be seen from within the park is done in a sensitive way, corresponds to a common architectural theme while blending

with the natural landscape, and minimally impacts the visitor experience of a wild canyon setting.

- 2) Facilities have been designed and located to protect resources while minimizing impacts to those resources, attract visitors while meeting basic visitor needs, orient and educate the public while enhancing visitor enjoyment, and provide information on the park and surrounding areas.
- 3) East Portal facilities are compatible with the common architectural theme of Black Canyon.
- 4) Road and parking systems are efficient and safe, accommodating moderate growth and consistent with resource management and visitor experience objectives.
- 5) The park and surrounding lands have a coordinated and comprehensive trail system that connects the Inner Canyon and uplands with significant features and resources.
- 6) A strategy has been developed to establish access through Red Rock Canyon.
- 7) Facilities and programs are available for visitors with disabilities.
- 8) Water is available in locations on both rims to meet basic visitor, resource protection, and operational needs.
- 9) Visitor/interpretive facilities complement experiences of visitors who are emotionally touched by their canyon visit.
- 10) Activities and support facilities are coordinated with entities outside of park boundaries.
- 11) Facilities serving various functions have been efficiently organized and do not conflict with land use.
- 12) Maintenance and administration facilities are organized in a fashion that protects resources and meets visitor needs.

### **Geographic-Specific Objectives**

■ **PANORAMIC VIEWS** — Preserve the natural setting that allows the Black Canyon to be seen within the larger regional context.

#### *Conditions to be attained:*

- 1) Visitors are allowed to see and access the area for the larger panoramic views.

- 2) To support visitor access and a quality visitor experience, minimal development is done.
- 3) Air quality for a Class I airshed is maintained for long-distance views (to the San Juans, Grand Mesa, West Elks, Uncompahgre Valley, etc.), which are important parts of the Black Canyon geologic and human history stories.

■ **CANYON BACKDROP** — Preserve and protect the wild setting within which the Black Canyon exists.

#### *Conditions to be attained:*

- 1) Visitors can access the area for recreation purposes while the park maintains a wild setting.
- 2) Development is done in a sensitive way, with minimal impacts to visitor experience of a wild canyon setting, and blends with the natural landscape.
- 3) Scenic easements are managed to perpetuate the natural resources and maintain a wild setting to the greatest degree possible.

■ **CLIFF TOP** — Provide visitors with a variety of recreational viewing opportunities to experience the depths of the INNER CANYON.

#### *Condition to be attained:*

- 1) Development is done in a sensitive way, protecting resources from visitor-use impacts, minimally impacts visitor experience of a wild canyon setting, and blends with the natural landscape.

■ **CLIFFS AND INNER CANYON** — Provide for visitor enjoyment of park resources, consistent with the management of the area for wilderness values.

#### *Conditions to be attained:*

- 1) Development is limited in accordance with wilderness values.
- 2) Visitors have a wilderness experience offering solitude and minimal contact with other people.

- 3) Traditional climbing activities that use low-impact techniques and equipment are supported through a climbing management plan.
- 4) A strategy has been developed to identify acceptable limits of impacts, monitor backcountry use levels and resource conditions, and take prompt corrective action when unacceptable action and impacts occur.

■ **THE RIVER** — Provide for visitor enjoyment of park resources, consistent with the management of the area for wilderness values.

*Conditions to be attained:*

- 1) Development is limited in accordance with wilderness values.
- 2) Visitors experience the river in a wilderness setting that offers solitude, the natural sounds of a wild river, and minimal contact with other people.
- 3) The river flow and regime are managed (in concert with other entities) to closely approximate natural conditions and systems.
- 4) A strategy has been developed to identify acceptable limits of use, monitor backcountry use levels and resource conditions, and take prompt corrective measures when unacceptable actions or impacts occur.

■ **THE WAY IN** — Provide visitors nontechnical or nonmechanized access to the CLIFFS AND INNER CANYON and THE RIVER using natural topography.

*Conditions to be attained:*

- 1) Development is limited in accordance with wilderness values.
- 2) Visitors have a wilderness experience along these access routes—an experience that is associated with solitude, minimal contact with other people, and nontechnical or nonmechanized access.
- 3) A strategy has been developed to identify acceptable limits of use, monitor backcountry use levels and resource conditions, and take

prompt corrective measures when unacceptable actions or impacts occur.

## Issue-Specific Objectives

### ■ **FUTURE DEVELOPMENT**

**SURROUNDING THE PARK** — Help cooperatively guide the appropriate development of lands surrounding the park so that they do not adversely affect the park environment. Parks contain both tangible and intangible resources. Tangible natural and cultural features include animals, plants, waters, geologic features, historic buildings and monuments, and archeological sites. Intangible qualities include natural quiet, solitude, space, scenery, scenic vistas, a sense of history, sounds of nature, and clear night skies. These attributes are important both to the conservation of resources and to their use and enjoyment by the public. Two areas could potentially negatively impact the park environment from inappropriate development of surrounding lands—water quality and aesthetics.

*Conditions to be attained:*

- 1) A strategy for a local community baseline information system has been developed to provide a better understanding of the physical and ecological processes that shape and contribute to the evolution of Black Canyon and the Gunnison Basin.
- 2) Viewsheds remain generally natural as seen from within the park.
- 3) A cooperative strategy for appropriate private land development adjacent to Black Canyon and on access routes leading into the park has been developed with land management agencies, private landowners, county planning entities, and transportation agencies, so that impacts to water quality and aesthetic quality of the park experience have been reduced.



## ECOLOGICAL SYSTEM-SPECIFIC OBJECTIVES

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These objectives, in contrast to those listed for each park, view both parks in the larger context of the region of which they are a part. The parks are viewed without regard to administrative boundaries. As with the specific objectives listed above they can be resource-, geographic-, or issue-specific, however the issue in most cases will determine the region of the ecosystem.

The extent of the ecosystem should include those resources, issues, and items that influence park resources or are influenced by park resources or park management activities. As a whole, objectives are interrelated and interdependent. The specific objectives provide a basis for allocating resources and define the partners for cooperative management efforts. Such efforts are increasingly important as agencies, counties, communities, and other entities have greater impacts on each other and their environments through growth, planning, and other actions. Cooperative efforts assist in recognizing and addressing concerns and areas of mutual benefit and are invaluable in the planning.

■ **ECO: SOCIOLOGICAL** — The overall objective is to manage both parks in the context of their socioeconomic setting. The parks should continue to expand partnerships (federal, state, local, private) to exchange information, to ensure protection of natural and cultural features and resources, and to develop a complete and consistent visitor information package and a variety of information distribution points and programs. The parks will work with other entities involved with tourism industries to focus, emphasize, and coordinate recreational and interpretive opportunities in

marketing what the parks offer in the wider regional context.

### *Conditions to be attained:*

- 1) Parks are engaged in a partnership with other entities to provide information to regional visitors and to facilitate protection of resources.
- 2) Infrastructure and commercial activities are coordinated with entities outside of park boundaries.
- 3) Socioeconomic ecosystem stakeholders have a good understanding of visitor characteristics.
- 4) Long- and short-term recreation use and tourism goals, including use levels and growth, accommodations, and infrastructure, are coordinated between federal, state, and private entities.
- 5) Effective communications have been established with other entities, the public, and special interests.

■ **ECO: WATER** — The overall goal is to manage and protect the regional water resources and aquatic ecosystems to maintain, rehabilitate, and perpetuate their inherent natural integrity in western Colorado in coordination with state and other federal agencies.

### *Conditions to be attained:*

- 1) The Gunnison River's flows and flow regime have been protected, ensuring sufficient and permanent water flows that mimic a natural flow regime.
- 2) Water quality is maintained at the highest level possible, consistent with the Clean Water Act (33 USC 1251 et seq.) and other applicable federal, state, and local laws and regulations.
- 3) Water quality for the world-class trout fishery is maintained.
- 4) Other water users and agencies assist in achieving goals through recognition of common benefits and support to reach mutually agreed-upon goals.
- 5) Interpretive programming is in place that addresses park and regional issues in the context of the Gunnison River Basin ecosystem.

- 6) The park staff is able to inform visitors about resource issues on surrounding lands, and surrounding land management agencies are able to communicate park resource issues to their visitors.
- 7) Both parks are managed as part of the larger Gunnison River Basin ecosystem.
- 8) The hydrologic environment (including flow, flow regime, aquatic life, riparian vegetation, and visitor experience) is managed to maintain natural hydrologic systems from the headwaters to the Colorado River.
- 9) Interpretive programming is active in addressing regional river resource issues, in the context of the Gunnison River Basin ecosystem.
- 10) Research is facilitated in cooperation with other entities.
- 11) An adequate database to support management decisions is in place.

The boundary for this ecosystem is defined as the Gunnison River Drainage, from the headwaters to the confluence with the Colorado River.

■ *ECO: AIR* — The park staff will work with federal, state, and local agencies and groups to perpetuate and preserve outstanding air quality in and surrounding the parks, including the benefits to visitor enjoyment, human health, scenic vistas, and the preservation of the designated Class I and II airsheds.

#### *Conditions to be attained:*

- 1) In a cooperative effort, parks work to ensure that facilities and activities within and adjacent to the parks are in compliance with Clean Air Act requirements, including state and local regulations.
- 2) Parks obtain and use the necessary tools to gather and gain information in a cooperative effort to document air quality conditions for the region.
- 3) Parks assist in an effort to develop a strategy and to use available information to remedy existing and prevent future air pollution effects on regional air quality.

- 4) Parks assist in the protection of the regional Class I and II air quality areas and long-range visibility resources.
- 5) The boundary is defined by the continental divide, the Colorado-New Mexico state line, the Colorado-Utah state line, and the Colorado-Wyoming state line. The region defined as the Grand Canyon Visibility Transport area is a more accurate definition of the airshed for the parks. The NPS works with the other agencies and states within this larger region to protect air resources.

■ *ECO: HISTORY* — The park staff works with other federal, state, local, and private entities to maintain and preserve the resources and stories that capture the geologic history and human experience associated with the Gunnison River. Through these resources and the stories that they tell we can draw a bridge of understanding between present-day people and the natural and cultural resources found here.

#### *Conditions to be attained:*

- 1) Sites associated with the human stories are preserved, and the stories are shared through various cooperative efforts that best carry their message.
- 2) The story of water is told in a comprehensive manner in cooperation with public and private entities to present the epic nature of the events preserved. All parts of the narrative are shared in the Gunnison Basin and related in the context of water development in the West.
- 3) Partnerships are developed as needed to impart the cultures of historic and prehistoric people indigenous to the basin.
- 4) Exploration and settlement of the region has been revealed from the earliest arrivals through present-day people. Characters out of the past that brought mining, railroads, agriculture, and the CCC have been brought to life as they fit into the Curecanti and Black Canyon scene.

■ *ECO: LAND* — The overall goal is to manage and protect the regional land-based ecosystems and to maintain, rehabilitate, and

perpetuate their inherent natural integrity in western Colorado, in coordination with state and other federal agencies.

*Conditions to be attained:*

- 1) Landscapes and their interdependent resources are managed in a manner that does not derogate or cause irretrievable damage to such resources.
- 2) Wildlife habitat and associated migration corridors are managed in a manner that sustains wildlife populations consistent with applicable federal, state, and local laws and regulations.
- 3) Vegetation is maintained to perpetuate biological diversity of communities, and emphasis is placed on natural vegetation while alien or noxious weed species are controlled cooperatively with assistance from county weed districts.
- 4) Grazing is managed in a manner consistent with NPS policies and guidelines, with particular emphasis on the perpetuation of wildlife and associated habitat and the protection of riparian and riverine areas.
- 5) Other land management entities and agencies assist in achieving goals through recognition of common benefits and support to reach mutually agreed-upon goals.
- 6) Interpretive programming is in place that addresses park and regional resource issues in the context of the Gunnison Basin ecosystem.
- 7) The park staff is able to inform visitors about resource issues on surrounding lands, and surrounding land management agencies are able to communicate park resource issues to their visitors.
- 8) Curecanti is managed as part of the larger Gunnison Basin ecosystem.
- 9) Interpretive programming is active in addressing regional land-based resource issues, in the context of the Gunnison Basin ecosystem.
- 10) Research is facilitated in cooperation with other entities.
- 11) An adequate database to support management decisions is in place.

The boundary for this ecosystem is defined as the Gunnison Basin, from the headwaters to the confluence with the Colorado River.



# ***THE PROPOSAL AND ALTERNATIVES***

## **VISITOR EXPERIENCE AND THE PARK ENVIRONMENT**

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Beyond the resource management plan that identifies specific needs relative to individual program areas, such as natural and cultural resources, an overall resource management strategy to protect park resources needs to be developed. This would enable the park to begin monitoring conditions and Ensure that goals related to resource management and visitor use can be achieved. The development of the Resource Opportunity Area concept is the first step in incrementally moving the park unit toward the goal of addressing “carrying capacity.”

Parks are composites of a variety of important natural and cultural resources. People value parks for many sorts of reasons—inspirational, educational, aesthetic, recreational, scientific, spiritual, and economic, among others. Significant differences relating to resource values and visitor use usually exist within different areas of a park. The uniqueness of these various areas and their relationship to one another as well as to lands beyond the park boundary, influence visitor use and management of the park. Therefore, describing a set of alternatives and the park’s affected environment (and ultimately assessing impacts) requires one to identify and categorize the resource values of a park. These pieces of the park are called resource opportunity areas (ROAs) and can extend beyond the boundaries of the park. The evaluation of these areas requires the involvement of public and private interests in the area. The ROAs are referenced in the environmental consequences section to

describe how park resources and visitor experience may be affected.

There are six areas in Curecanti named for their contribution to the way human beings use park resources and for the resources contained within them—riparian riverine, Gunnison River canyon, Blue Mesa, lake arms, canyon rim, and the inner canyon.

There are six areas in Black Canyon named for their contribution to the way human beings use park resources and for the resources contained within them—panoramic views, canyon backdrop, cliff top, cliffs and the inner canyon, the river, and the way in.

ROAs are important to incrementally plan for the protection of park resources from visitor overuse. They illustrate how visitors might relate to and use park resources. They also provide the basis for understanding visitor experiences available within a park. At the same time, the physical resource attributes and visitor experiences are related to each park’s purpose and significance.

ROAs identify sensitive resources, where damage may occur from overuse. By identifying important resources and visitor experiences, the first steps needed to define carrying capacity and protect park resources from overuse are completed. Future VERP planning (Visitor Experience and Resource Protection) will eventually define carrying capacities needed to protect resources.

Along with the specific objectives for each area, ROAs provide the rationale and basis for land allocation decisions.

Each resource opportunity area includes a brief description of the following:

- Outstanding examples of natural, scenic, geological, ecological, floral, faunal, and recreational values for which the park was established.
- Populations of rare plants and animals that are particularly vulnerable because of their small population sizes and genetic isolation.
- Habitat necessary for the survival or reintroduction of federal- or state-recognized threatened or endangered species or candidate species being considered for listing.
- Resources that are unusually sensitive to human use.
- Major known archaeological or important historical resources.





water

#### resource opportunity areas

Gunnison River Canyon (includes water)

inner canyon (includes water)

Blue Mesa (includes water)

lake arms (includes water)

riparian riverine (includes water)

canyon rim

# Resource Opportunity Areas

## Curecanti National Recreation Area

United States Department of the Interior  
National Park Service

616 80.068  
6-96 RMISO



Blue Mesa Lake, Curecanti National Recreation Area  
*Lisa Lynch*

## ***Curecanti National Recreation Area***

### **Resource Opportunity Areas**

Resource opportunity areas (ROAs) are geographic delineations of national recreation area components that contain similarities of character and resource values. Although there may be some characteristics shared among ROAs, other characteristics will be unique to one ROA. The six ROAs identified within Curecanti National Recreation Area are:

- Gunnison River Canyon
- Riparian Riverine
- Blue Mesa
- Lake Arms
- The Inner Canyon
- Canyon Rim

### **Riparian Riverine ROA**

This ROA comprises the primary wetland and riverine environment found within Curecanti National Recreation Area. Within this area, the free-flowing Gunnison River cuts and meanders, demonstrating the forces of nature as it has for a millennium across this floodplain. The area is easily accessible to all visitors because a variety of trails provide access. Picnic facilities and rest rooms are available at the Cooper Ranch and Neversink day use areas. The vegetation is associated with riparian and meadow environments and includes cottonwoods, some more than 100 years old. This ROA serves as a corridor between the Gunnison River Canyon and the entrance to

Blue Mesa Reservoir. This linkage is important for several species of wildlife and the environment is significantly different than that surrounding Blue Mesa.

Slough at Neversink,  
Curecanti National Recreation Area



### ***Highlights of Superlative Resources***

Resources of special significance that occur within the riparian riverine ROA include:

- Wildlife viewing opportunities—rich in a variety of species including bald eagle, moose, river otter, mule deer, great blue heron, and a variety of birds.  
Recreational opportunities—less physically demanding trails that provide significant panoramic views, opportunities to explore away from the highway, and superlative opportunities for trout fishing.



- Cultural resources—areas within this zone have been identified as being seasonally used by American Indians both during historic and prehistoric times.
- Rural Colorado landscape—the area is a reminder of the agricultural use that occurred in this area prior to the creation of Curecanti National Recreation Area.



Lake City Bridge, Curecanti National Recreation Area



## **Gunnison River Canyon ROA**

The Gunnison River Canyon ROA is that segment within the National Recreation Area that provides the visitor with a transition between the riparian riverine and Blue Mesa ROAs. Here U.S. Highway 50 winds its way through the canyon cut by the Gunnison River where it once flowed freely and unimpounded through this reach. For most of the year, the Gunnison River still flows through this ROA. However, during July and August, Blue Mesa Reservoir reaches its peak elevation and this free-flowing stretch of river becomes a flat body of water, accessible by boat to recreationalists enjoying Blue Mesa. Although adjacent to the highway, the canyon walls provide sharp contrast to the rolling high desert and flat mesas that are more characteristic of Blue Mesa. Excellent fishing opportunities are provided here where Beaver Creek enters the Gunnison River.

Development consists of a picnic area at Beaver Creek and a pullout at Wilson's Landing. Views are primarily confined to the river canyon itself up to the point where Steuben Creek enters the canyon at the junction of U.S. Highway 50 and Colorado Highway 149.

### ***Highlights of Superlative Resources***

Resources of special significance that occur within the Gunnison River canyon ROA include:

- Wildlife viewing opportunities—including mule deer, bald and golden eagles, great blue heron, and numerous species of waterfowl.
- Recreational opportunities—including fishing from both the shore and water and ice fishing in winter, birding, and for those willing to exert some effort, rock climbing routes are frequently used in this area.
- Interpretive opportunities—provided through panel displays at Beaver Creek.

## **Blue Mesa ROA**

The Blue Mesa ROA provides the visitor with some of the most premier flatwater recreational opportunities in the United States. Here U.S. Highway 50 winds its way along the shores of Blue Mesa for approximately 22 miles. Blue Mesa Dam, which lies at the westernmost point of the reservoir, is an earthen structure that impounds the water of Blue Mesa Reservoir. The Blue Mesa ROA is the area most visitors experience while visiting Curecanti National Recreation Area. The area provides some of the best Kokanee salmon fishing in the United States as well as excellent opportunities for sailboarding, waterskiing, and sight-seeing.

The vastness of the high desert landscape, high plateaus, and mesas unfolds and the visitor can sense the immense amount of open space that surrounds them. Numerous tributaries that provide the visitor with outstanding opportunities for fishing and hiking flow into Blue Mesa. The Dillon Pinnacles, one of the most outstanding geologic features in the recreation area, rise up from the lakeshore and provide visitors with one of the most breathtaking vistas in the region.

This ROA also includes the bulk of the development that has occurred within the national recreation area. Major visitor support facilities that include visitor centers, developed campgrounds, marinas, and park administrative and housing facilities are all found here. It is important to remember that developments serve as means to provide basic visitor services and to maintain the area.

### ***Highlights of Superlative Resources***

Resources of special significance that occur within the Blue Mesa ROA include:

- Wildlife viewing opportunities—including mule deer, elk, bighorn sheep, bald and golden eagles, sage grouse, great blue heron, and numerous species of waterfowl.
- Recreational opportunities—including fishing from both the shore and water and ice fishing in winter, birding, waterskiing, sailboarding, hiking, and camping.
- Cultural resources—areas in this zone contain the Curecanti National Archeological District.



Willow Creek, Curecanti National Recreation Area  
*Lisa Lynch*

- Interpretive opportunities are provided through evening programs, environmental education in indoor and outdoor classrooms as well as slide programs, panel displays, and hands-on displays in visitor centers.

## The Lake Arms ROA

The lake arms ROA contains areas within the national recreation area on Blue Mesa Reservoir that offer the visitor a recreational opportunity that seems more serene and uncrowded than that of the main body of Blue Mesa. Here, most of the drainages that previously flowed to the Gunnison River now terminate in arms such as Soap Creek, Cebolla, and Lake Fork. The visitor is more in touch with the surrounding landscape and geology because of the narrowness of these lake arms. This area provides the visitor the opportunity to escape the oftentimes crowded main body of Blue Mesa and enjoy the vistas and resources in a less crowded setting. Unmatched vistas sweeping up into the West Elk Wilderness and the narrow, canyon-like environment of the Lake Fork are afforded the visitor who takes the time to enjoy these areas of Blue Mesa. Some cultural resources can also be reached via the lake arms that provide the visitor with the opportunity to experience the pioneer history that is much a part of this landscape.

Mixed vegetative cover provides biological diversity for the area and includes wetlands and riparian communities along the river and its tributaries, mosaics of mountain scrub and high desert sagebrush along the lakeshore and surrounding mesas, and mixed stands of Douglas fir and aspen amid the canyons and along the rim.

As development along ridgelines would be evident from Blue Mesa, this ROA is extremely sensitive in terms of protecting the natural and primitive views still possible from the reservoir. Current development is minimal and includes only closed primitive roads, limited fencing, and activities that occur on some private lands adjacent to the park boundary.

## Highlights of Superlative Resources

Resources of special significance that occur within the lake arms ROA include:

- Wildlife viewing opportunities—especially larger mammals, including mule deer, elk, pronghorn, moose, and bighorn sheep.
- Recreational opportunities—for those willing to exert some effort (but less than required for inner canyon hiking), some of the most spectacular distant and panoramic views are available from Blue Mesa.
- Interpretive opportunities—understanding the values and concepts of ecosystem management and the importance of maintaining unimpaired vistas and viewsheds.
- Colorado landscape—the panoramic views enhance the understanding and appreciation of the vastness of the surrounding landscape that comprises much of western Colorado.

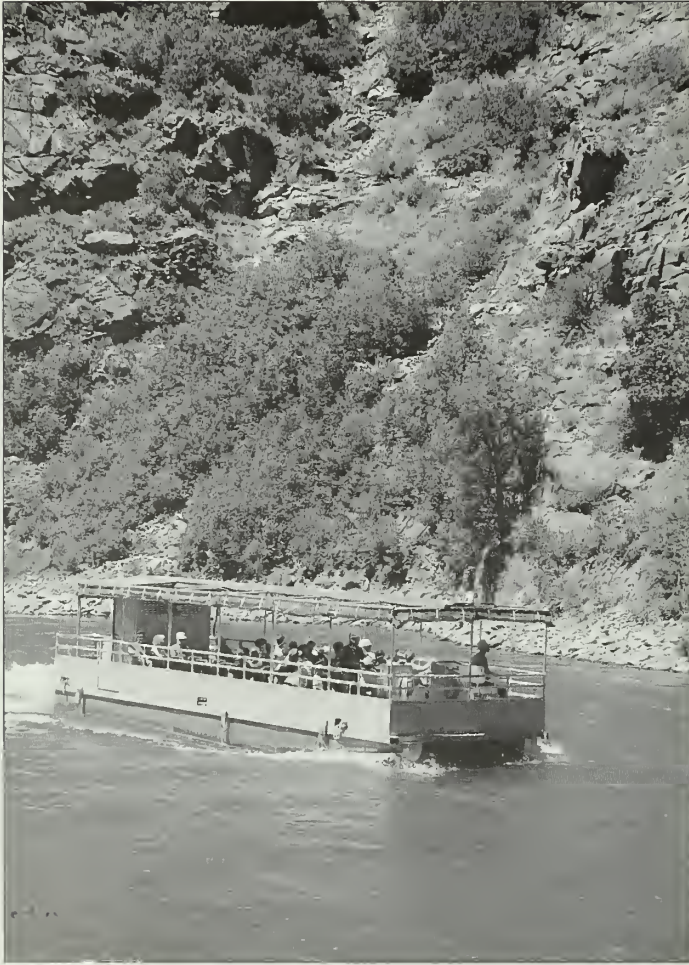


Soda Creek Arm, Curecanti National Recreation Area  
Lisa Lynch



## The Inner Canyon ROA

The inner canyon ROA is the area least used to experience the superlative recreational, natural, and cultural resources of Curecanti National Recreation Area. The area offers



Tour Boat on Morrow Point Lake,  
Curecanti National Recreation Area  
*Joanie Budzileni*

within the canyon. Other alternatives include hiking the Pine Creek Trail and the old railroad grade below Blue Mesa Dam and taking the guided boat tour on Morrow Point Reservoir or portaging boat and gear down trails at Morrow Point and Crystal.

Although the dams and reservoirs themselves tell an important story of water development in the West, the remoteness of the setting provides the visitor with one of the most primitive opportunities in the national recreation area.

### *Highlights of Superlative Resources*

Resources of special significance that occur within the inner canyon ROA include:

- Wildlife viewing opportunities—these include mule deer, bear, and soaring birds of prey.
- Recreational opportunities—include hiking, camping, fishing, and sight-seeing.
- Interpretive opportunities—boat tours and interpretive panels that explain the natural resources of the area and water development in the West.
- Cultural resources—glimpses of railroading history and water development in the West are provided.

the visitor who seeks to spend some time and expend some effort one of the most uncrowded and remote settings in the national recreation area.

For the most part, there is no road access into the inner canyon. The exceptions occur at East Portal and Cimarron. In order to experience the majority of the inner canyon, visitors must hike to destination points



## The Canyon Rim ROA

The canyon rim ROA is the area most visitors use to experience the views into Morrow Point and Crystal Reservoirs. It is also the only exposure many visitors have to the geologic wonder of the Black Canyon of the Gunnison. The canyon rim ROA provides visitors with views of two of the three dams that now impound the Gunnison River. The vistas along the canyon rim provide visitors with spectacular views of the San Juan Mountains to the south and the Grand Mesa area to the west.

Much of the canyon rim ROA is adjacent to Highways 50 on the south and 92 to the north. Much of the area is bordered by private land that blocks access, however, a few trails along the rim and into the canyon are available. Although there are opportunities for cross-country travel, visitors need to be aware of landownership and respect the rights of landowners (property lines are not always well marked).

Visible from the canyon rim ROA above Morrow Point Reservoir is a representative community of the different environments found just below the rim, including mixed stands of aspen and Douglas fir as well as one

of the only accessible stands of pinyon juniper visible from the north rim.

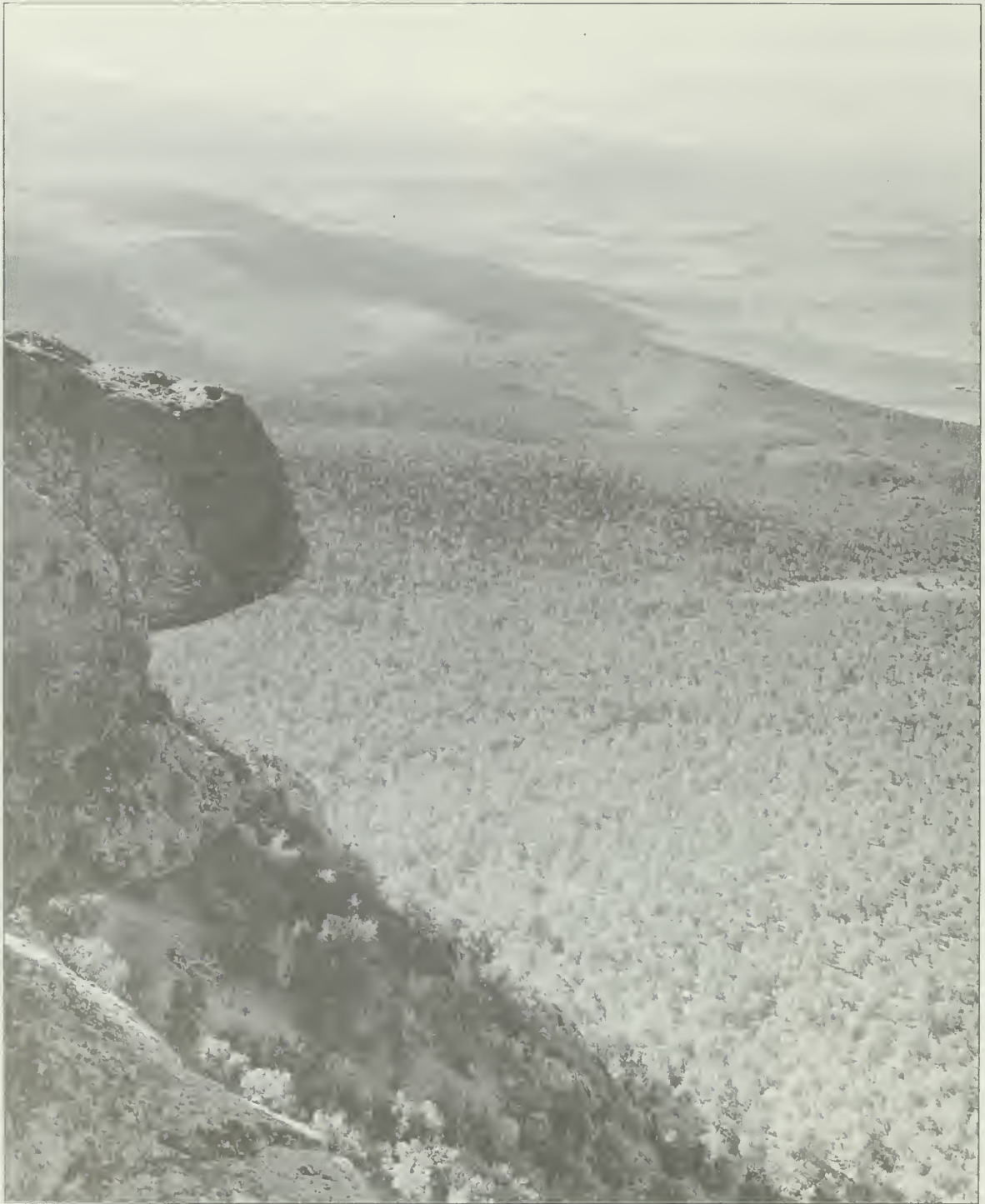
### *Highlights of Superlative Resources*

Resources of special significance that occur within the canyon rim ROA include:

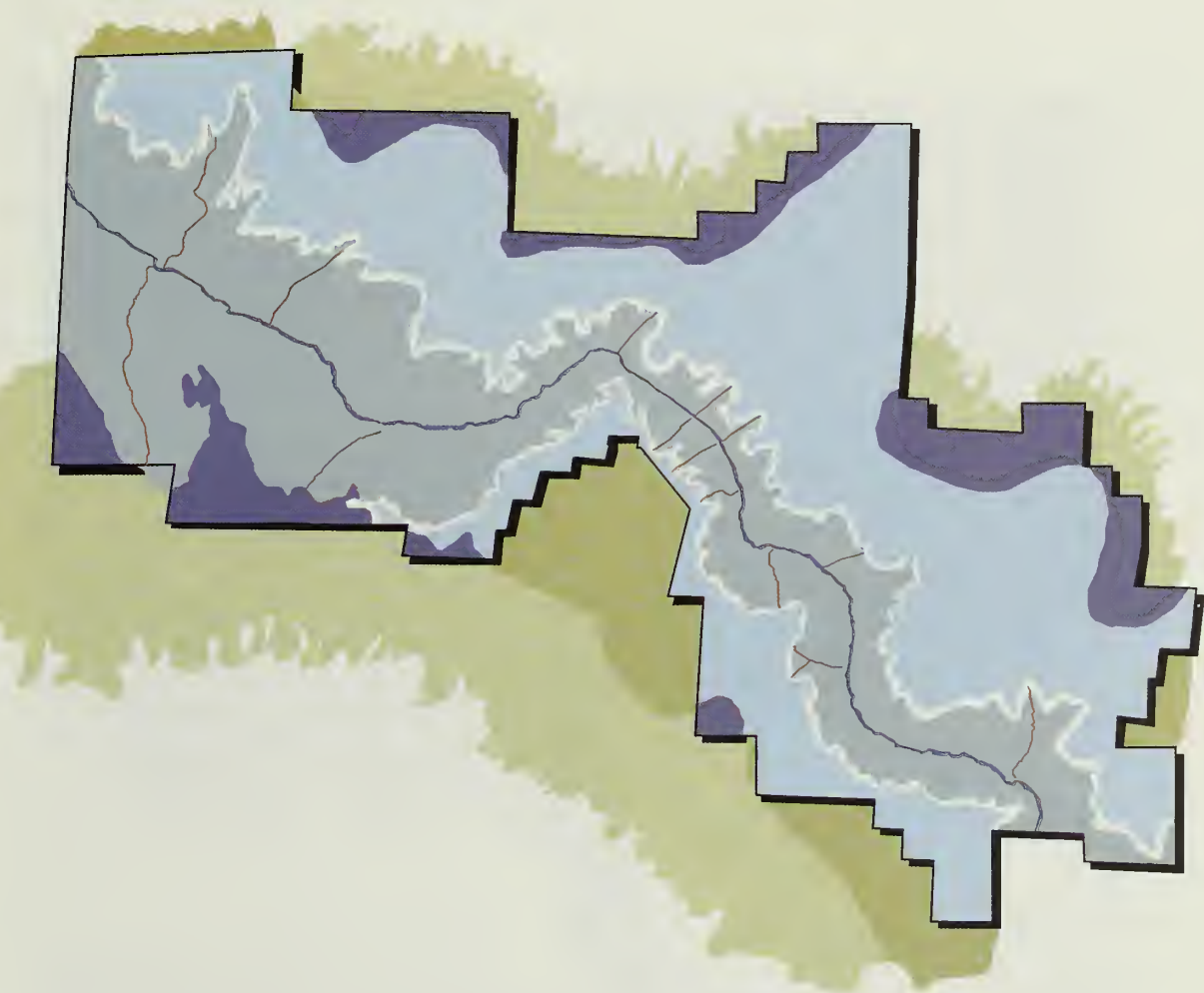
- Wildlife viewing opportunities—especially chipmunk, squirrel, marmot, mule deer, swifts, swallows, and soaring birds of prey.
- Recreational opportunities—this is the primary sight-seeing zone of the canyon rim and inner canyon, offering some of the easiest access to view the canyon. Excellent photo points along short, easy trails are readily available. This is also where visitors began to explore the idea of inner canyon travel.
- Interpretive opportunities—several seasonal ranger walks and snowshoe tours.





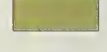

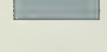



Soap Creek Road, Curecanti National Recreation Area  
Lisa Lynch



Overlooking Bostwick Park from Warner Point Trail, Black Canyon of the Gunnison National Monument  
© David Halpern



-  the river
-  panoramic vista (inside the monument)
-  panoramic vista (outside the monument)
-  canyon backdrop (inside the monument)
-  canyon backdrop (outside the monument)
-  cliff top
-  cliffs and inner canyon
-  the way in



# Resource Opportunity Areas

**Black Canyon of the Gunnison  
National Monument**

United States Department of the Interior  
National Park Service

144 | 80,048  
6-96 RMSO





"Everyone's Favorite Tree" on Dragon Point, Black Canyon of the Gunnison National Monument  
© David Halpern



## ***Black Canyon of the Gunnison National Monument***

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### **Panoramic Vistas ROA**

The panoramic vistas ROA contains areas within the monument that offer the most distant views and sweeping landscapes that extend beyond the park boundary. Examples include areas atop Green Mountain and along portions of the Warner Nature Trail. Views are generally characterized as being unobstructed (in some cases up to 360 degrees) and include distances of a few miles up to about 100 miles.

In addition to its impressive views, this ROA allows the canyon to be viewed in its regional context. In this way it is easier to understand the importance of managing the area as a component of other larger ecosystems. The value of the Class I air quality is magnified on days when visibility allows viewing targets at distances of 60 to 100 miles. Also, the interpretive story is more complete when the San Juan and West Elk ranges, which figure prominently in Black Canyon's geologic story, can be viewed from within this ROA.

Mixed vegetative cover includes areas of pinyon/juniper woodland and mosaics of mountain scrub and sagebrush.

Most of the higher ridges found within the monument occur within this zone. Also, topography that slopes away from the canyon, which is typical due to the nature of

the Gunnison Uplift in which the canyon was formed, permits views not possible closer to the canyon's rim. Soils tend to be more fully developed, having eroded from softer, overlying sandstones.

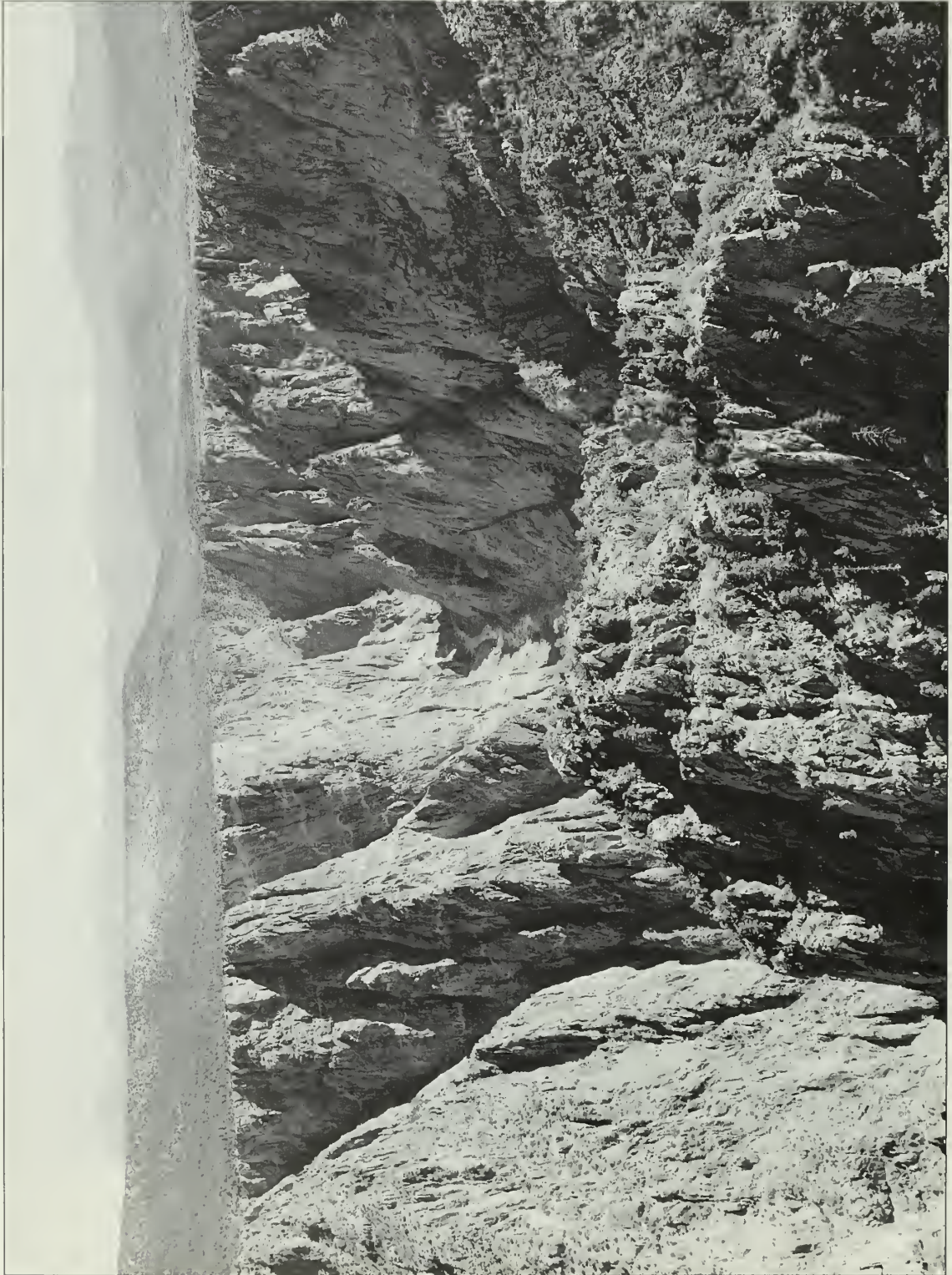
As development along ridgelines would be immediately visible and evident, this ROA is extremely sensitive in terms of protecting the natural and primitive views now possible from the canyon. Current development is minimal and includes only closed primitive roads, limited fencing, and activities that occur on some private lands (many of which the NPS has acquired as scenic easement).

### ***Highlights of Exceptional Resources***

Resources of special significance that occur within the panoramic vistas ROA include:

- Wildlife viewing opportunities—especially larger mammals including mule deer, elk, and bighorn sheep.
- Recreational opportunities—for those willing to exert some effort (but less than required for inner canyon hiking), some of the most spectacular distant and panoramic views are available.
- Interpretive opportunities—understanding the values and concepts of ecosystem management, including the canyon's high-quality Class I airshed.
- Rural Colorado landscape—the distant views enhance the understanding and appreciation of the vastness of wildlands and rural cultural landscape that compose much of western Colorado.

Looking Upriver from Warner Point, Black Canyon of the Gunnison National Monument  
© David Halpern





## **The Canyon Backdrop ROA**

This ROA is the scenic background in which the canyon is viewed. It includes both gentle and steep slopes that form the prominent viewscape as seen from the opposite rim. Examples include the side of Fruitland Mesa on the North Rim, and Vernal Mesa on the South Rim. Views from either rim are greatly enhanced because of the primitive, natural setting created by the canyon backdrop.

Mixed vegetative cover is found throughout this zone. Areas of sagebrush are intermixed with large clusters of mountain scrub, while other areas are dominated by old growth pinyon/juniper woodland. The seasons are highlighted by the color changes that occur throughout this zone, especially during early autumn.

Sedimentary rocks that overlay the older and harder Precambrian-aged rocks of the inner canyon help complete the monument's geologic story. These rocks tell of times long ago, of vast oceans and shallow seas, of mountain-building and erosion, that set the stage for carving out this magnificent gorge. The rocks within the canyon backdrop are more easily eroded than inner canyon rocks. Not only is soil depth greater here, disturbances in this area can accelerate erosion.

This ROA also contains the bulk of development that has already occurred within the monument. Roads and visitor and support facilities are all found here. It is important to realize that not only do these developments provide basic services and amenities for those visiting the canyon and the means for maintaining the area, they are also a component of the view as seen from the opposite, and in some cases the same rim. This ROA is, therefore, one of the most

sensitive zones because it is a primary component of most canyon views.

### ***Highlights of Exceptional Resources***

Resources of special significance that occur within the canyon backdrop ROA include:

- Wildlife viewing opportunities—rich in a variety of species including mule deer, marmots, squirrels, chipmunks, porcupine, bobcat, fox, bear, mountain lion, and a variety of birdlife.
- Recreational opportunities—less physically demanding trails that provide significant panoramic views, opportunities to explore away from the rim, and developed campsites.
- Cultural resources—areas within this zone have been identified as being seasonally used by American Indians both during historic and prehistoric times; the North Rim Road was an important CCC project of the early 1930s.
- Rural Colorado landscape—the area is a reminder of the natural and primitive nature that at one time composed much of the West.

## **The Cliff Top ROA**

The cliff top ROA is the area most visitors experience and remember while sight-seeing at the Black Canyon of the Gunnison. This is the area of the monument that hugs the canyon rim and may vary in width from 5 to 200 feet to the edge. Some of the overlooks are protected by railings to permit viewing right up against the edge—still, some visitors are reluctant to stand this close even with the railings in place. Other, less well-defined overlooks lack railings, drawing more adventuresome souls to the very edge in an effort to maximize the view.

Viewing the canyon for the first time along the drive in, visitors are surprised that such an abrupt void even exists. This adds to the excitement for visitors as they stand weak-kneed and with a sometimes queasy stomach peering into the vast chasm below. The fact that the canyon is in many places deeper than

it is wide adds to this sense of wonder and awe.

Much of the cliff top ROA is composed of exposed bedrock, including fins of pegmatite that serve as overlooks that loom over the canyon depths. Scattered clumps of mountain scrub, with occasional pinyon or juniper trees, add interest to the bedrock. Visible from the cliff top ROA are the different environments found just below the rim, including groves of Douglas fir, which suggest a wetter climate.

### ***Highlights of Exceptional Resources***

Resources of special significance that occur within the cliff top ROA include:

- Wildlife viewing opportunities—especially chipmunk, squirrel, marmot, swifts, swallows, and soaring birds of prey.
- Recreational opportunities—this is the primary sight-seeing zone, offering some of the easiest access to view the canyon. Excellent photo points along short, easy trails are readily available. This is also where visitors began to explore the idea of inner canyon travel.
- Interpretive opportunities—because this is where the greatest number of visitors experience the resource “up close and personal,” it is also a good place to provide interpretive information and contacts. Their focus is on the canyon.
- Cultural resources—both Pulpit Rock and Dragon Point have overlook construction dating to the CCC work of the early 1930s, and are therefore important as historical resources.
- Scale—it is difficult for some visitors to understand the scale involved in viewing the canyon. Humans seem humbled upon realizing the immensity of what they are looking at.
- Expletives—“It’s the view!”



Devil's Lookout, Black Canyon of the Gunnison National Monument  
© David Halpern



## Cliffs and Inner Canyon ROA

The cliffs and inner canyon ROA represents the core of what is the Black Canyon of the Gunnison. Wallace Hansen wrote of the characteristics of the canyon, “*no other canyon in North America combines the depth, narrowness, sheerness, and somber countenance of the Black Canyon of the Gunnison.*” The dark walls of the canyon, composed of metamorphic rocks of gneiss and schist, helped inspire its name.

Small groves and individual trees and shrubs cling tenaciously to nooks and ledges, while fins and dikes of granitic rock add interest and contrast to otherwise foreboding walls. Islands of rock, long-ago separated from the primary canyon walls, stand like sentries above the Gunnison River.

The river makes its presence known on a continuing basis, evident by the constant sights and sounds as it churns and roars above, around, and below boulders, some the size of small houses.

Unlike at the cliff top, access here is extremely difficult. The highest vertical cliff in Colorado, at 2,280 feet, lies beneath Serpent Point. This portion of the Painted Wall, along with the Chasm Wall just upstream, presents challenges to world-class rock climbers. The East Portal Road, an exception to the above, winds among the cliff edges as a reminder of the development and delivery of water to a thirsty Uncompahgre Valley. The road was instrumental in supporting the construction of the Gunnison Tunnel and later Crystal Dam, both upstream of the monument boundary.

## Highlights of Exceptional Resources

Resources of special significance that occur within the cliffs and inner canyon ROA include:

- Fauna—eyries of the endangered peregrine falcon and bald eagle are protected among the sheer cliffs.
- Flora—The Black Canyon gilia, a rare plant of the region, is known to grow among the vertical cracks of Precambrian metamorphic rock. Seeps and small hanging gardens cling to walls above the river. Relict plant communities are protected on and among islands of rock within the confines of the inner canyon.
- Recreational opportunities—world-class technical rock climbing is popular during the late spring and early fall—wilderness adventure and solitude.
- Cultural resources—the Gunnison Tunnel, just upstream of the monument boundary, is listed as a National Engineering Landmark. The importance of the tunnel leading to water development and settlement of the Uncompahgre Valley cannot be overstated.



Painted Wall Overlook, Black Canyon of the Gunnison National Monument  
© David Halpern



## The Way In ROA

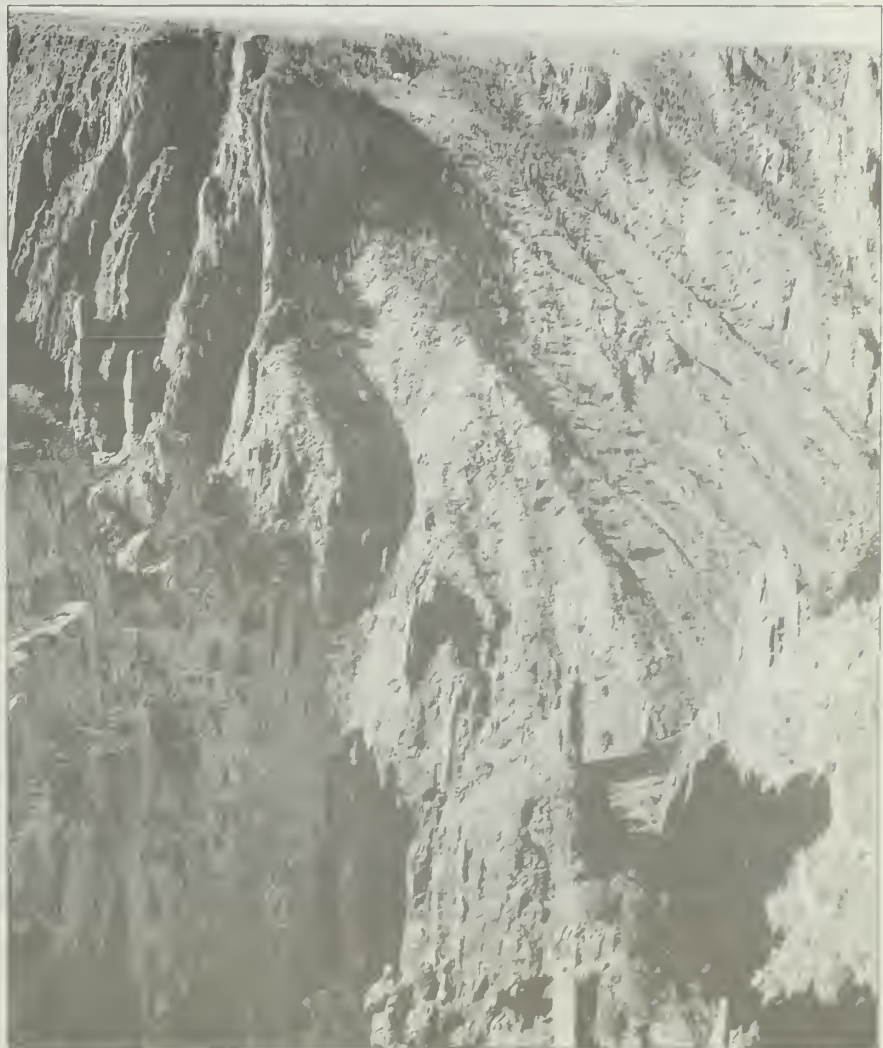
This ROA consists primarily of the inner canyon access routes. Some of these routes are specially identified and recommended to those visitors wishing to hike to the river and include such graphic names as SOB Draw and Slide Draw. Most of these routes are really scrambles down very steep tributaries, and all require visitors to be in excellent physical condition and have a sense of adventure. There are other drainages that are not identified or recommended, but are possible ways to reach the river. Some of these may require technical climbing skills and some climbing equipment to negotiate safely. Loose rock and scree are common on most routes.

Vegetation along the routes is quite a bit different than found in the cliff top ROA, and differs from North Rim to South Rim. Douglas fir and a few aspen prefer the shadier and moister environments found along the South Rim routes, but box elder, Gamble oak, and poison ivy are also regularly encountered here and along the North Rim routes. Vegetation generally provides good shade, especially in the upper reaches of the route. Most routes lack running water (except Red Rock Canyon).

Opportunities for solitude and isolation are generally available, especially on some of the lesser used routes. Quiet is the rule, except for the sound of the river, which is regularly heard (and seen) along the hike in.

For whatever reason folks are hiking to the river, they are usually focused on one thing—getting there.

The level of difficulty is high due to the steepness of the routes and the presence of boulders and loose rock, which at times must be negotiated. Rescue activities for the monument are generally concentrated in this ROA, because hikers that become fatigued or injured will sometimes require assistance.



Kneeling Camel Overlook, Black Canyon of the Gunnison National Monument  
© David Halpern



Below SOB Draw, Black Canyon of the Gunnison National Monument  
© David Halpern



### ***Highlights of Exceptional Resources***

Resources of special significance that occur within the way in ROA include:

- Wildlife viewing opportunities—especially chipmunk, squirrel, birdlife, and occasional mule deer.
- Recreational opportunities—visitors who wish to challenge their hiking abilities and those seeking additional adventure will select this zone. Opportunities for solitude and quiet abound. Excellent photo points are available to those who wish to seek them out.
- Scale—those that use the way in can truly get a sense of the place through the challenges offered by the canyon. The average descent on most routes is 1,800 feet—to sense one's human frailty within the immensity of the canyon is truly a humbling experience.

### **The River ROA**

If the cliffs and inner canyon ROA constitutes the core of the monument, the river ROA is its heart and soul. The river brings life to the inner canyon—over the millennia it has provided power and cutting materials needed to carve out the gorge; it serves as an agent to replenish and cleanse aquatic systems and supports a variety of riparian plant and animal life; it is also what makes the inner canyon such a special place to visit.

Historic flows varied from a late summer trickle to spring floods in excess of 25,000 cfs (cubic feet per second). Construction of three upstream dams—the Aspinall Unit—altered flows to achieve objectives of water storage, flood control, recreation, and hydroelectric power.

Streamside environments are frequently lush with riparian vegetation. Because the river is fed through penstocks near the base of Crystal Dam, water temperatures remain cold year around. Small aquatic creatures

thrive in the streambed. These and other insects form a base for the food chain that supports a Gold Medal trout fishery. Seasonal flow variations enhance the riverine environment, cleansing streambed soils and maintaining river channels that might otherwise be choked by a variety of sediments and erosional debris.

The river is inviting to the human spirit. The roar of the river as it descends along its average gradient of 95 feet per mile soothes the soul. For some, it presents the challenge of catching trophy-sized rainbow or German brown trout using a light-weight rod and a hand-tied fly. Others are challenged by the river's extremes, choosing the kayak as the vehicle to propel themselves through and along its wild turbulence.

### ***Highlights of Exceptional Resources***

Resources of special significance that occur within the river ROA include:

- Flora and fauna—river otter, ringtail cat, a variety of birdlife, and a variety of aquatic life including a Gold Medal trout fishery.
- Water resources—the Gunnison River is the major tributary to the Colorado River within Colorado and contains endangered fish downstream as well as a superb trout fishery.
- Recreational opportunities—although river flows and riverside topography can greatly limit inner canyon hiking, hiking and camping do occur in this area. Wilderness solitude is a part of this experience. Fishing, and to a lesser extent, kayaking, are popular activities.
- Wild and scenic—the Gunnison within and downstream of the monument is eligible for Wild and Scenic River designation due to the outstanding natural values found here.

## MANAGEMENT PRESCRIPTIONS

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*Management prescriptions denote how blocks of land within the park will be managed in the future.* These are strategic in nature and are established through the general management planning process. They set a *broad framework* for the human use of parklands, providing for a variety of visitor experiences, *ever mindful of the Service's commitment to preserve parklands for future generations.*

Management prescriptions (known as prescriptions) are common to all alternatives and provide direction for specific areas of land within a park. Prescriptions articulate management for an area of land considering visitor experience, access, natural resources, cultural resources, facilities, and maintenance. Prescriptions combined in different ways identify the alternatives and are shown on each alternative's map as well as being described in the text.

Each alternative represents a different theme for management and is based on the purpose, significance, and management objectives outlined in the park's statement for management. The prescriptions consider the capability of lands used to support identified uses as described within each resource opportunity area. They provide a framework for further site-specific planning and management decisions on the use and the protection of resources. Prescriptions have been tailored for use in Curecanti NRA and Black Canyon NM.

The prescription concept includes four land-based (primitive, semi-primitive nonmotorized, motorized rural, and developed), three water-based (semi-primitive free-flowing flatwater, semi-primitive flatwater, and flatwater), and two special (scenic easements and protected resource area) management prescription areas. The following table summarizes *land-based prescriptions* based on setting, experience, and activities.

**Table 1. Land-Based Prescriptions**

	Setting	Experience	Activities
<p><b>PRIMITIVE</b></p> 	<ul style="list-style-type: none"> <li>• Natural-appearing landscape</li> <li>• Encounters with others are infrequent</li> <li>• No facilities unless required to protect resources</li> <li>• No motorized access</li> </ul>	<ul style="list-style-type: none"> <li>• Isolation from sights &amp; sounds of man</li> <li>• Feeling of closeness with nature</li> <li>• Opportunity to experience solitude, tranquility, &amp; quiet</li> <li>• High degree of challenge, self reliance, &amp; risk</li> <li>• Knowledge &amp; use of outdoor survival &amp; wilderness skills</li> <li>• Infrequent encounters with</li> </ul>	<ul style="list-style-type: none"> <li>• Primitive camping</li> <li>• Fishing</li> <li>• Nature observation</li> <li>• Hiking</li> <li>• Climbing</li> <li>• Kayaking</li> </ul>
<p><b>SEMI PRIMITIVE</b></p> 	<ul style="list-style-type: none"> <li>• Predominantly natural-appearing landscape</li> <li>• More frequent encounters than in primitive setting</li> <li>• Evidence of facilities that blend with surroundings may be present</li> <li>• Evidence of human occupation</li> </ul>	<ul style="list-style-type: none"> <li>• Predominantly isolated from sights &amp; sounds of man</li> <li>• Opportunity to experience solitude, tranquility, &amp; quiet</li> <li>• Interaction with nature predominates</li> <li>• Knowledge &amp; use of outdoor recreation, survival, &amp; wilderness skills</li> <li>• Occasional encounters with other humans</li> </ul>	<ul style="list-style-type: none"> <li>• Semi-primitive camping</li> <li>• Fishing</li> <li>• Nature observation</li> <li>• Hiking</li> </ul>
<p><b>MOTORIZED RURAL</b></p> 	<ul style="list-style-type: none"> <li>• Predominantly natural-appearing landscape with small-scale modifications</li> <li>• Encounters with others &amp; vehicles are expected</li> <li>• Service facilities present</li> <li>• Evidence of human occupation</li> </ul>	<ul style="list-style-type: none"> <li>• Limited opportunity to experience solitude, tranquility, &amp; quiet</li> <li>• Knowledge &amp; use of outdoor survival &amp; wilderness skills is not essential</li> <li>• Encounters with other humans &amp; vehicles expected</li> </ul>	<ul style="list-style-type: none"> <li>• Semi-primitive camping from boats &amp; vehicles</li> <li>• Fishing</li> <li>• Nature observation</li> <li>• Hiking</li> <li>• Interpretive activities</li> </ul>
<p><b>DEVELOPED</b></p> 	<ul style="list-style-type: none"> <li>• Predominantly modified landscape with facilities to provide for major visitor services in a substantially modified environment with a natural-appearing backdrop</li> <li>• Constant encounters with others &amp; vehicles</li> <li>• Area shows definite signs of human occupation</li> <li>• Motorized access</li> </ul>	<ul style="list-style-type: none"> <li>• Sights &amp; sounds of man are dominant</li> <li>• Limited opportunity to experience solitude, tranquility, &amp; quiet</li> <li>• No knowledge &amp; use of outdoor survival &amp; wilderness skills necessary</li> <li>• Near constant encounters with other humans &amp; vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Developed camping</li> <li>• Park tours</li> <li>• Interpretive activities</li> <li>• Bus tours/recreation</li> <li>• Vehicles</li> <li>• Fishing</li> </ul>



## Land-Based Prescriptions

Specific guidance for each area is described using the following six categories: visitor experience, access, natural resource management, cultural resource management, facilities, and maintenance.

### *Primitive*

Management provides wilderness experiences. Challenge and adventure for visitors are high and are in an environment free of human influence and alteration. Natural processes and conditions would be perpetuated. The setting is composed of an unaltered natural landscape. Encounters with other people 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.

*Visitor Experience.* The primitive area provides abundant opportunities to experience the backcountry wilderness in solitude. It is reserved for hiking, fishing, nature observation, climbing, kayaking, and primitive camping. Off-site interpretation and education are stressed.

Generally visitors are isolated from human sights and sounds. Visitors can experience a feeling of closeness with nature and there is the opportunity to experience solitude, tranquillity, and quiet because encounters with others are few. A high degree of challenge, self-reliance, and risk is prevalent for visitors to this area, and knowledge and use of outdoor survival and wilderness skills are highly recommended.

Evidence of recreational use is generally not readily apparent except along trails, access routes, and backcountry campsites. Resource manipulation is kept to a minimum, but some resource management actions may be required to reduce the impacts of visitor use.

A limited number of interpretive exhibits or signs may be needed to meet objectives of protecting the resource. Rules and regulations are explained to visitors before they enter the wilderness.

Management helps to ensure an experience in an untrammelled, primeval environment. Evidence of other visitors is also small, and there is a sense of being immersed in a natural landscape, without comforts and conveniences. Visitors commit to a high level of time and energy.

*Access.* Access is difficult. The area within designated wilderness is roadless, and visitors may travel cross country or on low-standard trails that provide connections over ridge lines, to the canyon rim and to the river. Discovery and adventure are the order of the day.

Public access is by foot, except for trails also designated for horseback use. Within the wilderness, aircraft use is only permitted for emergencies and necessary administrative functions. Aircraft and vehicle use within the primitive prescription area but outside of wilderness is limited to emergencies and administrative functions.

*Natural Resource Management.* The natural environment is preserved to the maximum extent possible while accommodating low-density backcountry use. Naturally occurring species are maintained or reestablished, and populations of sensitive species are protected and augmented. The introduction of nonnative species is prevented to the extent possible, and attempts are made to eliminate introduced species before they became established. The NPS maintains close control over resource-damaging activities.

Monitoring is carried out regularly, and mitigating measures (revegetation, species

augmentation, and reintroduction of extirpated species) is done as needed. Uses are controlled or dispersed if necessary to protect resources. A backcountry permit system is implemented if resources or solitude is threatened.

*Cultural Resource Management.* Cultural resources selected to illustrate interpretive themes and those listed on or eligible for listing on the National Register of Historic Places would receive stabilization. A cultural resource management plan would be prepared to guide management decisions and address the treatment of individual sites. Coordination and consultation with the State Historic Preservation Officer would be part of the process.

*Facilities.* No developments are allowed, and there are only minimum modifications to the natural environment. Rustic signs, cairns, and primitive trails may be present. No facilities are present in this zone. Additional facilities are provided only if they are essential to protect resources. Designated camping may be required in some areas to protect resources, but no developed campsites are allowed.

*Maintenance.* Maintenance activities serve to protect resources and restore areas disturbed by human activities. There is no recurring maintenance. Power tools are not allowed unless the superintendent determines that such tools are necessary to respond to a life- or resource-threatening emergency.

### *Semi-Primitive Nonmotorized*

Management accommodates visitors wishing to experience each park's superlative natural and cultural resources by foot or horse. Inter-party and NPS contacts are less frequent than those in developed or rural motorized prescriptions and opportunities for solitude are less limited in this area than

in others. Contacts are less frequent during midweek and off-season periods, when opportunities for solitude and seclusion would be greater.

The landscape setting appears predominantly natural, although evidence of facilities that blend with surroundings may be present. Encounters with other people are occasional and there is some evidence of human use. There is no motorized access.

Challenge ranges from low to high according to visitors' abilities. Moderate to extensive resource management activity is required to mitigate impacts associated with visitor use levels. Naturalness would be emphasized, but some human alterations and intrusions would be evident.

*Visitor Experience.* This area brings the visitor in direct contact with many of the park's natural and cultural resources. The natural character of the semi-primitive nonmotorized area is maintained while providing interpretation and trail and cross-country access for large numbers of visitors. This area provides a sense of being immersed in a natural landscape and feels somewhat distant from most comforts and conveniences. The only facilities present are unpaved trails and rustic camping facilities.

A variety of on-site interpretive media is used to present the primary park themes and provide orientation and information. Interpretation and information are provided by rangers within Black Canyon. A permit system could be implemented for camping and use in both trailed and cross-country areas.

*Curecanti Only.* Hunting and trapping are allowed, but are regulated by state law and special NPS directives.

*Access.* Access ranges from easy to difficult. This area is roadless, although some dirt road remnants exist. Access is by low- to high-standard trails or no trails.

Public access is limited to foot traffic or horse. No bicycles or motorized vehicles are permitted. Aircraft use is allowed only in emergency situations. Horse use is confined to designated trails.

*Black Canyon Only.* Horse traffic is prohibited on the South Rim and allowed on designated trails on the North Rim.

*Natural Resource Management.* The natural environment along and away from the trail corridor is maintained to the extent possible with resource manipulation kept to a minimum. Emphasis is placed on minimizing human impacts on sensitive environments, habitats, and species. Unavoidable human impacts within Curecanti would be confined to resistant and less-sensitive environments, avoiding such areas as wetlands, riparian, and highly scenic areas where vistas and viewsheds could be impaired. Unavoidable human impacts within Black Canyon would be confined to resistant and less-sensitive environments, avoiding areas identified as highly scenic environments. Management would reduce or minimize the impacts of nonrecreational uses. Resources and uses would be carefully monitored, and if impairment occurred, mitigating actions such as temporary closures, revegetation, or restrictions on uses would be implemented as required.

*Cultural Resource Management.* Resources or sites that are designated as part of the Curecanti National Archeological District would be accessible to the extent that no degradation to sites occurred. Other resources or sites that are designated as outstanding cultural features might be restored. Sites could be stabilized or

restored to protect the integrity of the resource. Other features designated as outstanding cultural features or listed or eligible for listing on the National Register of Historic Places could be stabilized or restored. To guide management decisions for resources in this area, a cultural resource management plan (CRMP) would be prepared to address treatment of individual sites. Coordination with appropriate NPS staff and the State Historic Preservation Officer would be part of the process.

*Facilities.* Only limited development is provided—major facilities would not be allowed. The primary development would be day use trail systems (low- to high- standard) leading to destination areas or points of special interest and rustic campgrounds. Campground facilities could include fire grates, picnic tables, and vault toilets.

*Maintenance.* Activities include maintaining trails, campgrounds, and interpretive facilities, and resource protection. Hardening of sites could occur as well as the restoration of areas disturbed by human activity. Facilities to provide for the convenience of visitors and their safety would be maintained to lesser standards than those found in the developed area of the park.

### ***Motorized Rural***

Management provides for vehicle access along unpaved roads, which gives a sense of remoteness. Although the area is predominantly natural, sights and sounds of human activity are occasionally encountered. This prescription provides a vehicular alternative to the highly structured experiences in the developed area and the backcountry. It also provides access to water and boating experiences in the semi-primitive motorized flatwater, semi-primitive nonmotorized, flatwater, and free-flowing



flatwater areas. The types of visitor activities to be accommodated include but are not limited to camping opportunities, wayside interpretive exhibits, interpretation along trails, and access to hiking trails. Opportunities for more solitude than experienced in the developed areas could be expected except on peak season weekends. Human interaction and contacts with NPS staff could be moderately frequent during these times and infrequent during the off season. Visitor challenge would be low due to the presence of roads and motorized vehicles. A moderate amount of resource manipulation would be required to mitigate impacts associated with moderate human use levels. Natural conditions would be maintained as much as possible, however, some human intervention and alteration would be evident along roads, at trailheads, and in camping areas. Support facilities such as picnic tables, fire grates, vault toilets, and contact stations may be provided.

*Visitor Experience.* There would be a sense of remoteness and seclusion, but not of isolation and seclusion from human activity. Visitors would be able to reach undeveloped areas of the park from unpaved roads and stay overnight in rustic campsites. For those who are unable to access more semi-primitive areas of the park, this area would provide an alternative and allow a rural experience without the degree of difficulty found in the semi-primitive areas.

A limited amount of interpretation and education is provided. It is designed to supplement the low-profile signs and interpretive exhibit panels placed in selected locations to provide information, offer limited interpretation of park themes, ensure protection of park resources, and provide for visitor safety.

*Access.* Access is moderately difficult. No paved roads would be provided and all access would be on gravel surfaced roads. Trails for hiking could originate from this area. Short interpretive trails could allow visitors to discover areas of special interest. Access for physically challenged visitors could be provided in selected areas to provide an opportunity for these visitors to experience representative park settings.

*Natural Resource Management.* The natural character of lands is preserved to the extent possible while accommodating moderate visitor use levels. Any apparent effects of visitor use would be mitigated, and disturbed areas that caused significant visual impairment would be restored. The cumulative effects associated with unacceptable levels of visitor use at campsites or in other areas of visitor concentration could be mitigated or prevented by ensuring appropriate levels of visitor use.

*Cultural Resource Management.* Cultural resources identified to illustrate interpretive themes and those listed or eligible for listing on the National Register of Historic Places or nominated and placed within the Curecanti National Archeological District could receive moderate stabilization. To guide management decisions for resources, a separate cultural resource management plan (CRMP) would be prepared, which would address treatment of individual sites. Coordination and consultation with the State Historic Preservation Officer would be part of the process in developing the CRMP.

*Facilities.* Only limited development would be provided and few major structures or facilities would be present. Gravel roads, rustic campgrounds, interpretive panels and information signs, unpaved boat-launching facilities, and trailheads are examples of

appropriate facilities for this prescription area.

Fire grates, picnic tables, vault toilets, and water could be provided, but no electricity or sewer connections would be available. Size restrictions could be placed on RVs and trailer-campers.

*Maintenance.* Activities could include maintaining roads and facilities (cleaning, painting, repair, pumpout, etc.), hardening sites, providing for visitor convenience and comfort, protecting resources, and restoring areas disturbed by human activity.

### ***Developed***

This management prescription includes all major park development required to serve visitors and meet the needs of management. It encompasses areas where park development and/or intensive use substantially alter the natural environment or the setting of historically significant resources. This is an area where major visitor facilities, including commercial service facilities, provide an experience that is facility dependent (e.g., campgrounds, visitor centers, marinas). The sights and sounds of boats, vehicles, and people predominate as does the experience that is tied to traffic along the major road corridors of the park.

This area would accommodate the highest levels of use in the park. Visitor activities would be fairly structured and directed and involve little challenge. Support services and facilities could be extensive. Visitor contacts and contacts with NPS and concession personnel could be frequent in this area, especially during peak visitor periods. Contacts could be less frequent during the off-peak season but might still be common compared with other management areas. There could be little or no opportunity for

solitude. Relatively intensive resource management activity may be required to mitigate impacts associated with high levels of visitor use and development. Although natural processes would be perpetuated wherever possible, a high degree of perturbation and human intrusion to the natural environment could continue to be evident.

*Visitor Experience.* This area provides for the primary experience of most visitors, introducing them to many of the park's significant resources and presenting the primary park interpretive themes. Exhibits, films and live presentations, and publications distributed at visitor centers and contact stations would be used to convey an understanding of each park and their natural and cultural resources. Interpretive trails and guided ranger tours would also be used in this area. Other orientation information would assist visitors in planning their stay in the park or region. Campgrounds would be managed under a paid permit system during the peak season.

*Access.* Access would be easy. This area could contain both surfaced and unsurfaced roads, and all roads could be accessed by two-wheel-drive vehicles. Pedestrian access along low- to high-standard trails could allow for visitor access to a variety of environments. Hardened trails could be provided in areas around visitor centers and in other areas of high use identified to give visitors an overview and better familiarity with park resources. Barrier-free design is provided in selected areas to permit visitors with physical impairments to experience representative park settings.

*Natural Resource Management.* The natural character of lands within this area is maintained to the greatest extent possible while accommodating high levels of use.

Wherever possible and appropriate, previously disturbed areas would be used for new or expanded areas of development. New facilities would be designed and located to blend naturally with the environment and would use principles developed for sustainable resource design.

Vista site modifications may be used to improve views in this area. Visitors would be confined or directed to hardened sites, overlooks, boat ramps, and trails to confine and limit resource impacts. Significant soil and vegetation impacts occurring near high use sites could be mitigated through periodic closures, the use of natural materials to more clearly define use corridors, and increased enforcement techniques. Only native species would be used for revegetation.

Landscaping with native species and natural materials, mowing (where appropriate), and selective removal and/or pruning of trees may also be done where appropriate or to enhance visitor safety.

*Cultural Resource Management.* Resources or sites designated as significant cultural features or nominated to the National Register of Historic Places or included in the Curecanti National Archeological District will be preserved or restored depending on the degree of importance to the visitor's understanding of the purpose of the park or settlement and use of the region. All archeological sites would be protected from degradation.

*Facilities.* Major developments are confined to this area. Existing and potential modifications might include visitor centers, surfaced parking lots, boat-launching facilities, transportation systems, limited service and campgrounds, maintenance facilities, administrative facilities, residential areas, water storage and sewage treatment

facilities as well as various other support facilities.

*Maintenance.* Maintenance activities could involve maintaining existing facilities (cleaning, painting, crack sealing, chip and sealing, striping, etc.), hardening sites, landscaping, providing for visitor convenience and comfort, protecting resources, irrigating, and restoring areas disturbed by human activities. Roads, buildings, signs, walks, interpretive displays, landscaping, and other facilities would be maintained on a regular basis. Power tools could be used for routine maintenance activities, and heavy equipment could be used for road and utility system repairs, development, and maintenance.

This concludes the section for land-based prescriptions. Table 2 summarizes water-based prescriptions based on setting, experience, and activities.



**Table 2. Water-Based Prescriptions**

***SEMI-PRIMITIVE  
FREE-FLOWING  
FLATWATER***



**Setting**

- Predominantly natural- appearing landscape
- Occasional encounters with other watercraft
- Evidence of unobtrusive shoreline support facilities for boating & camping
- No service facilities
- Shoreline may show some evidence of human occupation
- No motorized access to the water from the shoreline

**Experience**

- Predominantly isolated from human sights & sounds
- Opportunity to experience solitude, tranquility, & quiet
- Interaction with nature predominates
- Knowledge & use of outdoor recreation survival & wilderness skills
- Occasional encounters with other humans or watercraft

**Activities**

- Semi-primitive camping
- Small watercraft
- Fishing
- Nature observation
- Hiking

***SEMI-PRIMITIVE  
FLATWATER***



- Predominantly natural- appearing landscape with small-scale modifications
- Shoreline service facilities for motorized boating
- Frequent encounters with other watercraft
- Evidence of human occupation on shoreline
- Shoreline accessible by motorized land vehicles

- Limited opportunity to experience solitude, tranquility, & quiet
- Knowledge & use of outdoor survival skills is not essential
- Frequent encounters with other humans or watercraft

- Semi-primitive camping from boats & vehicles
- Park tours
- Fishing
- Nature observation
- Hiking
- Watercraft
- Sailing

***FLATWATER***



- Predominantly modified landscape with facilities to provide for major visitor services in a substantially modified environment with a natural appearing backdrop
- Constant encounters with other watercraft
- Shoreline evidence of human occupation
- Shoreline accessible by motorized land vehicles

- Sights & sounds of humans are dominant
- Limited opportunity to experience solitude, tranquility, & quiet
- No knowledge & use of outdoor survival & wilderness skills necessary
- Near constant encounters with other humans & watercraft

- Designated camping
- Park tours
- Interpretive activities
- Bus tours/ recreation vehicles
- Swimming
- Fishing
- Watercraft
- Sailing
- Windsurfing
- Waterskiing
- Scuba diving

## Water-Based Prescriptions

Specific guidance for each area is described using the following six categories: visitor experience, access, natural resource management, cultural resource management, facilities, and maintenance. These three prescriptions apply only to Curecanti NRA.

### *Semi-Primitive Free-Flowing Flatwater*

Management accommodates visitors wishing to experience the park's recreational, natural, and cultural resources along the free-flowing portions of the Gunnison and Lake Fork of the Gunnison Rivers. Interparty and NPS contacts are less frequent than in developed, motorized rural, or flatwater areas of the park. The area is primarily natural, however, there is evidence of development and the sites and sounds of people. The types of visitor activities accommodated include motorized and nonmotorized boating and fishing from boat or wading. Visitor challenge would range from low to high depending on the season and area of use. During periods of peak runoff, the recreational challenge could be high for short periods. Natural conditions would be maintained as much as possible, but some human alterations could be visible from the water. Support facilities would be limited and would be focused on boat put-in or take-out points only.

*Visitor Experience.* There would be a sense of remoteness, but not of isolation and solitude from human activity. The area is day use only and the only facilities provided would be at put-in or take-out locations. Opportunities to view wildlife would be good, especially in those areas not adjacent to development.

*Access.* Access is easy. Places to launch and retrieve watercraft are not paved, but all are accessible to two-wheel-drive vehicles.

*Natural Resource Management.* The natural environment along the river corridors is maintained to the extent possible. Resource use would be carefully monitored and use could be temporarily zoned to avoid conflicts with endangered species. Water quality would be monitored to ensure no degradation occurs from recreational use.

*Facilities.* Development would be adjacent to the area and would be designed to facilitate access and minimize impacts to the resource.

*Maintenance.* Activities would be limited to maintaining or improving existing facilities and restoring areas adjacent to the area disturbed by human activities or facilities.

### *Semi-Primitive Flatwater*

Management accommodates visitors wishing to experience the park's superlative recreational resources and natural and cultural resources by boat on the surfaces of Morrow Point and Crystal Reservoirs. Interparty and NPS contacts are less frequent than those experienced in developed or motorized rural areas, but more frequent than in semi-primitive nonmotorized areas. Opportunities for solitude are less limited than in developed or motorized rural areas of the park and are enhanced during mid-week or off-season periods when reservoir access is still possible. Challenges range from low to moderate depending on visitors' abilities. Naturalness of the environment would be emphasized, however, human alterations would be evident.

*Visitor Experience.* This area brings visitors into direct contact with many of the park's superlative recreational resources and natural and cultural resources. The natural character of semi-primitive motorized flatwater areas is maintained while providing for interpretation and trail access for large numbers of visitors.

The area provides a sense of being immersed in a natural landscape, and feels somewhat distant from most comforts and conveniences. To experience this area, visitors must commit to spending some time and physical exertion. The only facilities present are unpaved trails and boat docks.

A variety of on-site interpretive media could be used, including boat tours to present the primary park themes. A permit system could be implemented to maintain the semi-primitive character of the area and size restrictions on both watercraft and motors could be implemented to reduce impacts to visitors and resources. Special regulations pertaining to fishing could be developed and implemented in cooperation with the Colorado Division of Wildlife (CDOW) in order to protect fisheries.

*Access.* Access ranges from easy to difficult. The area is entirely roadless, with access by trail.

Public access is limited to foot traffic and motorized and nonmotorized watercraft. No bicycles or vehicles are permitted. Aircraft could be used in emergency situations.

*Natural Resource Management.* The natural environment along trail corridors is maintained to the extent possible, minimizing human impacts on sensitive environments, habitats, and species. Water quality in this area would be regularly monitored to ensure that no degradation or impairment occurs that could affect species management or resources within or outside the park. Management would minimize the impacts of nonrecreational resources. Resources and uses would be carefully monitored and if impairment was detected, mitigating actions such as closure or restricted use in certain areas would be implemented as required.

*Facilities.* Only limited development is provided. Boat docks and vault toilets could be provided. Trail systems ranging from low- to high-standard would be provided that lead to destination or launching points.

*Maintenance.* Activities include maintaining trails, boat docks, and interpretive facilities, providing for visitor comfort, protecting resources, and restoring areas disturbed by human activity. This could be accomplished through the use of a variety of motorized and nonmotorized equipment.

### *Flatwater*

This management prescription includes the surface area of Blue Mesa Reservoir. It encompasses an area of the park where intensive use precludes (for the most part) the visitor from experiencing the sights and sounds of the natural environment without intrusion. The sights and sounds of boats, vehicles, and other people predominate, and the experience includes activities tied to boating on Blue Mesa Reservoir.

This area would accommodate the highest levels of use and visitor density in the park. Visitor activities are centered around flatwater recreation, with fishing being the primary focus of use. Contacts with other parties, NPS, and CDOW staff would be frequent, especially during the peak summer season. There would be little or no opportunity for solitude. Relatively intensive aquatic resource management might be required to mitigate impacts associated with high levels of visitor use and development. Although natural processes would be perpetuated, major alterations and human intrusions would continue to be evident.

*Visitor Experience.* This area provides the primary experience for the majority of park visitors. Flatwater activities include fishing, sailing, waterskiing, sailboarding, and sight-



seeing. There is limited opportunity for remoteness or seclusion, however, lake arms during certain periods would provide for fewer contacts with other groups. Rustic boat-in campsites, accessible only from Blue Mesa, provide the visitor with a more remote/rustic camping experience than campsites accessible by vehicle. For those unable to access the semi-primitive flatwater areas, this alternative provides a similar experience without the degree of difficulty.

Visitor contacts by park rangers and interpreters is designed to provide safety information and information on park resources as well as ensure compliance with regulations.

*Access.* Access would be easy. Access would be by surfaced and unsurfaced roads accessible to two-wheel-drive vehicles. Off-road vehicle use below high waterline could be permitted in areas designated by the superintendent.

*Natural Resource Management.* Water quality and quantity would be monitored, and mitigating actions would be taken to prevent the degradation of water quality and/or the aquatic resources. Level of recreational use would be monitored and

could be restricted if needed to sustain resource values and systems. Fishery resources would be monitored frequently to determine the health of the resource and its relationship to the overall productivity of the reservoir.

The park would work with the Gunnison County Planning Commission and developers to ensure that development adjacent to the reservoir was sensitive to park resources and did not impact or impair resources on park land. To the extent possible, the park would try and ensure that vista and viewshed impacts were minimized.

*Facilities.* Developments in this area could include boat docks and floating marinas, breakwaters, and fuel storage facilities.

*Maintenance.* Maintenance activities would involve maintaining existing facilities and could include the construction of new facilities similar to those described above to accommodate visitor use, administrative use, or to minimize or mitigate resource damage.

This concludes the section for water-based prescriptions. Table 3 summarizes special prescriptions based on setting, experience, and activities.

Table 3. Special Prescriptions

**PROTECTED  
RESOURCE**



**Setting**

- Management is geared to protect recognized fragile significant park resources
- Visitor experiences, access, natural and cultural resource management, development, and maintenance would be controlled or carried out to ensure protection of resources.

**Experience**

- May be limited by regulation, restrictions, or closure

**Activities**

- Limited to those activities that will not impact resources being protected

**SCENIC  
EASEMENT**



- Setting is managed to be complementary to park objectives for a natural appearance

- Natural-appearing backdrop
- No public access or use

- No public activities
- Grazing as permitted under legal contract requirements

## Special Prescriptions

### *Protected Resource Areas*

This management area could include resources that are recognized as fragile or ecologically or geologically significant, especially for sensitive or endangered wildlife or plant species, paleontological resources, and cultural resources. Strict protection measures would be employed to ensure protection and perpetuation of these resources. Human intrusions would be minimized or not allowed. Visitor experiences, access, natural and cultural resource management, development, and maintenance would be controlled or carried out specifically to ensure the protection of these resources.

### *Scenic Easement Lands*

This management area is composed of the private lands within the monument boundary. The lands are located on the North Rim within the scenic backdrop for the canyon. The property remains in private ownership but the government has purchased a conservation scenic easement to protect the view and natural resources found on these properties. Restrictions imposed on the lands include a list of conditions prohibiting certain uses of the property. These include no subdivision or development of the land, no placement of trailers or mobile homes on the property, no hunting, no pesticide use, no mining, quarrying, or sand and gravel removal, no dumping of trash, and no vegetation clearing that exceeds a one-half acre area. Permitted activities include livestock grazing and maintenance of livestock facilities. Public use of these lands is at the owners' discretion. Management of these lands is primarily to protect the scenic qualities they possess.

*Visitor Experience.* The scenic quality of these lands enhances the visitor experience

and adds to the wild quality of the canyon. Use of the lands by visitors is limited since they remain in private ownership.

*Access.* The private landowners have access to their property via primitive, unsurfaced roads. Public access to the area is limited and in most cases is not allowed.

*Natural Resource Management.* The natural environment and the views it provides are maintained to the extent possible within the guidelines of the scenic easement provisions. Noncompatible uses of the land are not permitted under these provisions. Resources and uses would be carefully monitored, and if damage did occur, mitigating actions allowed under the terms of the scenic easement restrictions would be carried out in cooperation with the landowner.

*Cultural Resource Management.* The Service will work with the owners of the property to preserve and protect any resources or sites designated as outstanding cultural features, consistent with the landowners' desires.

*Facilities and Maintenance.* Only limited development, and maintenance of development, is allowed under the terms of the scenic easement provisions—major structures and facilities are prohibited. The type of development allowed is related to management of livestock and their use of the area, such as fences, small stock ponds, and primitive access roads. Existing facilities can be maintained but this maintenance must be directed at preserving the existing character of the facility.





## THE PROPOSAL AND ALTERNATIVES

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Four alternatives including the proposal are presented in this chapter. The proposal represents a new general management plan for Black Canyon of the Gunnison National Monument and Curecanti National Recreation Area. Alternatives provide for distinctly different levels of use, visitor orientation to resources, and visitor services. The same set of management prescriptions noted on the next few pages are applied in various combinations to describe each alternative. Combinations of management prescriptions establish the complete strategy for management of lands within the boundary. Prescriptions are based largely on resource values, with provision made for retention of existing development, and their use varies based on each alternative's general theme.

All alternatives consider a broad strategic management scheme for the park. This does not preclude development options and partnerships outside park boundaries as long as these proposals are supportive and consistent with the park's chosen management direction. Alternative sites within the park boundaries for visitor contact, maintenance, and administration would be evaluated when proposals are presented. Partnerships with other agencies and local entities would be explored to minimize cost, impacts on resources, and provide consolidated services to the public.

Alternatives for visitor use, development, commercial services, and park operations range from no action (continuation of existing management) to establishing new use patterns while broadening protection of natural resources. Alternatives are broad and strategic in nature, requiring additional-site specific environmental analysis to be

completed at the time of conceptual design. This would require an environmental assessment; or if impacts were determined to have significant impacts on the environment, preparation of an environmental impact statement would be required.

Alternative A describes the no-action alternative, what would happen if existing management continues. Alternative B describes an alternative with a balanced mix of recreational experiences, that would capitalize on the unique aspects that each park brings to the recreational experiences. Alternative C describes an alternative that would provide for more primitive recreation experiences and encourage visitors to seek more developed recreational experiences in other areas outside the park boundaries. Alternative D would provide for more developed recreational experiences while at the same time protecting sensitive resources.

### *Pending Legislative Proposals*

Legislation has been introduced several times over past years, in both the House and Senate, to designate Black Canyon as a National Park, establish Curecanti as a National Recreation Area, and heighten protection of the Gunnison Gorge. In 1995, Senator Ben Nighthorse Campbell introduced S. 1424, which if enacted, would affect the status of these three areas. This bill includes four primary components:

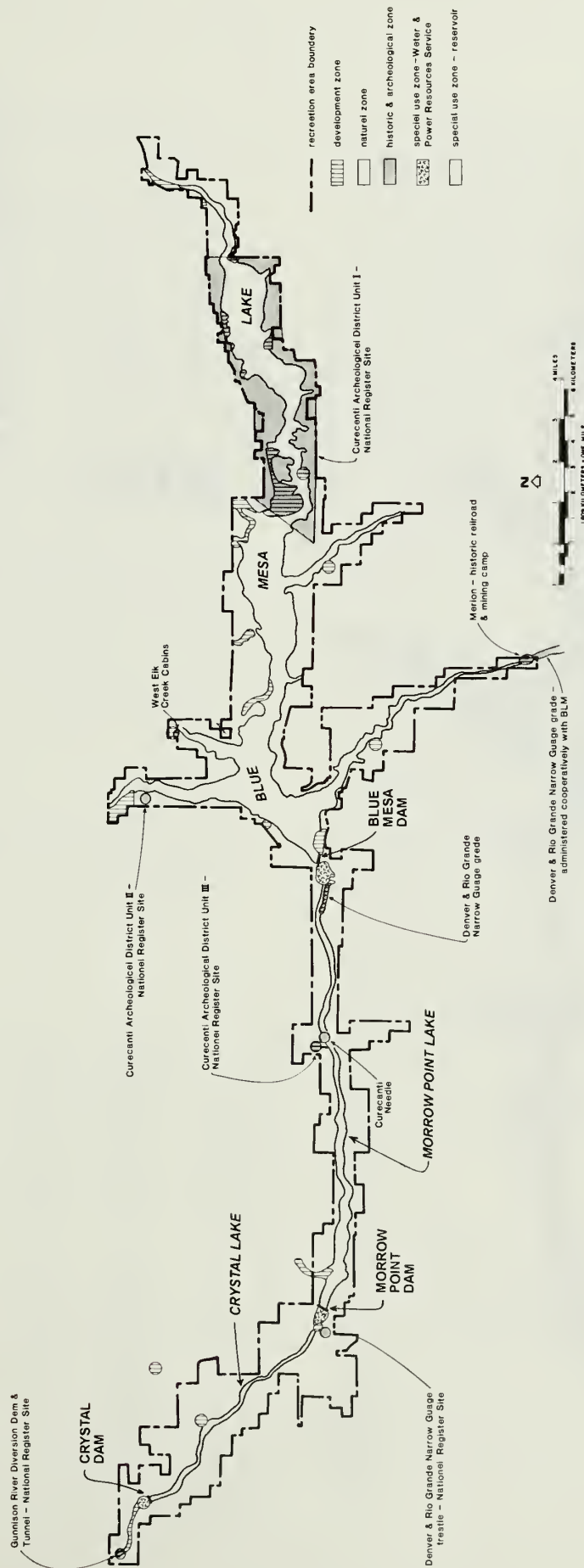
- Renames the National Monument as Black Canyon of the Gunnison National Park, with no adjustments to the present boundary;
- Designates the Gunnison Gorge as a National Conservation Area;
- Establishes Curecanti National Recreation Area as a unit of the national park system;
- And establishes the Black Canyon of the Gunnison National Park Complex.

During recent years the National Park Service (NPS), Bureau of Land Management (BLM), U.S. Forest Service (USFS), Colorado Division of Wildlife (CDOW), and Bureau of Reclamation (BOR) have increased their efforts to keep each other informed of their activities, and in some cases work together on specific projects and issues. The agencies have consulted with each other during planning and environmental compliance.

If S. 1424 becomes a reality, interagency cooperation will increase as a result of mandates of the legislation. The new complex would consist of the park, the conservation area, and the recreation area. Under the proposed legislation, the NPS would still manage the national park and the national recreation area, and the BLM would still manage the Gunnison Gorge. All agencies would need to intensify their efforts to *“ensure that . . . to the maximum extent practical, that personnel, equipment, and other resources are shared among the agencies and that the duplication of effort is reduced or eliminated.”*

Most partnering strategies are part of each alternative and do not depend on legislation passage. The management assessment and planning processes that were used in the development of this plan allow sufficient flexibility for expanded interagency involvement, or modification to include the greater complex, if established.





# Existing Management Zoning

## Curecanti National Recreation Area

Montrose and Gunnison Counties, Colorado  
U.S. Department of the Interior - National Park Service



- legend**
- management prescriptions*
- developed
  - motorized rural
  - flatwater
  - semi-primitive flatwater
  - semi-primitive free-flowing flatwater
  - semi-primitive
  - protected resource area
- ✱ Under the no-action alternative, existing management activities would continue.
  - ✱ Minimal changes would be implemented to bring existing conditions into compliance with existing regulations and policies, subject to funding availability.
  - ✱ Existing visitor facilities would be maintained to support current activities but no new facilities would be built.
  - ✱ Roads would continue to be repaired as needed.
  - ✱ Required improvements to safety and sanitation and access for persons with disabilities would be accomplished as funding permits.
  - ✱ The park would remain unchanged in size, visitor access, and operations.

## Alternative A

### No Action

## Curecanti National Recreation Area

United States Department of the Interior  
National Park Service

## ***Curecanti NRA Alternative A***

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The no-action alternative uses existing zoning as a basis for mapping management prescription. Under the no-action alternative, existing management activities would continue. Minimal changes would be implemented to bring existing conditions into compliance with existing regulations and policies, subject to funding availability. Existing visitor facilities would be maintained to support current activities, but no new facilities would be built. Roads would continue to be repaired as needed. Required improvements to safety, sanitation, and access for persons with disabilities would be accomplished as funding permitted. The park would remain unchanged in size, visitor access, and operations. This alternative is consistent with most existing plans and programs.

The national recreation area would continue to protect its natural and cultural resources while managing for water-based recreation. No legislative action would be required under this alternative.

### **Existing Conditions**

Existing management zoning is updated every two years with each park's statement for management. Zoning represents how the park is currently used or "*what is.*" This can be contrasted with management prescriptions that represent how the park could be used in the future or "*what could be.*"

Curecanti National Recreation Area is composed of three reservoirs impounded on the Gunnison River by the Bureau of Reclamation's Wayne N. Aspinall Unit (September 17, 1980, formerly designated the Curecanti Unit) of the Colorado River Storage Project. Blue Mesa Reservoir, Colorado's largest reservoir (9,000 acres), is over 20 miles long with a shoreline of 96

miles. The reservoir is situated in the Gunnison River Valley, and the valley is characterized by gentle slopes leading to high mesas. Morrow Point Reservoir (800 acres) is an 11-mile-long, fjord-like reservoir with a 24-mile shoreline. Crystal Reservoir (300 acres) has the same appearance but is 6 miles long with 19.6 miles of shore at high water. Eleven miles of the Gunnison River are within the park boundary as are 53 miles of tributary streams.

The recreation area manages 30,000 acres of land surrounding these reservoirs.

### **Existing Management Zoning**

Land and water at Curecanti National Recreation Area are zoned according to what type of use is allowed in each area. The zoning is based on that area's inherent physical character and its potential for accommodating use. The system used for Curecanti National Recreation Area separates the area into four broad categories, as follow:

#### ***Park Development Zones***

These are areas that have high potential to accommodate recreation use without severe adverse affects on the natural environment. This category may include boat-launching areas; campgrounds; picnic areas; and interpretive, administrative, and maintenance facilities.

#### ***Natural Zones***

Included in this category are areas having outstanding or sensitive natural qualities. They may be features or entire ecosystem areas that should be preserved to enhance the integrity of the total park environment. Only minor physical development such as foot trails and interpretive exhibits are permitted in this category.



### ***Historic and Archeological Zones***

Included in this zone are areas of historic or archeological significance to be protected or interpreted as well as structures and sites that are on the National Register of Historic Places.

### ***Special Use Zones***

This category includes land areas controlled by the Bureau of Reclamation for operation of the Wayne N. Aspinall Unit for its primary purposes. It includes the access roads to the three dam sites, power generation and distribution facilities, and related facilities. Reservoir surface areas and areas below the maximum pool elevation of the reservoirs are zoned in the reservoir.

### **Land Use and Management**

For Blue Mesa, use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects. The lake arms would remain natural and undeveloped. A cooperative agreement with BLCA, the BOR, WAPA, and the USFWS would eventually be developed to establish and maintain the appropriate reservoir levels, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.

For Morrow and Crystal Reservoirs, use would remain mostly unchanged. The land area surrounding the reservoirs would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.

This alternative would retain the existing appearance and management of reservoirs and surrounding lands. Where development takes place around the park, the NPS cooperates with agencies to see that

development is sensitive to the environment. The total park area is 41,971.04 acres. Using management prescriptions to describe how the park could or would be managed if current management continued, park management can be broken down as follows:

- About 2,155 acres (5.2%) — Developed MP
- About 427 acres (1.0%) — Motorized Rural MP
- About 9,770 acres (23.3%) — Flatwater MP
- About 1,100 acres (2.6%) — Semi-Primitive Flatwater MP
- About 514 acres (1.2%) — Semi-Primitive Free-Flowing Flatwater
- About 24,012 acres (57.2%) — Semi-Primitive Nonmotorized MP
- About 3,993 acres (9.5%) — Protected Resource

Viewsheds would be maintained in and around the park in a natural and generally undeveloped condition.

The Developed Management Prescription is restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.

### **Resource Management**

A Resource Management Plan (RMP), addressing both cultural and natural resource management was completed in February 1995. The GMP affirms issues addressed by the RMP and continues current management. Information on programs addressing resource management issues are discussed in the RMP.

*Natural Resources.* The new resource management plan sets priorities for resource programs at the park.

*Cultural Resources.* There would be no program to expand interpretation of cultural resources.

## Visitor Use and Interpretation

To date no capacity studies have been done to identify the appropriate levels of visitor use and therefore no strategy has been developed to determine appropriate commercial services and levels at the park.

Educational programming would be provided year-round for visitors and outreach audiences.

## Possible Facility and Development Changes

Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. No construction activities other than maintenance would be planned in any of the areas. Maintenance would include the widening and extension of the existing Blue Mesa Reservoir launch ramps as grant funds from Colorado Department of Public Works permitted and upgrading of rest room facilities.

## Park Operations and Costs

In July of 1995 Black Canyon and Curecanti were administratively restructured to utilize efficiencies of shared staff and resources, reduce duplication of effort, and to gain value-added benefits of increased visitor service (interpretation, protection, and maintenance), resource monitoring, and research. Although the Black Canyon and Curecanti are each operated according to their own distinct purposes and significance, there are some functional and operational similarities that permit sharing of staff and resources. In the present and forecasted climate of budgetary constraints, using one management team to accomplish operational and other management goals will contribute to meeting the needs of both units, while facilitating cooperation with other agencies

and entities in managing both units as a part of the larger Gunnison River Basin.

Generally, services and functions are provided in a variety of areas essential to serve visitors and protect resources and are supported by an administrative team needed to accomplish both of these tasks. These functions include:

- *Facility Management.* Responsible for design, construction, maintenance, and general oversight of all area facilities, including campgrounds, picnic areas, public rest rooms, interpretive facilities, roads and trails, buildings and utilities, launch ramps, and so on.
- *Interpretation.* Responsible for operation of area visitor centers, interpretive wayside and museum exhibits, publications, environmental education and outreach, and park interpretive offerings (guided walks, talks, evening programs, demonstrations, etc.).
- *Resources Management.* Provides monitoring and research of natural and cultural resources, including wildlife, flora, aquatic life, air and water quality, and paleontological and ancestral (archeological and historical) resources.
- *Visitor Protection.* Responsible for providing law enforcement (with an emphasis on protecting park resources and visitors), search and rescue, fire suppression, and fee collection.
- *Administration.* Provides essential support in personnel services, payroll, property, contracting, purchasing, and budget.
- *Concessions.* Provides management and oversight of approved commercial activities.
- *Superintendent.* Responsible for general management and oversight of the parks, including establishing long-term mission, goals, and objectives, setting and/or ensuring appropriate policy and procedure, and liaison with other agencies, government officials, and other entities and organizations.

The current base funding for Curecanti is \$1,992,000. Staffing would continue as shown below, based upon continued availability of sufficient funding. Staffing is

shown as full-time equivalencies, also known as FTEs.

<u>Current Staffing</u>	<u>Permanent</u>	<u>Seasonal</u>
<i>Facility Management</i>	<i>13.0</i>	<i>06.0</i>
<i>Interpretation</i>	<i>05.0</i>	<i>02.0</i>
<i>Resources Management</i>	<i>02.5</i>	<i>01.0</i>
<i>Visitor Protection</i>	<i>04.5</i>	<i>02.0</i>
<i>Administration</i>	<i>04.5</i>	<i>01.0</i>
<i>Concessions</i>	<i>01.0</i>	<i>00.0</i>
<i>Superintendent/Asst.</i>	<i>01.0</i>	<i>00.0</i>
<i>Subtotals</i>	<i>31.5</i>	<i>12.0</i>
<i>TOTAL</i>	<i>43.5</i>	

Park operations would continue at present levels with an emphasis on protecting resources, serving the public, and responding to incidents as they occur. No additional potential development costs would be incurred.





✿ This alternative would emphasize the significance of both natural and cultural resource experiences for visitors of the recreation area.

For visitors wanting to experience natural beauty---there are clear waters and sweeping vistas and abundant wildlife in a harsh, arid ecosystem balanced by ribbon-like riparian life zones that brought generations of people to the area.

For visitors wanting to experience this area's culture---it's the environment people explored, migrated to, and engineered--- the river and its natural path to the West.

✿ Appropriately developed areas would support a range of diverse recreation opportunities, both cultural and natural. These areas integrate visitors into the story of the West by interpreting various advancements contributing to the region's development.

✿ Use of the reservoir would emphasize boating recreation in a more rural environment. The land area surrounding the reservoir within the recreation area would have some additional shoreline development. The lake arms would remain natural and undeveloped. Maintenance and protection projects would remain ongoing.

## Alternative B

### *Providing Natural and Cultural Experiences*

## Curecanti National Recreation Area

United States Department of the Interior  
National Park Service

## ***Curecanti NRA Alternative B***

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This alternative is the National Park Service's proposal and emphasizes both natural and cultural resource experiences for visitors. On the natural resource side, it's experiencing the clear water and sweeping vistas, abundant wildlife in a harsh, arid environment, balanced by ribbon-like riparian life zones that brought generations of people to the area. On the cultural resource side, it's experiencing the same environment that challenged early explorers, settlers, and engineers of the region.

Appropriately developed areas would support a range of diverse recreation opportunities, both cultural and natural. These areas would integrate visitors into the story of the West through the various advancements that contributed to settlement and development.

### **Land Use and Management**

For Blue Mesa, the use of the reservoir would emphasize boating recreation in a rural environment. The land area surrounding the reservoir within the park would have some additional shoreline development. The lake arms would remain natural and undeveloped. Ongoing maintenance and protection projects would continue.

A cooperative agreement with the NPS, BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa Reservoir, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.

For Morrow and Crystal Reservoirs, use of the reservoir would remain mostly unchanged. The land area surrounding the reservoir would remain relatively

undeveloped and unchanged except for ongoing maintenance and protection projects.

This alternative would provide for a moderate increase in facilities that support high-quality recreational experiences and activities. Some facilities would be redesigned or added. This alternative would set a management tone that emphasizes that diversity of water-based recreational experiences with appropriate levels of development. The total park area is 41,971.04 acres. Using management prescriptions to describe how the park could or would be managed under the proposal, park management can be broken down as follows.

- About 2,281 acres (5%)—Developed MP
- About 414 acres (1%) — Motorized Rural MP
- About 9,770 acres (23%) — Flatwater MP
- About 1,100 acres (2.6%) — Semi-Primitive Flatwater MP
- About 514 acres (1%) — Semi-Primitive Free-Flowing Flatwater
- About 23,899 acres (57%) — Semi-Primitive Nonmotorized MP
- About 3,993 acres (10%) — Protected Resource

Where development takes place around the park, the NPS cooperates with agencies to see that development is sensitive to the environment. Viewsheds are maintained in and around the park in a natural and generally undeveloped condition.

The developed management prescription is restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.

## Resource Management

A resource management plan (RMP) addressing both cultural and natural resource management was completed in February 1995. The GMP affirms issues addressed by the RMP and continues current management. Information on programs addressing resource management issues are discussed in the RMP.

*Natural Resources.* The following are additional strategies that would be employed by this alternative to address specific objectives set for the park.

- The new resource management plan sets priorities for resource programs at the park.
- Habitat fragmentation from new developments in bighorn sheep and other large ungulate habitat needs to be identified and mitigated; prevention strategies would be developed with other land management agencies

*Cultural Resources.* There would be additional programs to expand interpretation of cultural resources.

## Visitor Use and Interpretation

Educational programming is provided year-round for visitors and outreach audiences.

## Possible Facility and Development Changes

Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.

### *For the Riparian Riverine Area:*

- A multipurpose (bike/hike) path from the east boundary along Highway 50 to Elk Creek and Highway 149 to the boundary south of Iola on the way to Lake City could be constructed.

- Riverway would be transferred to the City of Gunnison.
- Increased formal trail access to the river could be constructed in the Neversink/Coopers Ranch area.
- A formal day use area—toilets, picnic tables, and parking—could be developed in the South Beaver Creek area.

### *For the Gunnison River Canyon:*

- The pull off at Wilson's Landing would be hardened and delineated for day use operations.
- Selected turnouts would be hardened throughout the canyon.

### *For Blue Mesa:*

- At Elk Creek, an appropriately designed and located sewage treatment facility would replace the current lagoons.
- A day use area (for picnicking and other activities) would be constructed at the Old Highway 50 area.
- At the Bay of Chickens, a day use area would be constructed and landscaped, providing for picnicking and other recreational activities as appropriate. Adequate parking would also be provided.
- A new launch ramp area has been tentatively identified at Old Stevens. A carrying capacity study must be completed before a determination could be made on the appropriateness of another launch facility.
- At Pine Creek, the access road would be paved to the BOR gate above Blue Mesa dam.

### *For the Inner Canyon:*

- At the East Portal, the NPS would modify or replace its existing facilities so that they conform to a common architectural theme. This includes water and sewage system replacement.
- There would be no changes at Gateway or on Crystal Reservoir.

### *For the Canyon Rim:*

- At Cimarron, the existing metal buildings would be replaced to conform to the area's architectural theme.

Costs for the above improvements would be estimated at the time of project design.



## Park Operations and Costs

Some increases in park operations would be required to meet the needs created by this alternative's emphasis on moderately increasing facilities and opportunities for quality water-based recreation. The greatest needs would occur in the operational areas of facility management (additional facilities to be constructed and maintained) and interpretation and visitor protection (in order to serve an anticipated moderate increase in visitation). Some increases in resource management are anticipated for evaluation of project proposals and potential impacts on natural and cultural resources and to monitor impacts of increased usage.

The estimated range of additional FTEs that would be required to meet these needs are 1.0 to 1.5 for each of the four programs, or a total of 4 to 6 FTEs. The associated range of additional cost would be \$120,000 to \$200,000. Additional costs that could be incurred from potential development would range between 1.1 and 3.3 million dollars, depending on partnering opportunities.

## Future Plans and Studies

Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.

- Prescribed fire management plan would be completed. This plan would be used to establish the appropriate fire management policy.
- A prairie dog plan would be updated to guide management actions.
- A visitor experience and resource protection plan would be developed for the park. The plan would establish development and design capacities for a range of potential resource experience opportunity areas. It would also establish the physical capacity for each reservoir based upon the desired future visitor experience. The first part of the study would determine carrying capacity of Blue Mesa, quality of







experience to be provided, and need for future launching and/or other facilities as use increases beyond current capacity.

- A long-range management plan for the preservation and interpretation of the narrow gauge railroad and artifacts at Cimarron need to be completed.
- A commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.
- All studies and inventories identified in the RMP need to be completed.
- A viewshed analysis of sensitive areas around Blue Mesa would be completed to identify areas that are necessary in protecting the semi-primitive character of the park. Cooperative management through scenic easements and agreements with adjoining agencies, such as BLM or USFS, would be used to facilitate protection.



### legend

#### *management prescriptions*

	developed
	motorized rural flatwater
	semi-primitive flatwater
	semi-primitive free-flowing flatwater
	semi-primitive
	protected resource area

✿ This alternative would emphasize a narrow band of water recreational experiences on a manufactured system of high-elevation reservoirs, reflecting an attempt to provide superlative recreation experiences.

✿ A limited number of high-quality developed areas would support recreational opportunities. These areas would focus visitors on the high-quality recreational experiences and activities that the recreation area can provide. Developments would support water-based recreational experiences in an otherwise relatively undeveloped environment.

✿ Use of the reservoir would emphasize boating recreation in a semi-primitive environment. The land area surrounding the reservoir would have less shoreline development within the park than it has now. The lake arms would remain natural and undeveloped. Maintenance and protection projects would remain ongoing.

## Alternative C Water-Based Recreation

### Curecanti National Recreation Area

United States Department of the Interior  
National Park Service

616 80,066  
6-96 RMISO

## ***Curecanti NRA Alternative C***

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This alternative would emphasize a narrow band of water recreational experiences on a system of high elevation reservoirs, reflecting an attempt to provide superlative recreation experiences.

A limited number of high-quality developed areas would support recreation opportunities. These areas would focus visitors on the high-quality recreational experiences and activities that the recreation area can provide. Developments support water-based recreational experiences in an otherwise relatively undeveloped environment

### **Land Use and Management**

*For Blue Mesa*, use of the reservoir would emphasize boating recreation in a semi-primitive environment. The land area surrounding the reservoir would have less shoreline development that it has now within the park. The lake arms would remain natural and undeveloped. Ongoing maintenance and protection projects would continue.

A cooperative agreement with the NPS, BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.

*For Morrow Point Reservoir*, use of the reservoir would emphasize boating recreation in a semi-primitive environment. Commercial service tours would be eliminated and the area surrounding the reservoir within the park would have less shoreline development. Ongoing maintenance and protection projects would continue.

*For Crystal Reservoir*, use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.

This alternative would attempt to decrease developments within the park that are within view of Blue Mesa Reservoir. It would set a management tone that emphasizes that developments would be limited to support high-quality recreational experiences and activities. Some park facilities would be removed or altered. The total park area is 41,971.04 acres. Using management prescriptions to describe how the park could or would be managed under the minimum development alternative, park management can be broken down as follows:

- About 2,088 acres (5%) — Developed MP
- About 512 acres (1%) — Motorized Rural MP
- About 9,770 acres (23%) — Flatwater MP
- About 1,100 acres (3%) — Semi-Primitive Flatwater MP
- About 514 acres (1%) — Semi-Primitive Free-Flowing Flatwater
- About 23,757 acres (57%) — Semi-Primitive Nonmotorized MP
- About 4,230 acres (10%) — Protected Resource

Where development takes place around the park, the NPS cooperates with other agencies to see that development is sensitive to the environment.

Viewsheds are maintained in and around the park in a natural and generally undeveloped condition.

The developed management prescription is restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.



## Resource Management

A resource management plan (RMP), addressing both cultural and natural resource management was completed in February 1995. The GMP affirms issues addressed by the RMP and continues current management. Information on programs addressing resource management issues is included in the RMP.

*Natural Resources.* Activities and programs would include the following:

- The new resource management plan sets priorities for resource programs at the park.
- Habitat fragmentation from new developments in bighorn sheep and other large ungulate habitat needs to be identified and mitigated; prevention strategies would be developed with other land management agencies.

*Cultural Resources.* There would be a program to expand interpretation of cultural resources.

## Visitor Use and Interpretation

Educational programming would be provided year-round for visitors and outreach audiences.

## Possible Facility and Development Changes

Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.

*For the Riparian Riverine Area:*

- Riverway would be transferred to the City of Gunnison.

*For the Gunnison River Canyon:*

- There would be no additional enhancement to existing pull offs and some pull offs could be removed.

*For Blue Mesa at Elk Creek*

- The campground would be significantly reduced or removed.
- Park housing would be reduced significantly and limited to required occupancy personnel.
- All administrative and management functions would eventually be moved to Gunnison.
- The sewage lagoon would be removed and/or relocated.
- The shop/maintenance support facilities would be decreased.
- The concession boat storage and NPS boneyard would be moved to Gunnison.
- The restaurant and showers would be removed.

*For Blue Mesa at Lake Fork*

- The showers would be removed.
- The housing and amphitheater would be reduced or removed.
- The campground would be reduced significantly.
- The former BOR parking area would be removed
- The shop facility and the large parking lot on Highway 92 on the north side of the Blue Mesa Reservoir dam would be removed and the area scarified and revegetated.

*For Blue Mesa at Ponderosa*

- The lower loop of campground would be removed.

*For the Inner Canyon*

- At Pine Creek, all tour boat facilities on the trail would be removed and tour boat operations from Morrow Point Reservoir would be eliminated.
- At Hermits Rest, the number of campsites would be reduced and the dock would be eliminated.

### *For the Canyon at the East Portal*

- The NPS office and residence would be removed.
- The campground would be converted to a day use area.
- Curecanti NRA would rely on assistance from the local area (Cimarron area and BLCA) to handle emergency services.
- There would be no changes at Gateway or on Crystal Reservoir.

### *For the Canyon Rim at Cimarron*

- The BOR/NPS storage yard would be removed.
- The picnic area would be removed.
- The visitor contact station would be reduced to support visitor orientation and water-based recreational activities.
- The train exhibit excluding the trestle would be removed.

Costs for improvements would be estimated at the time of project design.

### **Park Operations and Costs**

Overall need for park operations would remain about the same or increase slightly under this alternative. Removal of facilities would require an initial increase to handle the maintenance workload, but eventually with fewer facilities the workload would drop. At that time fewer maintenance personnel would be needed, however, this would be offset by needs in other divisions. An increase in resource management staffing would be needed to facilitate working with educational facilities and in conducting research. Visitor protection would be shifting some of its services into backcountry settings. Interpretive programming would become less formal in an effort to reach backcountry users.

The estimated range of additional FTEs that would be required to meet these needs is approximately 1.0 to 1.5 for each of the four programs, or a total of 4 to 6 FTEs. The associated range of additional cost would be

\$120,000 to \$200,000. Additional costs that could be incurred from potential development removal would range between \$300,000 to \$350,000.

### **Future Plans and Studies**

Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.








- Prescribed fire management would be completed. This plan would be used to establish the appropriate fire management policy.
- A prairie dog management plan would be updated to guide management actions.
- A visitor experience and resource protection plan would be developed for the park. The plan would establish development and design capacities for a range of potential resource experience opportunity areas. It would also establish the physical capacity for each reservoir based upon the desired future visitor experience.
- A commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.
- All studies and inventories identified in the resource management plan would be completed.
- A viewshed analysis of sensitive areas around Blue Mesa would be completed to identify areas that are necessary in protecting the semi-primitive character of the park. Cooperative management through scenic easements and agreements with adjoining agencies, such as BLM or USFS, would be used to facilitate protection. A boundary study may eventually need to be completed.



- ✿ This alternative would emphasize a range of human experiences in recreation on a manufactured system of high elevation reservoirs, from the solitude of Crystal Lake's canyon to the open flatwater reflections of Blue Mesa Reservoir.
- ✿ Appropriately developed areas would support diverse recreation opportunities, both cultural and natural. Links between areas would integrate visitors into the story of water and water developments (the river, dams, and reservoirs) providing the thread that ties the recreation area together.
- ✿ Offering a diversity of recreational pursuits in high-quality developed and undeveloped areas, this alternative would focus on participation in educational and recreational activities---whether it be learning about the area's wildlife, enjoying a water-based activity, engaging in an active outreach program, or merely contemplating the cultural effects of exploration of the region.
- ✿ Use of the reservoir would emphasize motorized boating recreation in a rural environment. The land area surrounding the reservoir would have an increase in shoreline development, both inside and outside the park. New commercial services, including tours of Blue Mesa, would be considered. The lake arms, however, would remain natural and undeveloped. Ongoing maintenance and protection projects would continue.

## legend

### *management prescriptions*

	developed
	motorized rural
	flatwater
	semi-primitive flatwater
	semi-primitive free-flowing flatwater
	semi-primitive
	protected resource area

# Alternative D

## *Development for a Wide Variety of Recreational Experiences*

## Curecanti National Recreation Area

United States Department of the Interior  
National Park Service



## ***Curecanti NRA Alternative D***

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This alternative would emphasize a blend of human recreation experiences on a system of high-elevation reservoirs, from the solitude of Crystal Reservoir canyon to the open flatwater reflections of Blue Mesa Reservoir.

Appropriately developed areas would support a range of diverse recreation opportunities. These areas would integrate visitors into the story of water and water developments—the river, dams, and reservoirs—providing the thread that ties the recreation area together.

Opportunities to engage in a diversity of recreational pursuits in high-quality developed and undeveloped areas would focus this alternative on participation in educational and recreational activities—whether it be learning about wildlife, enjoying a water-based recreational activity, participation in an active outreach program, or merely contemplating the cultural effects of exploration and settlement of the region.

### **Land Use and Management**

This alternative would provide for an increase in facilities that support high-quality water-based recreational experiences and activities. It would provide for new commercial services and an increase in launch facilities on Blue Mesa. Some facilities would be redesigned or added. This alternative would set a management tone that emphasizes water-based recreational experiences with appropriate levels of development. The total park area is 41,971.04 acres. Using management prescriptions to describe how the park could or would be managed under the development alternative, park management can be broken down as follows.

- About 2,437 acres (6%) — Developed MP
- About 406 acres (1%) — Motorized Rural MP
- About 9,770 acres (23%) Flatwater MP
- About 1,100 acres (3%) — Semi-Primitive Flatwater MP
- About 514 acres (1%) — Semi-Primitive Free-Flowing Flatwater
- About 23,839 acres (57%) — Semi-Primitive Nonmotorized MP
- About 3,905 acres (9%) — Protected Resource

NPS cooperates with other agencies to ensure development is the minimum necessary to support a semi-primitive setting and that development is sensitive to the environment.

Viewsheds are maintained in and around the park in a natural and minimally developed condition.

*For Blue Mesa*, use of the reservoir would emphasize motorized boating recreation in a rural environment. The land area surrounding the reservoir has increased shoreline development both in and outside the park. New commercial services, including tours of Blue Mesa would be considered. The lake arms would remain natural and undeveloped. Ongoing maintenance and protection would continue and may need to be increased.

A cooperative agreement with the NPS, BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa Reservoir, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.

*For Morrow Point*, use of the reservoir would emphasize boating recreation in a semi-primitive environment. Additional commercial service tours may be allowed. Ongoing maintenance and protection projects would continue.

*For Crystal Reservoir*, use would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.

The developed management prescription would be restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.

## **Resource Management**

A resource management plan (RMP) addressing both cultural and natural resource management was completed in February 1995. The GMP affirms issues addressed by the RMP and continues current management. Information on programs addressing resource management issues are discussed in the RMP.

*Natural Resources.* Activities and programs would include the following:

- The new resource management plan sets priorities for resource programs at the park.
- Habitat fragmentation from new developments in bighorn sheep and other large ungulate habitat needs to be identified and mitigated; prevention strategies would be developed with other land management agencies.

*Cultural Resources.* There would be a program to expand interpretation of cultural resources.

## **Visitor Use and Interpretation**

Educational programming would be provided year-round for visitors and outreach audiences.

## **Possible Facility and Development Changes**

Facilities would be improved to meet high-quality standards and reflect a common

architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.

### *For the Riparian Riverine Area:*

- A multipurpose (bike/hike) path from the east boundary along Highway 50 to Elk Creek and Highway 149 to the boundary south of Iola on the way to Lake City could be constructed.
- Paved access and parking at Riverway could be constructed.
- A multiuse nature trail connecting the riverine area to Gunnison could be constructed.
- Increased formal trail access to the river may be constructed in the Neversink/Coopers Ranch area.
- A formal day use area—toilets, picnic tables, and parking—could be developed in the South Beaver Creek area.

### *For the Gunnison River Canyon:*

- There would be no additional enhancement to existing pull offs and some pull offs could be removed.

### *For Blue Mesa:*

- A new marina could be identified after the completion of a commercial services plan and carrying capacity study for the reservoir.

### *For Blue Mesa at Elk Creek:*

- An appropriately designed and located sewage treatment facility would replace the current lagoons.

### *For Blue Mesa at Old Stevens*

- A new launch ramp area has been tentatively identified. A carrying capacity study must be completed before a determination could be made on the appropriateness of another launch facility.
- A day use area and swim beach could be constructed at the Old Highway 50 area. This would include upgraded parking, additional rest rooms and picnic facilities.

#### *For Blue Mesa at the Bay of Chickens:*

- A day use area would be constructed and landscaped, providing for picnicking and other recreational activities as appropriate. Adequate parking would also be provided.
- The Dillon Trail would be extended to the base of Dillon Pinnacles.
- The Aspinall (Sapinero) Overlook would be upgraded to include paved parking, picnic shelters, and vault toilets.

#### *For Blue Mesa at Pine Creek:*

- The access road would be paved to the BOR gate above Blue Mesa Dam.

#### *For the Canyon Rim at Cimarron:*

- The existing metal buildings would be replaced to conform to the area's architectural theme.

### **Park Operations and Costs**

This alternative would require a major investment for operational increases in all areas, above and beyond the cost of the additional development. Significant visitation increases would be a likely result of the additional facilities. Direct impacts of development and significant increases of use would require more staff in resources management (for environmental compliance, monitoring, research, construction rehabilitation, etc.), visitor protection (increases in public use leads to additional search and rescue and law enforcement incidents, and the fee collection program would increase), interpretation (additional facilities requiring preparation of interpretive material, increases in interpretive programs), facility management (for new construction and increases in ongoing maintenance), concessions (potential for additional commercial services might increase workload to the point where another staff person is needed), and administration (to handle additional needs and radio dispatch requirements).

The estimated range of additional FTEs that would be required to meet these needs are:

<i>Facility Management</i>	2.0 — 4.0
<i>Interpretation</i>	2.0 — 3.0
<i>Resources Management</i>	1.0 — 2.0
<i>Visitor Protection</i>	2.0 — 4.0
<i>Concessions</i>	0.0 — 0.5
<i>Administration</i>	0.5 — 1.0

Total possible personnel increases would be 7.5 to 14.5 FTEs. The associated range of additional cost would be \$300,000 to \$500,000. Additional costs that could be incurred from potential development would range between 1.1 and 9.4 million dollars, depending on partnering opportunities.

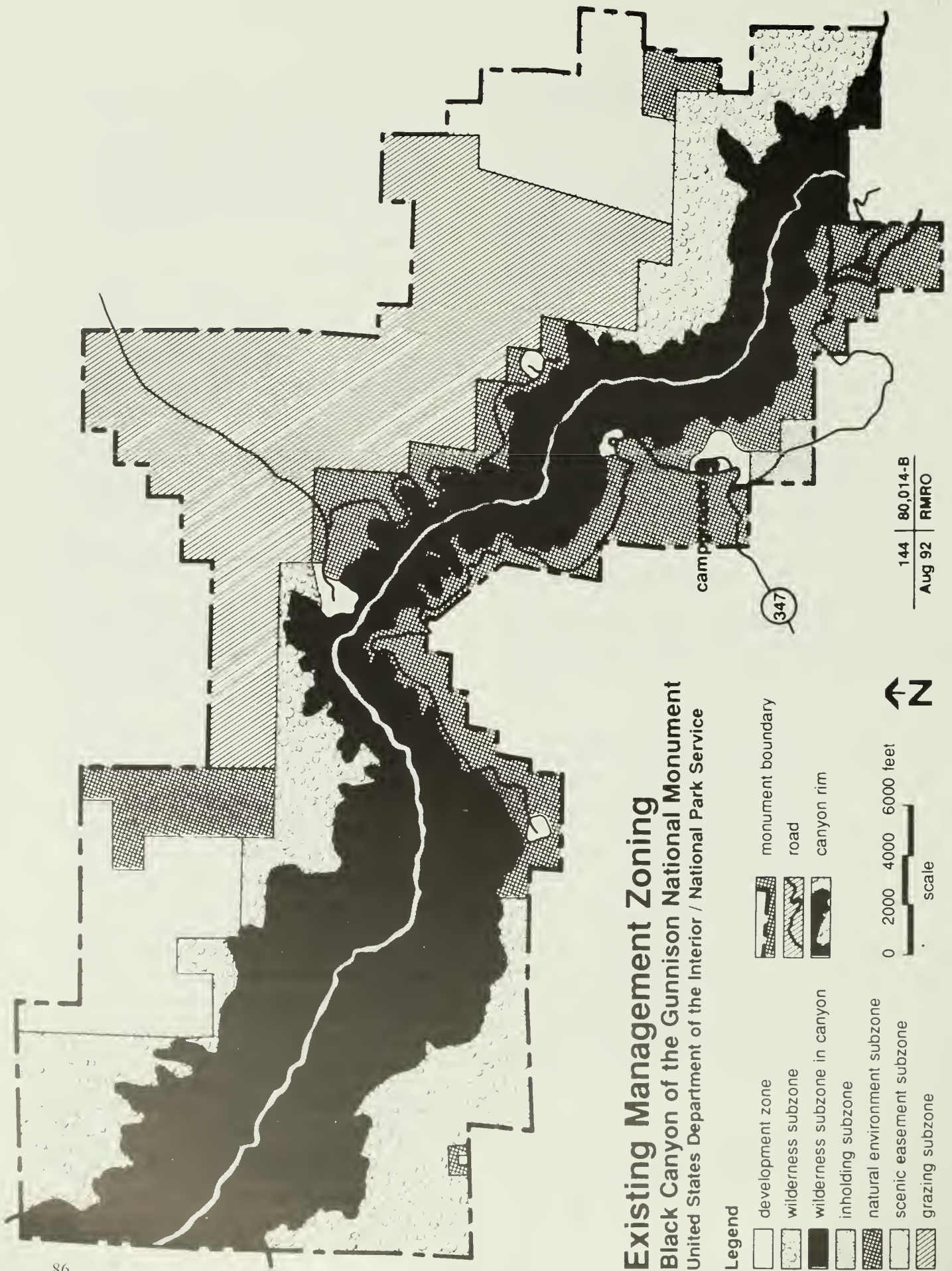
### **Future Plans and Studies**

Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.

- Prescribed fire management plan needs to be completed. This plan would be used to establish the appropriate fire management policy.
- A prairie dog management plan needs to be updated to guide management actions.
- A visitor experience and resource protection plan needs to be developed for the park. The plan would establish development and design capacities for a range of potential resource experience opportunity areas. It would also establish the physical capacity for each reservoir based upon the desired future visitor experience. The first part of the study would determine carrying capacity of Blue Mesa, quality of experience to be provided, and need for future launching and/or other facilities as use increases beyond current capacity.
- A long-range management plan for the preservation and interpretation of the narrow gauge railroad and artifacts at Cimarron would be completed.



- An extensive wayside exhibit plan would be developed.
- A commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.
- All studies and inventories identified in the RMP need to be completed.
- A viewshed analysis of sensitive areas around Blue Mesa would be completed to identify areas that are necessary in protecting the semi-primitive character of the park. Cooperative management through scenic easements and agreements with adjoining agencies, such as BLM or USFS, would be used to facilitate protection.



## ***Black Canyon Alternative A***

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The no-action alternative would use existing zoning as a basis for mapping management prescriptions. Under the no-action alternative, existing management activities would continue. Minimal changes would be implemented to bring existing conditions into compliance with existing regulations and policies, subject to funding availability. Existing visitor facilities would be maintained to support current activities, but no new facilities would be built. Roads would continue to be repaired as needed. Required improvements to safety, sanitation, and access for persons with disabilities would be accomplished as funding permitted. The park would remain unchanged in size, visitor access, and operations. This alternative is consistent with most existing plans and programs.

The monument would continue to protect the natural resources of the canyon, emphasizing more developed recreational experiences on the South Rim and more primitive experiences on the North Rim. No legislative action would be required under this alternative.

### **Existing Conditions**

Existing management zoning is updated every two years with each park's statement for management. Zoning represents how the park is currently used or "*what is.*" This can be contrasted with management prescriptions that represent how the park could be used in the future or "*what could be.*"

### **Existing Management Zoning**

Black Canyon of the Gunnison National Monument lands are managed in two different zones according to their intended use. The location of these zones is shown on the Existing Management Zoning map that

represent the existing condition of the park. All lands within the boundary are included in the classification system. This zoning is based on consideration of land characteristics, existing and proposed development, future demands for visitor use, and land protection. The purpose, size, percent of total park acreage, and key features of each zone are described below.

### ***Park Development Zone***

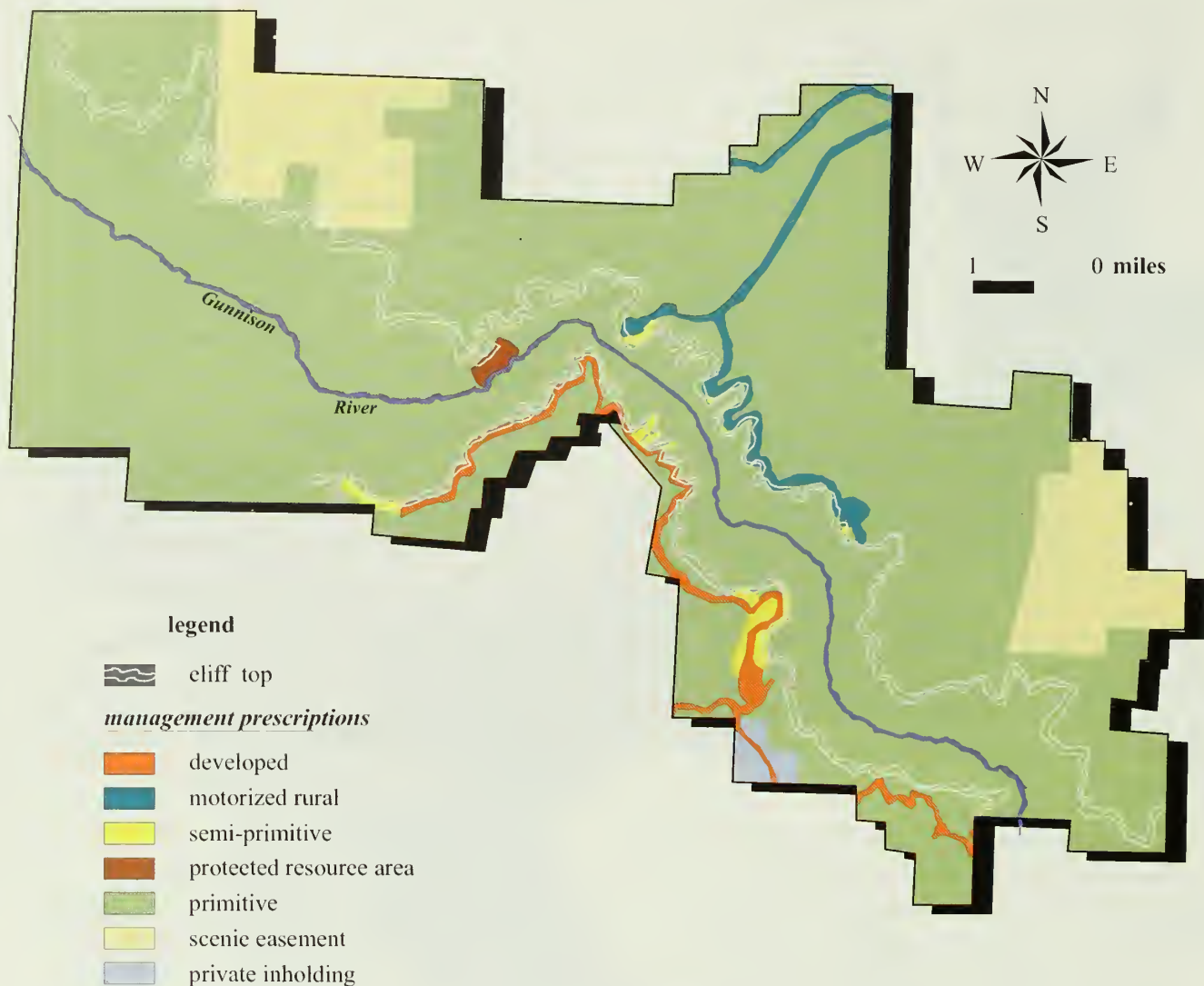
The 210 acres within this management zone make up 1 percent of the total acreage within the authorized boundary. They include space for existing and proposed developments such as roads, buildings, housing area, maintenance area, campgrounds, parking, and utilities. These areas have the capacity to accommodate intensive visitor use and the facility developments necessary to provide safe and convenient visitor access.

### ***Natural Zone***

Twenty thousand five hundred fifty-six (20,556) acres within this zone are separated into five subzones: the natural environment subzone, the wilderness subzone, the scenic easement subzone, the twenty-year leaseback grazing subzone, and the inholding subzone. Areas within the natural environment subzone are managed primarily to preserve the natural environment and facilities are limited to those necessary for access to and interpretation of the natural environment. Typical facilities in this zone include foot trails, interpretive signs, and displays.

On October 20, 1976, Public Law 94-567 established the 11,180-acre Black Canyon of the Gunnison Wilderness. The wilderness encompasses the entire inner gorge and





\* Under the no-action alternative, existing management activities would continue.

\* Minimal changes would be implemented to bring existing conditions into compliance with existing regulations and policies, subject to funding availability.

\* Existing visitor facilities would be maintained to support current activities, but no new facilities would be built.

\* Roads would continue to be repaired as needed.

\* Required improvements to safety and sanitation and access for persons with disabilities would be accomplished as funding permitted.

\* The park would remain unchanged in size, visitor access, and operational flow.

## Alternative A

### No Action

#### Black Canyon of the Gunnison National Monument

United States Department of the Interior  
National Park Service

some higher elevations of the eastern and western portions of the monument. Lands in the wilderness subzone are managed in accordance with the Wilderness Act of 1964 to preserve and protect their primeval character. The act defines wilderness as “*an area where earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.*” Facilities such as minimum rustic signing, foot trails, and vault toilets are allowed in this zone only to the extent necessary to meet minimum requirements for protection and administration of the wilderness area.

### ***Special Designations***

The scenic easement is considered as a natural environment where extensive development is not permitted. There are some management differences that require this area to be managed separately. The Service ownership extends only to scenic interests in the property. The underlying owners can allow or prohibit public use of these lands. They also hold rights to continue grazing operations and maintenance of facilities related to grazing.

A grazing leaseback is located entirely on the North Rim. These lands were purchased in fee by the Service and the owner retained the privilege of grazing livestock on the property for a twenty-year period ending December 1, 2007.

An inholding consists of 120 acres of privately held land falling within the authorized boundary. All acres are on the South Rim bordering the East Portal Road. Management will keep in contact with the landowners and monitor the land to document any apparent change in land use, which might threaten the values of the natural and scenic character. The goal of this monitoring will be to prevent changes that would cause irreparable damage to land that

could eventually become part of the monument. The land protection plan further details the management posture regarding this land.

### **Land Use and Management**

Attempts to minimize impacts on park resources from incompatible uses of adjacent lands would be protected through existing scenic easements, partnerships, and cooperative management, and through mutual agreement with adjacent landowners. The objective of cooperative agreements would be to keep and promote the natural scenic character of the landscape and an undeveloped horizon contributing to the park’s ambiance and aesthetics.

Both North and South Rims would remain undeveloped and unchanged except for ongoing maintenance and resource management projects. Use would be monitored and limited in designated wilderness to that necessary to maintain the wilderness attributes. There would be no changes at the East Portal.

The total number of acres within the park boundary is 20,766.14. Using management prescriptions to describe how the park could or would be managed if current management continued, park management estimates that this can be broken down as follows.

- About 410 acres (2.0%) — Developed MP
  - About 435 acres (2.1%) — Motorized Rural MP
  - About 124 acres (0.6%) — Semi-Primitive MP
  - About 17,283 acres\* (84.2%) — Primitive MP
  - About 50 acres (0.2%) — Protected Resource
  - About 2,144 acres (10.3%) — Scenic Easement MP
  - About 120 acres (0.6%) — Private Inholding
- \*11,180 acres in the park are in wilderness.

This is shown on the No-Action Alternatives map. The no-action alternative would retain

the existing undeveloped appearance of both North and South Rims. There would be no change in how each resource opportunity area in the park is used.

Scenic values inside and next to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management.

There would continue to be a lack of long- or short-term plans for dealing with regional recreation use.

Current partnerships would continue to focus on local organizations to cooperatively facilitate resource protection.

Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.

## **Resource Management**

A resource management plan (RMP) addressing both cultural and natural resource management was completed in February 1993. The GMP affirms issues addressed by the RMP and continues current management. Information on programs addressing resource management issues are described in the RMP.

*Natural Resources.* Activities and programs would include the following:

- The park would continue to work to meet state and local compliance requirements as funding permitted.
- A partial inventory of resources has been obtained. Inventorying would be done as funding permitted.
- A program that encourages continued research to provide a better understanding of the evolution of the Black Canyon would continue.

- A program to control noxious weeds through the least environmentally harmful method would continue.
- A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.
- Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue. Efforts with the USGS and the National Biological Survey (NBS) are narrowly focused on water-related issues.

*Cultural Resources.* There would be no program to expand interpretation of cultural resources.

## **Visitor Use and Interpretation**

Visitors would continue to receive programs emphasizing the natural resources of the park with some allowances for expanding stories of significant cultural resources in the park. Visitors would use existing routes to and into the park.

The existing visitor orientation would be retained. Visitor experience would draw on the natural setting of the monument, including ties to the scenic quality of the surrounding landscape. Resource opportunity areas would be described to visitors. This would sensitize visitors to how various parts of the park are used and how each resource opportunity area could be impacted by human use. Through this understanding, visitors could help in protecting sensitive resources.

Current access would be retained, as shown on the Existing Conditions map.

Current modern-day vehicles, the road, and vehicle-use patterns within the monument



would remain. Initial visitor contact would remain at the existing visitor center.

### **Possible Development Changes**

Existing facilities would remain. The no-action alternative would retain current uses of park resources and the status quo on development, physical plant, and organization. Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. No construction activity other than maintenance would be planned. Existing facilities and structures would continue to serve their present functions, with existing park access retained.

### **Park Operations and Costs**

In July of 1995 Black Canyon and Curecanti were administratively restructured to use efficiencies of shared staff and resources, reduce duplication of effort, and to gain value-added benefits of increased visitor service (interpretation, protection, and maintenance) and resource monitoring and research. Although the Black Canyon and Curecanti are each operated according to their own distinct purposes and significance, there are some functional and operational similarities that permit sharing of staff and resources. In the present and forecasted climate of budgetary constraints, using one management team to accomplish operational and other management goals will contribute to meeting the needs of both units, while facilitating cooperation with other agencies and entities in managing both units as a part of the larger Gunnison River Basin.

Generally, services and functions are provided in a variety of areas essential to serve visitors and protect resources and are supported by an administrative team needed

to accomplish both of these tasks. These functions include:

- *Facility Management.* Responsible for design, construction, maintenance, and general oversight of all area facilities, including campgrounds, picnic areas, public rest rooms, interpretive facilities, roads and trails, buildings and utilities, launch ramps, and so on.
- *Interpretation.* Responsible for operation of area visitor centers, interpretive wayside and museum exhibits, publications, environmental education and outreach, and park interpretive offerings (guided walks, talks, evening programs, demonstrations, etc.).
- *Resources Management.* Provides monitoring and research of natural and cultural resources, including wildlife, flora, aquatic life, air and water quality, and paleontological and ancestral (archeological and historical) resources.
- *Visitor Protection.* Responsible for providing law enforcement (with an emphasis on protecting park resources and visitors), search and rescue, fire suppression, and fee collection.
- *Administration.* Provides essential support in personnel services, payroll, property, contracting, purchasing, and budget.
- *Concessions.* Provides management and oversight of approved commercial activities.
- *Superintendent.* Responsible for general management and oversight of the parks, including establishing long-term mission, goals, and objectives, setting and/or ensuring appropriate policy and procedure, and liaison with other agencies, government officials, and other entities and organizations.

The current base funding for Black Canyon is \$671,000. Staffing would continue as shown below, based upon continued availability of sufficient funding. Staffing is shown as full-time equivalencies, also known as FTEs.

<u>Current Staffing</u>	<u>Permanent</u>	<u>Seasonal</u>
<i>Facility Management</i>	<i>03.0</i>	<i>00.5</i>
<i>Interpretation</i>	<i>01.0</i>	<i>01.0</i>
<i>Resources Management</i>	<i>02.0</i>	<i>01.0</i>
<i>Visitor Protection</i>	<i>00.5</i>	<i>03.0</i>
<i>Administration</i>	<i>02.0</i>	<i>00.0</i>
<i>Asst. Superintendent</i>	<i>01.0</i>	<i>00.0</i>
<i>Subtotals</i>	<i>09.5</i>	<i>05.5</i>
<i>TOTAL</i>	<i>15.0</i>	

Although 16.0 FTEs have been approved, current base funding is sufficient to cover only 15.0 FTEs. Park operations would continue at present levels with an emphasis on protecting resources, serving the public, and responding to incidents as they occur. No additional cost from potential development would be incurred.



Below Warner Point, Black Canyon of the Gunnison National Monument  
© David Halpern



## ***Black Canyon Alternative B***

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This alternative is the National Park Service's proposal. It would emphasize a variety of human experiences in a rugged canyon environment. It would provide developed areas on the South Rim and less-developed areas on the North Rim.

Contemplation of one of nature's foremost scenic wonders would be provided for on both rims by encouraging most visitors to experience the depth of the canyon from above. A variety of other educational and recreational experiences would also be provided to protect and enhance the wilderness values of the monument.

This alternative would emphasize viewing the canyon from the cliff top ROA to give visitors a variety of viewing opportunities for experiencing the canyon in a range of social settings.

Visitors to the South Rim would find this area more developed and visited than the North Rim. Ample staff would be available to assist visitors in learning about Black Canyon resources. Visitors to the North Rim would find this area less developed and visited. Some staff could be encountered to answer questions about monument resources, but for the most part encounters with park staff would be minimal.

Any new public facilities would support both recreational viewing and educational activities in Black Canyon's outdoor classroom.

Mutually beneficial partnerships would be encouraged with both educational institutions and the private sector to provide for visitor services and protect park resources. The proposal is consistent with state/area/local plans and programs.

## **Land Use and Management**

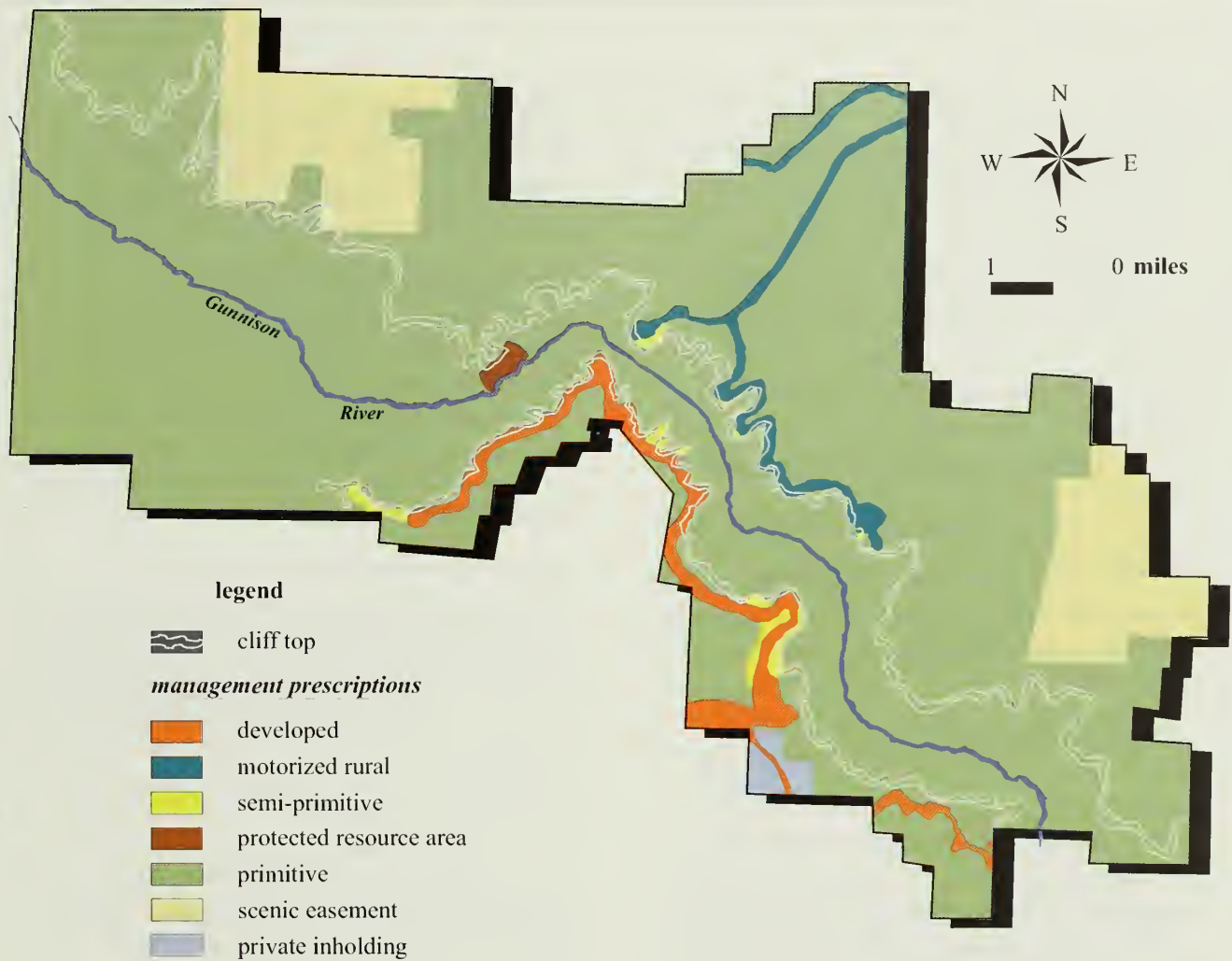
Maintenance of scenic values on surrounding lands is an important ingredient in providing visitors with a feeling of awe as they first view the canyon's depths. The sense of openness created by surrounding lands forms the setting and the basis for the scenic ambiance of the park. Today, that sense of openness continues to enhance visitor enjoyment of the monument's resources.

The North Rim would remain relatively undeveloped and substantially unchanged in the future except for minor improvement in existing facilities. Management of this area would emphasize a variety of backcountry wilderness experiences and encounters with monument resources.

On the South Rim, facilities for viewing the canyon from above would be maintained and improved. A new or upgraded visitor center would provide better visitor orientation of the monument. Partnerships would be sought to provide visitor services and protect monument resources.

In the canyon, use would be monitored to ensure the protection of the wilderness resource. The types of visitor use would also be limited to those necessary to maintain the wilderness character.

In the East Portal area, park staff would develop a common architectural theme to improve and unify the visual appearance of facilities, including roads and signage. This would be coordinated between the monument, Curecanti National Recreation Area, and the Bureau of Reclamation. It would apply to the East Portal and its associated road corridor.



\* This alternative would emphasize a variety of human experiences in a rugged canyon environment. It would provide developed areas on the South Rim and less-developed areas on the North Rim.

\* Most visitors would be encouraged to experience the depth of the canyon from above. This would provide a breathtaking experience of one of nature's foremost scenic wonders from both rims.

\* A variety of other educational and recreational experiences would also be provided to protect and enhance the wilderness values of the monument.

\* This alternative would emphasize viewing the canyon from the cliff top resource opportunity area to give visitors a variety of viewing opportunities and enable them to experience the canyon in a range of social settings.

\* The South Rim would be more developed and visited than the North Rim. Ample staff would be available to assist visitors in learning about the Black Canyon resources.

\* Any new public facilities would support both recreational viewing and educational activities in Black Canyon's outdoor classroom.

## Alternative B

### *The Canyon Depths*

#### Black Canyon of the Gunnison National Monument

United States Department of the Interior  
National Park Service

The following would be the acreage distribution of the management prescription under this alternative within the park.

- About 621 acres (3.0%) — Developed MP\*\*
  - About 417 acres (2.0%) — Motorized Rural MP
  - About 122 acres (0.6%) — Semi-Primitive MP
  - About 17,292 acres\* (83.3%) — Primitive MP
  - About 50 acres (0.2%) — Protected Resource MP
  - About 2,144 acres (10.3%) — Scenic Easement MP
  - About 120 acres (0.6%) — Private Inholding
- \*11,180 acres in the park are in wilderness.

\*\* this would provide for expansion of the developed area along roads and additional developed sites on the South Rim.

This alternative would retain the existing rugged appearance of both the North and South Rims. The cliff top ROA has about 411 acres (2.0%) more land allocated to the developed MP than is in the no-action alternative. Because there are no immediate improvements in facilities on both rims, the Canyon Backdrop ROA would appear about the same as under the no action alternative. Long term, however, additional facilities could be placed on the South Rim to support visitor services.

Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management. Management would encourage local agencies to ensure that any development surrounding the monument be done in a sensitive manner, so that it does not detract from the monument's scenic values.

This alternative would broaden partnership strategies to rely on an advisory group of public participants and land management agencies to work cooperatively in developing

short- and long-term plans for addressing regional recreation use and resource protection. The possible formation of a friends group would also be explored.

Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.

## **Resource Management**

A resource management plan (RMP) addressing both cultural and natural resource management was completed in February 1993. The GMP affirms issues addressed by the RMP and introduces some additional strategies. Information on programs addressing resource management issues can be found in the RMP.

*Natural Resources.* The following are additional strategies that would be employed by this alternative to address specific objectives set for the park.

- The park would continue to work to meet state and local compliance requirements for clean air as funding permitted. The park would pursue a coordinated program for Class I air monitoring with the U.S. Forest Service and the State of Colorado.
- A partial inventory of paleontological resources has been obtained. Inventorying would be completed in partnership with educational institutions as funding permitted.
- A program that encourages continued research to provide a better understanding of the geologic evolution of the Black Canyon would continue.
- A program to control noxious weeds through the least environmentally harmful method would continue.
- A program to identify habitat fragmentation and mitigate its effects would be developed cooperatively with educational institutions and land management agencies.



- A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.
- Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue. Efforts with the USGS and the NBS to establish water quality monitoring would be expanded to include educational institutions.
- A database would be developed to track water related data used to guide management decisions.

*Cultural Resources.* The following are additional strategies that would be employed by this alternative to address specific objectives set for the park.

- Cultural resource management would emphasize stabilization and preservation.
- Cultural resource management could also include archeological research and study.
- A new interpretive program would be developed (see Visitor Use and Interpretation).

### **Visitor Use and Interpretation**

A new interpretive program would be developed to communicate the history and prehistory of the monument through a partnership with educational institutions and private groups who could help with research efforts. Interpretive themes would be expanded to preserve significant sites and tell the story of water development in western Colorado.

### **Possible Facility and Development Changes**

Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.

- new or improved visitor center
- additions to existing parking areas
- components of the old NPS complex near Kneeling Camel would be evaluated for rehabilitation or removal; a group camp could also be established in the same location
- architectural theme enhancements
- new trails
- rehabilitation of North Rim campground

Costs for the above improvements would be estimated at the time of project design.

### **Park Operations and Costs**

Ranger operations would be increased to provide additional protection while serving public use. Additional services and patrols would take place on the South Rim and in the wilderness/backcountry. Staff would receive additional training to respond proactively to emergency situations.

In addition, some increases in park operations would be required to meet the needs created by this alternative's emphasis on moderately increasing facilities for viewing the canyon and increased opportunities for education. The greatest needs would occur in the operational areas of facility management (additional facilities to be constructed and maintained) and interpretation and visitor protection (in order to serve an anticipated moderate increase in visitation). Some increases in resource management would also be anticipated for evaluation of project proposals and potential impacts on natural and cultural resources and to monitor impacts of increased usage.

The estimated range of additional FTEs that would be required to meet these needs are 1.0 to 1.5 for each of the four programs, or a total of 4 to 6 FTEs. The associated range of additional cost would be \$120,000 to \$200,000. Additional costs that could be incurred from potential development would

range between .6 and 4.4 million dollars, depending on partnering opportunities.

### **Future Plans and Studies**

Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.

- a visitor experience and resource protection plan
- a wildland fire management plan
- a long-range interpretive plan
- a commercial services plan
- a wilderness management plan
- an emergency operations plan
- a trail and backcountry management plan

### ***Black Canyon Alternative C***

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This alternative would emphasize primitive human experiences, using the rugged canyon as an outdoor classroom. It would provide only minimally developed areas where necessary that allow visitors to contemplate one of nature's foremost scenic wonders and encourage primitive experiences of the canyon through its interpretation, partnerships, and orientation programs with educational institutions.

Educational institutions would be actively encouraged to conduct research on monument resources, visitor use, and interactive ecological processes within the Gunnison River Basin. Some areas of Black Canyon may be designated as a research natural area.

Educational institutions and visitors would be encouraged to participate in a limited number of primitive learning experiences in outdoor recreation classroom settings. These could include sight-seeing, hiking, fishing, wilderness backpacking, climbing, and white-water rafting.

The use of existing and new development would be limited to the minimum necessary to meet research and educational needs in an outdoor classroom.

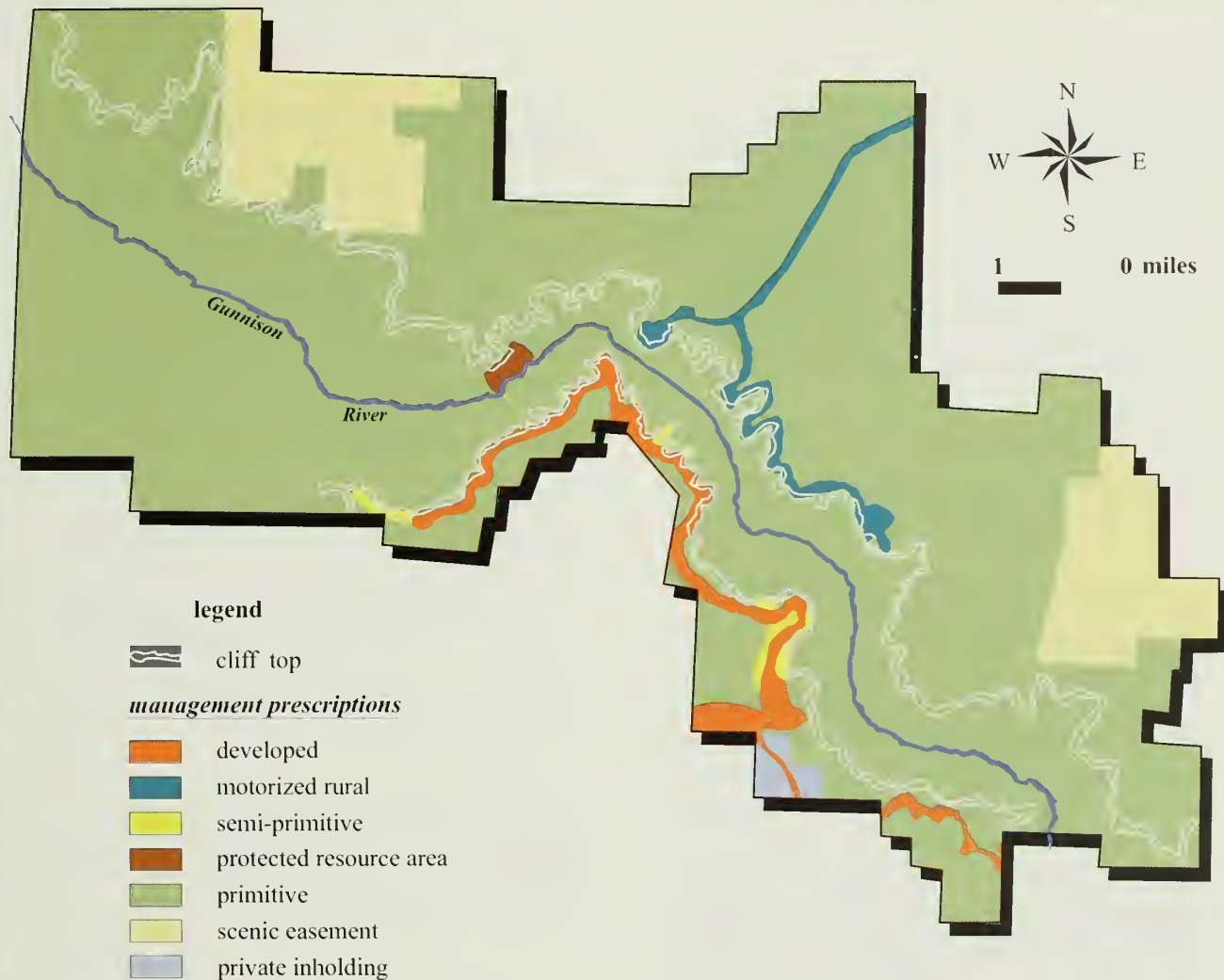
Partnerships with educational institutions and private groups—retired adults, family groups, college students, grades K–12—would be encouraged to promote Black Canyon as an outdoor classroom.

This alternative is consistent with state/area/local plans and programs.

### **Land Use and Management**

There would be no change in South Rim development except for cosmetic improvements or a shifting in use of existing facilities. Based on an analysis of need, some development could be eliminated. Research activities in this area could increase.

Development on the North Rim would be limited to that necessary to support research and educational activities and partnerships, and would occur at and/or near the site of the old ranger station complex near Kneeling Camel Overlook. A portion of the North Rim would be reserved to support an outreach outdoor classroom partnership program with educational institutions.



\* This alternative would emphasize primitive human experiences, using the rugged canyon as an outdoor classroom.

\* This alternative would provide only minimally developed areas where necessary, which allow visitors to contemplate one of nature's foremost scenic wonders and encourage primitive experiences of the canyon through interpretation, partnerships, and orientation programs with educational institutions.

\* Educational institutions would be actively encouraged to conduct research on monument resources, visitor use, and interactive ecological processes within the Gunnison River Basin. Some areas of Black Canyon may be designated as a

\* Educational institutions and visitors would be encouraged to participate in a limited number of primitive learning experiences in outdoor recreation classroom settings. These could include sight-seeing, hiking, fishing, wilderness backpacking, climbing, and white-water rafting.

\* The use of new and existing developments would be limited to the minimum necessary to meet research and educational needs in an outdoor classroom.

\* Partnerships with educational institutions and private groups (retired adults, family groups, college students, and grades K-12) would be encouraged to promote Black Canyon as an outdoor classroom.

## Alternative C

### *Black Canyon as an Outdoor Classroom*

#### **Black Canyon of the Gunnison National Monument**

United States Department of the Interior  
National Park Service



The following would be the acreage distribution of the management prescription.

- About 621 acres (3.0%) — Developed MP\*\*
- About 417 acres (2.0%) — Motorized Rural MP
- About 122 acres (0.6%) — Semi-Primitive MP
- About 17,292 acres\* (83.3%) — Primitive MP
- About 50 acres (0.2%) — Protected Resource MP
- About 2,144 acres (10.3%) — Scenic Easement MP
- About 120 acres (0.6%) — Private Inholding

\*11,180 acres in the park are in wilderness.

\*\* this would provide for expansion of the developed area along roads and additional developed sites on the South Rim.

This alternative would retain the existing rugged appearance of both the North and South Rims. The cliff top ROA has about 411 acres (2.0%) more land allocated to the developed MP than is in the no-action alternative. Because of the removal of some facilities called for on both rims, the canyon backdrop ROA would appear less developed. Long term, however, additional facilities could be placed on the South Rim to support visitor services.

Some areas could be designated as research natural areas.

Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management.

Current partnerships would continue to focus on local organizations to cooperatively facilitate resource protection.

This alternative would broaden partnership strategies to use friends groups, educational institutions, or nonprofit groups to work cooperatively to develop short- and long-

term plans to address regional recreation use and resource protection.

Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.

## Resource Management

A resource management plan (RMP) addressing both cultural and natural resource management was completed in February 1993. The GMP affirms issues addressed by the RMP and introduces some additional strategies. Information on programs addressing resource management issues can be found in the RMP.

*Natural Resources.* The following are additional strategies that would be employed by this alternative to address specific objectives set for the park.

- The park would continue to work to meet state and local compliance air quality requirements as funding permitted. The park would pursue a coordinated program for Class I air monitoring with the U.S. Forest Service and the State of Colorado.
- A partial inventory of paleontological resources has been obtained. Inventorying would be completed in partnership with educational institutions as funding permitted.
- A program that encourages continued soil and geologic research to provide a better understanding of the evolution of the Black Canyon would continue.
- A program to control noxious weeds through the least environmentally harmful method would continue.
- A program to identify habitat fragmentation and mitigate its effects would be researched through an educational institution.

- A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.
- Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue. Efforts with the USGS and the NBS to establish water quality monitoring would be expanded to include educational institutions.
- A database would be developed to track water-related data used to guide management decisions.

*Cultural Resources.* Actions would be the same as outlined in Alternative B.

### **Visitor Use and Interpretation**

Interpretation would increase its focus on research and education activities about the monument's resources, including both natural and cultural resources. Use would be monitored. Use would be limited to that necessary to maintain the wilderness character.

A new interpretive program would be developed to communicate the history and prehistory through a partnership with educational institutes and private groups. Interpretive themes would be expanded to preserve significant sites and tell the story of water development in western Colorado, using an array of partners—educational institutions, historical societies, and private groups.

### **Possible Facility and Development Changes**

Existing facilities would be evaluated based on need in light of this alternative's theme. Some facilities could be removed.

Facilities would be improved to meet high-quality standards and reflect a common

architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.

- amphitheater converted to educational use
- facilities at Pulpit Rock removed
- old ranger station complex near Kneeling Camel converted to support research and educational uses
- architectural theme enhancements

Costs for the above improvements would be estimated at the time of project design.

### **Park Operations and Costs**

Park operations would be increased to provide additional protection to preserve research values and educational opportunities while controlling non-conforming uses. Staff would continue to respond to incidents as they occur.

In addition, overall need for park operations would increase slightly under this alternative. Removal of facilities would require an initial increase to handle the maintenance workload, but eventually, with fewer facilities the workload would drop. Although the current level of maintenance staffing is inadequate, under this scenario only a small increase would be needed because there would be fewer facilities to be maintained, except for improvements made to the old ranger complex on the North Rim. An increase in resource management staffing would be needed to facilitate education and research to be conducted on the North Rim and in the wilderness. Visitor protection also would need a small staff increase to facilitate additional wilderness patrols. Interpretive efforts would shift to provide additional services for educational groups and contacts in the wilderness.

The estimated range of additional FTEs that would be required to meet these needs are

approximately 1.0 to 1.5 for each of the four programs, or a total of 4 to 6 FTEs. The associated range of additional cost would be \$120,000 to \$200,000. Additional costs that could be incurred from potential development removal would range between \$130,000 to \$150,000.

### **Future Plans and Studies**

Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.

- a visitor experience and resource protection plan
- a wildland fire management plan
- a long-range interpretive plan
- a commercial services plan
- a wilderness management plan
- an emergency operations plan
- a trail and backcountry management plan



Looking Downstream near Cedar Point, Black Canyon of the Gunnison National Monument  
© David Halpern



## ***Black Canyon Alternative D***

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This alternative would emphasize human experiences at the rim of a rugged canyon, providing developed areas on the South and North Rims for the visiting public. This alternative would provide for contemplation of one of nature's foremost scenic wonders by providing experiences of the canyon from above, while protecting the wilderness values of the monument.

This alternative would stress providing easy developed access to both rims. Developed facilities would be provided to help all visitors see the depths of the canyon easily.

Mutually beneficial partnerships with the private sector would be encouraged to provide for visitor services and protect park resources.

### **Land Use and Management**

New development on the North Rim would accommodate a more developed experience on both rims of the canyon. Developments on the North Rim may eventually approximate the level of development on the South Rim.

On the South Rim, there would be additional development to support recreational experiences of viewing the canyon from above. A new or upgraded visitor center would provide better visitor orientation of monument resources. Partnerships would be sought to provide visitor services and protect monument resources.

In the canyon, use would be monitored and would be tightly limited to that necessary to maintain the wilderness character. Higher tolerance to use would be allowed outside of the designated wilderness.

In the East Portal area, park staff would develop a common architectural theme to improve and unify the visual appearance of facilities, including roads and signage. This would be coordinated among the monument, Curecanti National Recreation Area, and the Bureau of Reclamation. It would apply to the East Portal and its associated road corridor.

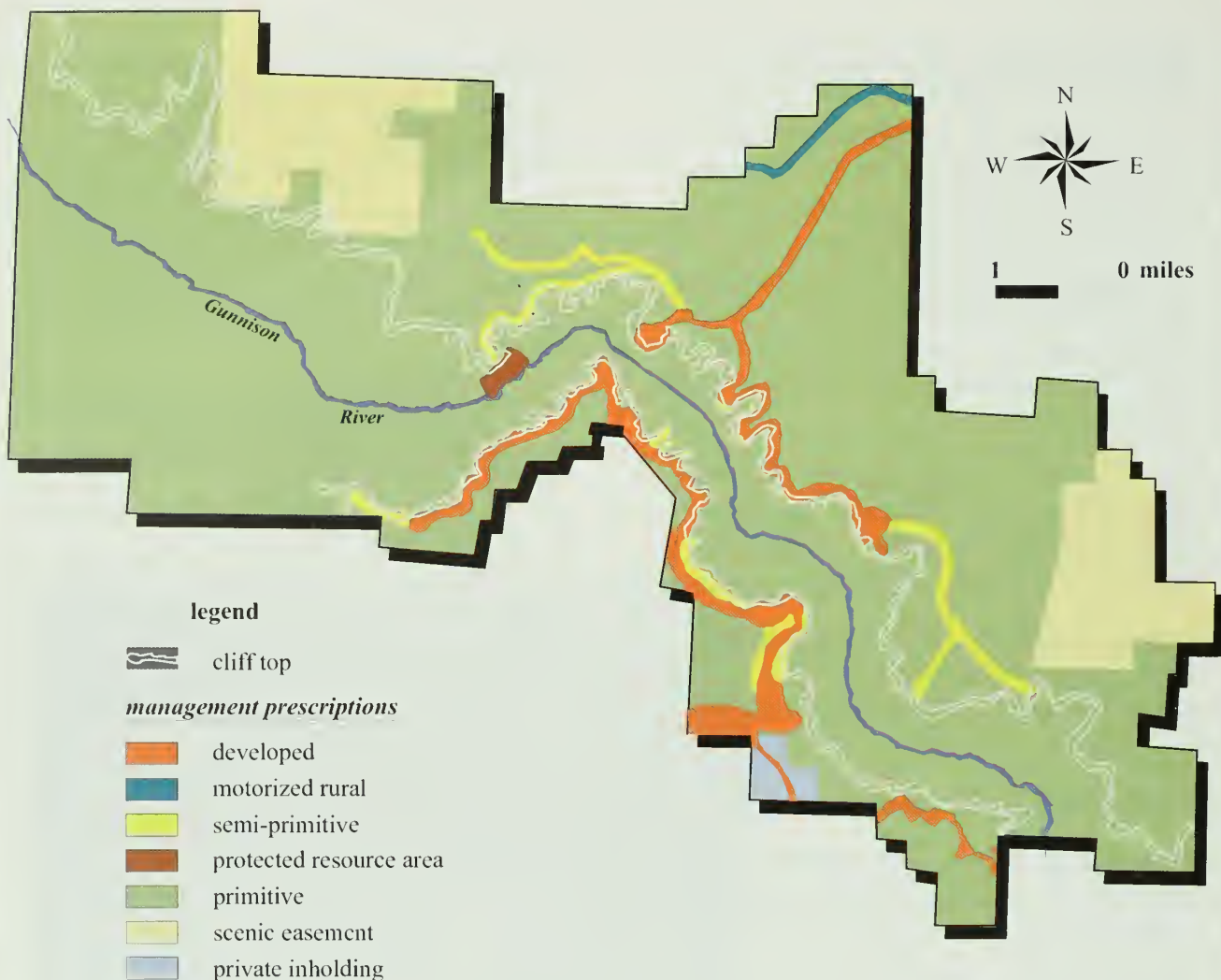
- About 1,150 acres (5.5%) — Developed MP
- About 71 acres (0.3%) — Motorized Rural MP
- About 459 acres (2.2%) — Semi-Primitive MP
- About 16,772 acres\* (80.9%) — Primitive MP
- About 50 acres (0.2%) — Protected Resource MP
- About 2,144 acres (10.3%) — Scenic Easement MP
- About 120 acres (0.6%) — Private Inholding

\*11,180 acres in the park are in wilderness.

\*\* this would provide for expansion of the developed area along roads and additional developed sites on the North and South Rims.

This alternative would increase the capacity to serve visitors who want to see the canyon from above on both the North and South Rims. The cliff top ROA has about 950 acres (4.5%) more land allocated to the developed management prescription than is in the no-action alternative. Because of improvements in facilities called for on both rims, the canyon backdrop ROA areas could appear less rugged and more developed.

Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management. Management encourages any development surrounding the monument be done in a sensitive manner, so that it does not detract from the scenic values of the monument.



\* This alternative would emphasize human experiences at the rim of a rugged canyon and provide developed areas on the South and North Rims for the visiting public.

\* The experience would provide for the contemplation of one of nature's foremost scenic wonders, by providing experiences of the canyon from above while protecting the wilderness values of the monument.

\* This alternative would stress providing easy developed access to both rims.

\* Developed facilities would be provided to help all visitors to easily see the depths of the canyon.

\* Mutually beneficial partnerships with the private sector would be encouraged to provide for visitor services and protect park resources.

## Alternative D

### *Development of the Non-Wilderness Areas of Black Canyon to Allow Easy Access to the North and South Rims*

**Black Canyon of the Gunnison  
National Monument**

United States Department of the Interior  
National Park Service

144 80,047  
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This alternative would broaden partnership strategies to use an advisory group of public participants and land management agencies to work cooperatively in developing short- and long-term plans for addressing regional recreation use and resource protection.

Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.

## Resource Management

A resource management plan (RMP) addressing both cultural and natural resource management was completed in February 1993. The GMP affirms issues addressed by the RMP and introduces some additional strategies. Information on programs addressing resource management issues can be found in the RMP.

*Natural Resources.* The following are additional strategies that would be employed by this alternative to address specific objectives set for the park.

- The park would continue to work to meet state and local compliance requirements as funding permitted. The park would pursue a coordinated program for Class I air monitoring with the U.S. Forest Service and the State of Colorado.
- A partial inventory of paleontological resources has been obtained. Inventorying would be completed prior to development of the North Rim.
- A program that encourages continued research to provide a better understanding of the evolution of the Black Canyon would continue.
- A program to control noxious weeds through the least environmentally harmful method would continue.
- A program to identify habitat fragmentation and mitigate its effects would be developed cooperatively with educational institutions and land management agencies.

- A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.
- Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue. Efforts with the USGS and the NBS to establish water quality monitoring would continue.
- A database would be developed to track water-related data used to guide management decisions.

*Cultural Resources.* Actions would be the same as outlined in Alternative B.

## Visitor Use and Interpretation

Interpretation would focus more broadly to include both natural and cultural resources from a recreational perspective. A new interpretive program would be developed to communicate the history and prehistory through a partnership with educational institutions and private groups. Interpretive themes would be expanded to preserve significant sites and tell the story of water development in western Colorado, using an array of partners—educational institutions, historical societies, and private groups.

## Possible Facility and Development Changes

Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.

- a new or improved visitor center (South Rim)
- a visitor center contact station (North Rim)
- newly paved roads and parking areas
- two picnic areas (North Rim)
- an entrance station (North Rim)



- a campground (100 sites—North Rim)
- additions to existing parking areas
- the old ranger station complex on the North Rim converted to educational uses
- architectural theme enhancements
- new trails

Costs for the above improvements would be estimated at the time of project design.

## Park Operations and Costs

Park operations would be increased to provide additional protection while serving public use. Additional services and patrols would take place on the South Rim, North Rim, and in the wilderness/backcountry. Staff would receive additional training to respond proactively to emergency situations.

In addition, this alternative will require a major investment for operational increases in all areas, above and beyond the cost of the additional development. Significant visitation increases would be a likely result of the additional facilities. The North Rim in particular would experience additional visitation as access and facilities are improved. Direct impacts of development and significant increases of use will require more staff in resources management (for environmental compliance, monitoring, research, construction rehabilitation, etc.), visitor protection (increases in public use leads to additional search and rescue and law enforcement incidents, and the fee collection program would increase), interpretation (additional facilities requiring preparation of interpretive material, increases in interpretive programs), and facility management (for new construction and increases in ongoing maintenance).

The estimated range of additional FTEs that would be required to meet these needs are:

Facility Management	1.5 — 2.0
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Interpretation	1.0 — 2.0
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Resources Management	0.5 — 1.0
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Visitor Protection	1.0 — 2.0
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Total possible personnel increases would be 4.0 to 7.0 FTEs. The associated range of additional cost would be \$150,000 to \$275,000. Additional costs that could be incurred from potential development would range between 9.3 and 16.9 million dollars, depending on partnering opportunities.

## Future Plans and Studies

Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.

- a visitor experience and resource protection plan
- a monitoring plan to protect resources from increased visitor use
- a wildland fire management plan
- a long-range interpretive plan
- a commercial services plan
- a wilderness management plan
- an emergency operations plan
- a trail and backcountry management plan.

**Table 4 - Alternative Summary - CURECANTI NRA**

<b>General Description</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
	<p>Under the no-action alternative, existing management activities would continue as funds allow. Existing visitor facilities would be maintained to support current activities, but no new facilities would be built. Roads would continue to be repaired as needed. Required improvements to safety, sanitation, and access for persons with disabilities would be accomplished as funding permitted.</p>	<p>This alternative would emphasize the significance of both natural and cultural resource experiences for visitors of the recreation area. On the natural resource side, experiencing the clear water, sweeping vistas, and abundant wildlife in a harsh, arid ecosystem, balanced by ribbon-like riparian life zones brought generations of people to the area. On the cultural resource side, experiencing the environment people explored, migrated to, and engineered—the river and its natural path to the West.</p> <p>Appropriately developed areas would support a range of diverse recreation opportunities, both cultural and natural. These areas would integrate visitors into the story of the West through the various advancements that contributed to this area's development.</p>	<p>This alternative would emphasize a narrow band of water recreational experiences on a system of high-elevation reservoirs, reflecting an attempt to provide superlative recreation experiences.</p> <p>A limited number of high-quality developed areas would support recreation opportunities. These areas would focus visitors on the high-quality recreational experiences and activities that the recreation area can provide. Developments would support water-based recreational experiences in an otherwise relatively undeveloped environment.</p>	<p>This alternative would emphasize a blend of human recreation experiences on a system of high-elevation reservoirs, from the solitude of Crystal Reservoir's canyon to the open flatwater reflections of Blue Mesa Reservoir.</p> <p>Appropriately developed areas would support a range of diverse recreation opportunities, both cultural and natural. These areas would integrate visitors into the story of water and water developments—the river, dams, and reservoirs—providing the thread that ties the recreation area together.</p> <p>Opportunities to engage in a diversity of recreational pursuits in high-quality developed and undeveloped areas would focus this alternative on participation in educational and recreational activities—whether it be learning about the area's wildlife, enjoying a water-based recreational activity, participating in an active outreach program, or merely contemplating the effects of exploration and settlement of the region.</p>
<b>Blue Mesa Reservoir</b>	<p>Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and</p>	<p>Use of the reservoir would emphasize boating recreation in a rural environment. The land area surrounding the reservoir within the</p>	<p>Use of the reservoir would emphasize boating recreation in a semi-primitive environment. The land area surrounding the</p>	<p>Use of the reservoir would emphasize motorized boating recreation in a rural environment. The land area surrounding the</p>

**Table 4 - Alternative Summary - CURECANTI NRA**

	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
	<p>unchanged except for ongoing maintenance and protection projects. The lake arms would remain natural and undeveloped.</p> <p>A cooperative agreement with the NPS, the BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa Reservoir, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.</p>	<p>park would have some additional shoreline development. The lake arms would remain natural and undeveloped. Ongoing maintenance and protection projects would continue.</p> <p>A cooperative agreement with the NPS, BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa Reservoir, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.</p>	<p>reservoir would have less shoreline development that it has now within the park. The lake arms would remain natural and undeveloped. Ongoing maintenance and protection projects would continue.</p> <p>A cooperative agreement with the NPS, BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa Reservoir, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.</p>	<p>reservoir would have increased shoreline development both in and outside the park. New commercial services, including tours of Blue Mesa would be considered. The lake arms would remain natural and undeveloped. Ongoing maintenance and protection projects would continue.</p> <p>A cooperative agreement with the NPS, BOR, WAPA, and the USFWS is being developed on establishing and maintaining the appropriate reservoir levels on Blue Mesa Reservoir, in conjunction with establishing desired flow levels for Black Canyon of the Gunnison National Monument.</p>
<b>Morrow Point Reservoir</b>	Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.	Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.	Use of the reservoir would emphasize boating recreation in a semi-primitive environment. Commercial service tours would be eliminated and the area surrounding the reservoir within the park would have less shoreline development. Ongoing maintenance and protection projects would continue.	Use of the reservoir would emphasize boating recreation in a semi-primitive environment. Additional commercial service tours might be allowed. Ongoing maintenance and protection projects would continue.
<b>Crystal Reservoir</b>	Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.	Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.	Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.	Use of the reservoir would remain relatively unchanged. The land area surrounding the reservoir would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.
<b>Land Use</b>	About 2,155 acres -	About 2,281 acres -	About 2,088 acres -	About 2,437 acres -



**Table 4 - Alternative Summary - CURECANTI NRA**

and Management Prescriptions (MP)	Alternative A	Alternative B	Alternative C	Alternative D
	<p>Developed MP</p> <p>About 427 acres - Motorized Rural MP</p> <p>About 9,770 acres - Flatwater MP</p> <p>About 1,110 acres - Semi-Primitive Flatwater MP</p> <p>About 514 acres - Semi-Primitive Free-Flowing Flatwater MP</p> <p>About 24,012 acres - Semi-Primitive Nonmotorized MP</p> <p>About 3,993 acres - Protected Resource MP</p> <p>This alternative would retain the existing appearance and management of reservoirs and surrounding lands. Where development takes place around the park, the NPS cooperates with other agencies to see that development is sensitive to the environment.</p> <p>Viewsheds are maintained in and around the park in a natural and generally undeveloped condition.</p> <p>The developed management prescription is restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.</p>	<p>Developed MP</p> <p>About 414 acres - Motorized Rural MP</p> <p>About 9,770 acres - Flatwater MP</p> <p>About 1,100 acres - Semi-Primitive Flatwater MP</p> <p>About 514 acres - Semi-Primitive Free-Flowing Flatwater MP</p> <p>About 23,899 acres - Semi-Primitive Nonmotorized MP</p> <p>About 3,993 acres - Protected Resource MP</p> <p>This alternative would provide for a moderate increase in facilities that support high-quality recreational experiences and activities. Some facilities would be redesigned or added. This alternative would set a management tone that emphasizes diversity of water-based recreational experiences with appropriate levels of development.</p> <p>Where development takes place around the park, the NPS cooperates with other agencies to see that development is sensitive to the environment.</p> <p>Viewsheds are maintained in and around the park in a natural and generally undeveloped condition.</p> <p>The developed management prescription is restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.</p>	<p>Developed MP</p> <p>About 512 acres - Motorized Rural MP</p> <p>About 9,770 acres - Flatwater MP</p> <p>About 1,100 acres - Semi-Primitive Flatwater MP</p> <p>About 514 acres - Semi-Primitive Free-Flowing Flatwater MP</p> <p>About 23,757 acres - Semi-Primitive Nonmotorized MP</p> <p>About 4,230 acres - Protected Resource MP</p> <p>This alternative would attempt to decrease developments within the park that are within view of Blue Mesa Reservoir. It would set a management tone that emphasizes that developments would be limited to support high-quality recreational experiences and activities. Hunting and grazing would be prohibited. Some park facilities would be removed or altered.</p> <p>Where development takes place around the park, the NPS cooperates with other agencies to see that development is sensitive to the environment.</p> <p>Viewsheds are maintained in and around the park in a natural and generally undeveloped condition.</p> <p>The developed management prescription is restricted to the existing highway right-of-way along Highways 50 and 149 within the boundary of</p>	<p>Developed MP</p> <p>About 406 acres - Motorized Rural MP</p> <p>About 9,770 acres - Flatwater MP</p> <p>About 1,100 acres - Semi-Primitive Flatwater MP</p> <p>About 514 acres - Semi-Primitive Free-Flowing Flatwater MP</p> <p>About 23,839 acres - Semi-Primitive Nonmotorized MP</p> <p>About 3,905 acres - Protected Resource MP</p> <p>This alternative would provide for an increase in facilities that support high-quality water-based recreational experiences and activities. It would provide for new commercial services and an increase in launch facilities on Blue Mesa. Some facilities would be redesigned or added. This alternative would set a management tone that emphasizes water-based recreational experiences with appropriate levels of development.</p> <p>The NPS cooperates with other agencies to ensure development is the minimum necessary to support a semi-primitive setting and that development is sensitive to the environment.</p> <p>Viewsheds are maintained in and around the park in a natural and minimally developed condition.</p> <p>The developed management prescription is restricted</p>

**Table 4 - Alternative Summary - CURECANTI NRA**

	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
<b>Visitor Use and Interpretation</b>	<p>* To date no capacity studies have been done to identify the appropriate levels of visitor use, therefore, no strategy has been developed to determine appropriate</p> <p>commercial services and levels at the park.</p> <p>* Educational programming would be provided year-round for visitors and outreach audiences.</p>	<p>* Educational programming would be provided year-round for visitors and outreach audiences.</p>	<p>the Curecanti Archeological District.</p> <p>* Educational programming would be provided year-round for visitors and outreach audiences.</p>	<p>to the existing highway right-of-way along Highways 50 and 149 within the boundary of the Curecanti Archeological District.</p> <p>* Educational programming would be provided year-round for visitors and outreach audiences.</p>
<b>Natural Resource Management</b>	<p>* The new resource management plan sets priorities for resource programs at the park.</p>	<p>* The new resource management plan sets priorities for resource programs at the park.</p> <p>* Habitat fragmentation from new developments in bighorn sheep and other large ungulate habitat needs to be identified and mitigated; prevention strategies would be developed with other land management agencies.</p>	<p>* The new resource management plan sets priorities for resource programs at the park.</p> <p>* Habitat fragmentation from new developments in bighorn sheep and other large ungulate habitat needs to be identified and mitigated; prevention strategies would be developed with other land management agencies.</p>	<p>* The new resource management plan sets priorities for resource programs at the park.</p> <p>* Habitat fragmentation from new developments in bighorn sheep and other large ungulate habitat needs to be identified and mitigated; prevention strategies would be developed with other land management agencies.</p>
<b>Facilities and Development Changes</b>	<p>Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. No construction activities other than maintenance would be planned. These include the widening and extension of existing Blue Mesa Reservoir launch ramps as grant funds from Colorado Department of Public Works permit and upgrading of rest room facilities.</p>	<p>Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.</p>	<p>Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.</p>	<p>Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen.</p>
<i>Riparian Riverine</i>	<p>No construction activities other than maintenance</p>	<p>* A multipurpose (bike/hike) path from</p>	<p>* Riverway would be transferred to the City of</p>	<p>* A multipurpose (bike/hike) path from</p>

**Table 4 - Alternative Summary - CURECANTI NRA**

	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
<i>Area</i>	would be planned.	the east boundary along Highway 50 to Elk Creek and Highway 149 to the boundary south of Iola on the way to Lake City could be constructed. * Riverway would be transferred to the City of Gunnison. * Increased formal trail access to river may be constructed in the Neversink/Coopers Ranch area.  * A formal day use area—toilets, picnic tables, and parking—could be developed in the South Beaver Creek area.	Gunnison.	the east boundary along Highway 50 to Elk Creek and Highway 149 to the boundary south of Iola on the way to Lake City could be constructed. * Paved access and parking at Riverway could be constructed. * A multiuse nature trail connecting the riverine area to Gunnison could be constructed. * Increased formal trail access to the river could be constructed in the Neversink/Coopers Ranch area. * A formal day use area—toilets, picnic tables, and parking—could be developed in the South Beaver Creek area.
<i>Gunnison River Canyon</i>	No construction activity other than routine maintenance would be planned.	* The pull off at Wilson's Landing would be hardened and delineated as for day use operations. * Selected turnouts would be hardened throughout the canyon.	* There would be no additional enhancement to existing pull offs and some pull offs could be removed.	Same as Alternative C.
<i>Blue Mesa</i>	No construction activities other than maintenance would be planned	* At Elk Creek, an appropriately designed and located sewage treatment facility would replace the current lagoons. * A day use area (for picnicking and other activities) would be constructed at the Old Highway 50 area. * At the Bay of Chickens, a day use area would be constructed and landscaped, providing for picnicking and other recreational activities as appropriate. Adequate parking would also be provided.	* At Elk Creek: - The campground would be significantly reduced or removed. - Park housing would be reduced significantly and limited to required occupancy personnel. - All administrative and management functions would eventually be moved to Gunnison. - The sewage lagoon would be removed and/or relocated. - The shop/maintenance support facilities would be decreased. - The concession boat	* A new marina could be identified after the completion of a commercial services plan and carrying capacity study for the reservoir. * At Elk Creek, an appropriately designed and located sewage treatment facility would replace the current lagoons. * At Old Stevens, a new launch ramp area has been tentatively identified. A carrying capacity study must be completed before a determination could be



**Table 4 - Alternative Summary - CURECANTI NRA**

Alternative A	Alternative B	Alternative C	Alternative D
	<p>* A new launch ramp area has been tentatively identified at Old Stevens. A carrying capacity study must be completed before a determination could be made on the appropriateness of another launch facility.</p> <p>* At Pine Creek, the access road would be paved to the BOR gate above Blue Mesa Dam.</p>	<p>storage and NPS boneyard would be moved to Gunnison.</p> <ul style="list-style-type: none"> <li>- The restaurant and showers would be removed.</li> </ul> <p>* At Lake Fork:</p> <ul style="list-style-type: none"> <li>- The showers would be removed.</li> <li>- The housing and amphitheater would be reduced or removed.</li> <li>- The campground would be reduced significantly.</li> <li>- The former BOR parking area would be removed.</li> </ul> <p>- The shop facility and the large parking lot on Highway 92 on the north side of Blue Mesa Dam would be removed and the area scarified and revegetated.</p> <p>* At Ponderosa:</p> <ul style="list-style-type: none"> <li>- The lower loop of campground would be removed.</li> </ul>	<p>made on the appropriateness of another launch facility.</p> <p>* A day use area and swim beach could be constructed at the Old Highway 50 area. This would include upgraded parking, additional rest rooms, and picnic facilities.</p> <p>* At the Bay of Chickens, a day use area would be constructed and landscaped, providing for picnicking and other recreational activities as appropriate. Adequate parking would also be provided.</p> <p>* The Dillon Trail would be extended to the base of Dillon Pinnacles.</p> <p>* The Aspinall (Sapinero) Overlook would be upgraded to include paved parking, picnic shelters, and vault toilets.</p> <p>* At Pine Creek, the access road would be paved to the BOR gate above Blue Mesa Dam.</p>
<p><i>Inner Canyon</i></p>	<p>No construction activities other than maintenance would be planned.</p>	<p>* At the East Portal, the NPS would modify or replace its existing facilities so that they conform to a common architectural theme. This would include water and sewage system replacement.</p> <p>* There would be no changes at Gateway or on Crystal Reservoir.</p> <p>* At Pine Creek, all tour boat facilities on the trail would be removed and tour boat operations from Morrow Point Reservoir would be eliminated.</p> <p>* At Hermits Rest, the number of campsites would be reduced and the dock would be eliminated.</p> <p>* At the East Portal:</p> <ul style="list-style-type: none"> <li>- the NPS office and residence would be removed.</li> </ul>	<p>*At Pine Creek:</p> <ul style="list-style-type: none"> <li>- an additional dock would be provided for concession rental boats.</li> </ul>

**Table 4 - Alternative Summary - CURECANTI NRA**

	Alternative A	Alternative B	Alternative C	Alternative D
<i>Canyon Rim</i>	No construction activities other than maintenance would be planned.	* At Cimarron, the existing metal buildings would be replaced to conform to the area's architectural theme.	<ul style="list-style-type: none"> <li>- the campground would be converted to a day use area.</li> <li>- Curecanti NRA would rely on assistance from the local area (Cimarron area and BLCA) to handle emergency services.</li> <li>* There would be no changes at Gateway or on Crystal Reservoir.</li> <li>* At Cimarron: <ul style="list-style-type: none"> <li>- The BOR/NPS storage yard would be removed.</li> <li>- The picnic area would be removed.</li> <li>- The visitor contact station would be reduced to support visitor orientation and water-based recreational activities.</li> <li>- The train exhibit excluding the trestle would be removed.</li> </ul> </li> </ul>	Same as Alternative B.
<b>Park Operations and Costs</b>	<p>The current base funding for Curecanti is \$1,992,000, and staffing level is 43.5 FTEs (full time equivalencies). Park operations would continue at present levels with an emphasis on protecting resources, serving the public, and responding to incidents as they occur.</p> <p>No additional cost from potential development would be incurred.</p>	<p>There would be moderate increases in facility management, interpretation and visitor protection, and a small increase in resources management to meet the needs created by this alternative's emphasis on moderately increasing facilities and opportunities for quality water-based recreation. Additional FTEs are estimated between 4.0 and 6.0, at a cost of \$120,000 to \$200,000.</p> <p>Additional costs that could be incurred from potential development would range between 1.1 and 3.3 million dollars, depending on partnering opportunities.</p>	<p>Overall need for park operations is estimated to stay about the same or decrease slightly under this alternative. Removal of facilities would require an initial increase to handle the maintenance workload, but eventually with fewer facilities the workload would drop, requiring fewer maintenance personnel. Needed increases in resources management staff would be offset by decreases in facility management in the long term. Interpretation and visitor protection efforts would shift from developed sites to backcountry locations. Environmental education programs would be continued.</p>	<p>This alternative would require a major investment for operational increases in all areas above and beyond the cost of the additional development. Significant visitation increases would be a likely result of the additional facilities. Direct impacts of development and significant increases of use would require more staff in all operational areas: resources, visitor protection, interpretation, facility management, commercial services, and administration. The estimated range of additional FTEs that would be required to meet these needs is from 7.5 to 14.5, at a cost of</p>

**Table 4 - Alternative Summary - CURECANTI NRA**

	Alternative A	Alternative B	Alternative C	Alternative D
<b>Future Plans and Studies</b>	None.	<p>* Prescribed fire management plan would be completed. This plan would be used to establish the appropriate fire management policy.</p> <p>* A prairie dog plan would be updated to guide management actions.</p> <p>* A visitor experience and resource protection plan would be developed for the park. The plan would establish development and design capacities for a range of potential resource experience opportunity areas. It would also establish the physical capacity for each reservoir based upon the desired future visitor experience. The first part of the study would determine carrying capacity of Blue Mesa, quality of experience to be provided, and need for future launching and/or other facilities as use increases beyond current capacity.</p> <p>* A long-range management plan for the preservation and interpretation of the narrow gauge railroad and artifacts at Cimarron would be completed.</p> <p>* A commercial services plan would be</p>	<p>Additional costs that could be incurred from potential development removal would range between \$300,000 and \$350,000.</p> <p>* Prescribed fire management would be completed. This plan would be used to establish the appropriate fire management policy.</p> <p>* A prairie dog management plan would be updated to guide management actions.</p> <p>* A visitor experience and resource protection plan would be developed for the park. The plan would establish development and design capacities for a range of potential resource experience opportunity areas. It would also establish the physical capacity for each reservoir based upon the desired future visitor experience.</p> <p>* A commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.</p> <p>* All studies and inventories identified in the RMP would be completed.</p> <p>* A viewshed analysis of sensitive areas around Blue Mesa would be completed to identify areas that are necessary for protecting the semi-</p>	<p>from \$300,000 to \$500,000.</p> <p>Additional costs that could be incurred from potential development would range between 1.1 and 9.4 million dollars, depending on partnering opportunities.</p> <p>* Prescribed fire management plan would be completed. This plan would be used to establish the appropriate fire management policy.</p> <p>* A prairie dog management plan would be updated to guide management actions.</p> <p>* A visitor experience and resource protection plan would be developed for the park. The plan would establish development and design capacities for a range of potential resource experience opportunity areas. It would also establish the physical capacity for each reservoir based upon the desired future visitor experience. The first part of the study would determine carrying capacity of Blue Mesa, quality of experience to be provided, and need for future launching and/or other facilities as use increases beyond current capacity.</p> <p>* A long-range management plan for the preservation and interpretation of the narrow gauge railroad and artifacts at Cimarron would be completed.</p> <p>* An extensive wayside exhibit plan would be</p>
<b>Future Plans and Studies (Cont)</b>				



**Table 4 - Alternative Summary - CURECANTI NRA**

Alternative A	Alternative B	Alternative C	Alternative D
	<p>completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.</p> <p>* All studies and inventories identified in the RMP would be completed.</p> <p>* A viewshed analysis of sensitive areas around Blue Mesa would be completed to identify areas that are necessary in protecting the semi-primitive character of the park. Cooperative management through scenic easements and agreements with adjoining agencies, such as BLM or USFS, would be used to facilitate protection.</p>	<p>primitive character of the park. Cooperative management through scenic easements and agreements with adjoining agencies, such as BLM or USFS, would be used to facilitate protection. A boundary study would eventually need to be completed.</p>	<p>developed.</p> <p>* A commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.</p> <p>* All studies and inventories identified in the RMP would be completed.</p> <p>* A viewshed analysis of sensitive areas around Blue Mesa would be completed to identify areas that are necessary for protecting the semi-primitive character of the park. Cooperative management through scenic easements and agreements with adjoining agencies, such as BLM or USFS, would be used to facilitate protection.</p>

**Table 5 - Alternative Summary - BLACK CANYON OF THE GUNNISON NM**

General Description	Alternative A	Alternative B	Alternative C	Alternative D
	<p>Under the no-action alternative, existing management activities would continue as funds allow. Existing visitor facilities would be maintained to support current activities, but no new facilities would be built. Roads would continue to be repaired as needed. Required improvements to safety, sanitation, and access for persons with disabilities would be accomplished as funding permitted.</p>	<p>This alternative would emphasize a variety of human experiences in a rugged canyon environment. It would provide developed areas on the South Rim and less developed areas on the North Rim. Contemplation of one of nature's foremost scenic wonders would be provided for on both rims by encouraging most visitors to experience the depth of the canyon from above. A variety of other educational and recreational experiences would also be provided to protect and enhance the wilderness values of the monument.</p> <p>This alternative would emphasize viewing the canyon from the cliff top ROA to give visitors a variety of viewing opportunities to experience the canyon in a range of social settings.</p> <p>Visitors to the South Rim would find this area more developed and visited than the North Rim. Ample staff would be available to assist visitors in learning about Black Canyon resources. Visitors to the North Rim would find this area less developed and visited. Some staff may be encountered</p>	<p>This alternative would emphasize primitive human experiences, using the rugged canyon as an outdoor classroom. It would provide only minimally developed areas where necessary that allow visitors to contemplate one of nature's foremost scenic wonders and would encourage primitive experiences of the canyon through its interpretation, partnerships, and orientation programs with educational institutions.</p> <p>Educational institutions would be actively encouraged to conduct research on monument resources, visitor use, and interactive ecological processes within the Gunnison River Basin. Some areas of Black Canyon may be designated as a research natural area. Educational institutions and visitors would be encouraged to participate in a limited number of primitive learning experiences in outdoor recreation classroom settings. These could include sight-seeing, hiking, fishing, wilderness backpacking, climbing, and kayaking.</p> <p>The use of existing and new development would be limited to</p>	<p>This alternative would emphasize human experiences at the rim of a rugged canyon, providing developed areas on the South and North Rims for the visiting public. This alternative would provide opportunities to contemplate one of nature's foremost scenic wonders, allowing visitors to experience the canyon from above, while protecting the wilderness values of the monument.</p> <p>This alternative would provide easy developed access to both rims. Developed facilities would be provided to help all visitors to see the depths of the canyon easily.</p> <p>Mutually beneficial partnerships with the private sector would be encouraged to provide for visitor services and protect park resources.</p>

**Table 5 - Alternative Summary - BLACK CANYON OF THE GUNNISON NM**

	Alternative A	Alternative B	Alternative C	Alternative D
		<p>to answer questions about monument resources, but for the most part, encounters with park staff would be minimal.</p> <p>Any new public facilities would support both recreational viewing and educational activities in Black Canyon's outdoor classroom.</p> <p>Mutually beneficial partnerships would be encouraged with both educational institutions and the private sector to provide for visitor services and protect park resources.</p>	<p>the minimum necessary to meet research and educational needs in an outdoor classroom.</p> <p>Partnerships with educational institutions and private groups—retired adults, family groups, college students, and grades K-12 would be encouraged to promote Black Canyon as an outdoor classroom.</p>	
North Rim	<p>This area would remain relatively undeveloped and unchanged except for ongoing maintenance and resource management projects.</p>	<p>This area would remain relatively undeveloped and substantially unchanged except for minor improvements to existing facilities.</p> <p>Management of this area would emphasize a variety of backcountry wilderness experiences and encounters with monument resources.</p>	<p>Development would be limited to support research and educational endeavors or enhance the education and orientation values about wilderness areas on the North Rim.</p> <p>A portion of the North Rim would be reserved to support an outreach outdoor classroom partnership program with educational institutions.</p>	<p>Developments could be added so that the level of facilities would approach that of the South Rim.</p>
South Rim	<p>This area would remain relatively undeveloped and unchanged except for ongoing maintenance and protection projects.</p>	<p>Facilities for viewing the canyon from above would be maintained and improved.</p> <p>A new or upgraded visitor center would provide better visitor orientation of monument resources.</p> <p>Partnerships would be sought to provide</p>	<p>There would be no change in South Rim development except for cosmetic improvements or a shifting in the use of existing facilities.</p> <p>Based on an analysis of need, some development could be eliminated.</p> <p>Research activities</p>	<p>There would be additional development to support visitors' viewing the canyon from above.</p> <p>A new or upgraded visitor center would provide better visitor orientation of monument resources.</p> <p>Partnerships would be</p>



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	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
<b>Canyon Area</b>	Use would be monitored. Use would be limited to that necessary to maintain the wilderness character.	visitor services and protect monument resources.  Use would be monitored. Use would be limited to that necessary to maintain the wilderness character.	could increase.  Use would be monitored. Use would be limited to that necessary to maintain the wilderness character.	sought to provide visitor services and protect monument resources.  Use would be monitored. Use would be limited to that necessary to maintain the wilderness character. Higher tolerance to use would be allowed outside of the designated wilderness.
<b>East Portal</b>	There would be no changes in current management.	Common architectural themes and improvements would be coordinated between the monument, Curecanti National Recreation Area, and the Bureau of Reclamation in the East Portal Area and within the road corridor providing access.	Existing facilities would be evaluated based on need. Some facilities could be removed.	Common architectural themes and improvements would be coordinated between the monument, Curecanti National Recreation Area, and the Bureau of Reclamation in the East Portal Area and within the road corridor providing access.
<b>Land Use and Management Prescriptions (MP)</b>	<p>About 410 acres - Developed MP</p> <p>About 435 acres - Motorized Rural MP</p> <p>About 124 acres - Semi-Primitive MP</p> <p>About 17,603 acres* - Primitive MP</p> <p>About 50 acres - Protected Resource MP</p> <p>About 2,144 acres - Scenic Easement MP</p> <p>About 120 acres - Private Inholding</p> <p>*11,180 acres in the park are in wilderness</p> <p>This alternative would retain the existing rugged appearance of both the North and</p>	<p>About 621 acres - Developed MP</p> <p>About 417 acres - Motorized Rural MP</p> <p>About 122 acres - Semi-Primitive MP</p> <p>About 17,412 acres* - Primitive MP</p> <p>About 50 acres - Protected Resource MP</p> <p>About 2,144 acres - Scenic Easement MP</p> <p>About 120 acres - Private Inholding</p> <p>*11,180 acres in the park are in wilderness</p> <p>This alternative would retain the existing rugged appearance of both</p>	<p>About 621 acres - Developed MP</p> <p>About 417 acres - Motorized Rural MP</p> <p>About 122 acres - Semi-Primitive MP</p> <p>About 17,412 acres* - Primitive MP</p> <p>About 50 acres - Protected Resource MP</p> <p>About 2,144 acres - Scenic Easement MP</p> <p>About 120 acres - Private Inholding</p> <p>*11,180 acres in the park are in wilderness</p> <p>This alternative would retain the existing rugged appearance of both the North and</p>	<p>About 1,150 acres - Developed MP</p> <p>About 71 acres - Motorized Rural MP</p> <p>About 459 acres - Semi-Primitive MP</p> <p>About 16,892 acres* - Primitive MP</p> <p>About 50 acres - Protected Resource MP</p> <p>About 2,144 acres - Scenic Easement MP</p> <p>About 120 acres - Private Inholding</p> <p>*11,180 acres in the park are in wilderness</p> <p>This alternative would increase the capacity to serve visitors who want to see the canyon</p>

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	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
	<p>South Rims.</p> <p>There would be no changes in how each resource</p> <p>opportunity area in the park is used.</p>	<p>the North and South Rims. The cliff top ROA has about 411 acres (2.0%) more land allocated to the developed MP than is in the no-action alternative. Because of improvements in facilities on both rims, the canyon backdrop ROA would appear about the same as it does under the no-action alternative.</p>	<p>South Rims. The cliff top ROA has about 411 acres (2.0%) more land allocated to the developed MP than is in the no-action alternative. Because of improvements in facilities on both rims, the canyon backdrop ROA would appear less developed.</p> <p>Some areas could be designated as research natural areas.</p>	<p>from above on both the North and South Rims. The cliff top ROA has about 950 acres (4.5%) more land allocated to the developed MP than is in the no-action alternative. Because of improvements in facilities on both rims, the canyon backdrop ROA areas would appear less rugged and more developed.</p>
<b>Interpretation</b>	<p>Interpretation would remain focused on the natural resources of the park with allowances for expanding stories of significant cultural resources in the park.</p>	<p>Interpretation would have a broader focus and include both natural and cultural resources from educational and recreational perspectives.</p>	<p>Interpretation would increase its focus on research and education activities about the monument's resources, including both natural and cultural resources.</p>	<p>Interpretation would have a broader focus and include both natural and cultural resources from a recreational perspective.</p>
<b>Partnerships</b>	<p>Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management.</p> <p>There would continue to be a lack of long- or short-term plans for dealing with regional recreation use.</p> <p>Current partnerships would continue to focus on local organizations to cooperatively facilitate resource protection.</p> <p>Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance,</p>	<p>Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management.</p> <p>Management would encourage local agencies to ensure that any development surrounding the monument be done in a sensitive manner, so that it would not detract from the monument's scenic values.</p> <p>This alternative would broaden partnership strategies to rely on an advisory group of public participants and land management agencies to work cooperatively</p>	<p>Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management.</p> <p>Management would encourage local planning agencies to keep lands surrounding the monument in an undeveloped state.</p> <p>This alternative would broaden partnership strategies to use friends groups, educational institutions, or nonprofit groups to work cooperatively in developing short- and long-term plans for addressing regional recreation use and</p>	<p>Scenic values inside and adjacent to the monument would continue to be cooperatively evaluated with the Delta and Montrose Planning Commissions and the Bureau of Land Management.</p> <p>Management would encourage that any development surrounding the monument be done in a sensitive manner, so that it would not detract from the scenic values of the monument.</p> <p>This alternative would broaden partnership strategies to use an advisory group of public participants and land management agencies to work cooperatively in developing short- and long-term plans for</p>

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	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
	trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.	in developing short- and long-term plans for addressing regional recreation use and resource protection. The possible formation of a friends group would also be explored. Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.	resource protection. Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.	addressing regional recreation use and resource protection. Information exchanges with local organizations—West Elk Scenic Loop Byway, Uncompahgre Conservation Education Alliance, trail committees, Montrose and Delta Visitor Center and Convention Bureaus, et al.—would continue.
<b>Natural Resource Management</b>	The park would continue to work to meet state and local compliance requirements as funding permitted.	The park would continue to work to meet state and local compliance requirements as funding permitted. The park would pursue a coordinated program for Class I air monitoring with the U.S. Forest Service and the State of Colorado.	The park would continue to work to meet state and local compliance requirements as funding permitted. The park would pursue a coordinated program for Class I air monitoring with the U.S. Forest Service and the State of Colorado.	The park would continue to work to meet state and local compliance requirements as funding permitted. The park would pursue a coordinated program for Class I air monitoring with the U.S. Forest Service and the State of Colorado.
<b>Natural Quiet</b>	Threats to natural quiet would be addressed on a case by case basis.	A noise management strategy would be implemented.	A noise management strategy would be implemented.	A noise management strategy would be implemented.
<b>Paleontology</b>	A partial inventory of resources has been obtained. Inventorying would be completed as funding permitted.	A partial inventory of resources has been obtained. Inventorying would be completed in partnership with educational institutions as funding permitted.	A partial inventory of resources has been obtained. Inventorying would be completed in partnership with educational institutions as funding permitted.	A partial inventory of resources has been obtained. Inventorying would be completed prior to development of the North Rim.
<b>Soils/Geology</b>	A program that encourages continued research to provide a	A program that encourages continued research to provide a	A program that encourages continued research to provide a	A program that encourages continued research to provide a



**Table 5 - Alternative Summary - BLACK CANYON OF THE GUNNISON NM**

	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
<b>Vegetation</b>	<p>better understanding of the evolution of the Black Canyon would continue.</p> <p>A program to control noxious weeds through the least environmentally harmful method would continue.</p>	<p>better understanding of the evolution of the Black Canyon would continue.</p> <p>A program to control noxious weeds through the least environmentally harmful method would continue.</p> <p>A program to identify habitat fragmentation and mitigate its effects would be developed cooperatively with educational institutions and land management agencies.</p>	<p>better understanding of the evolution of the Black Canyon would continue.</p> <p>A program to control noxious weeds through the least environmentally harmful method would continue.</p> <p>A program to identify habitat fragmentation and mitigate its effects would be researched through an educational institution.</p>	<p>better understanding of the evolution of the Black Canyon would continue.</p> <p>A program to control noxious weeds through the least environmentally harmful method would continue.</p> <p>A program to identify habitat fragmentation and mitigate its effects would be developed cooperatively with educational institutions and land management agencies</p>
<b>Wildlife</b>	<p>A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.</p>	<p>A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.</p>	<p>A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.</p>	<p>A cooperative program with the State of Colorado and the U.S. Fish and Wildlife Service to maintain the trout fishery and delist appropriate native Colorado fish species would continue.</p>
<b>Water</b>	<p>Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue. Efforts with the USGS and the National Biological Survey (NBS) are narrowly focused on water-related issues.</p>	<p>Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue.. Efforts with the USGS and the NBS to establish water quality monitoring would be expanded to include educational institutions.</p> <p>A database would be developed to track water-related data used to guide management decisions.</p>	<p>Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continue. Efforts with the USGS and the NBS to establish water quality monitoring would be expanded to include educational institutions.</p> <p>A database would be developed to track water-related data used to guide management decisions.</p>	<p>Cooperative efforts with the Bureau of Reclamation and the State of Colorado to establish a protected flow of the Gunnison River through the monument would continuc. Efforts with the USGS and the NBS to establish water quality monitoring would continue.</p> <p>A database would be developed to track water-related data used to guide management decisions.</p>
<b>Cultural</b>	<p>There would be no</p>	<p>A new interpretive</p>	<p>A new interpretive</p>	<p>A new interpretive</p>

**Table 5 - Alternative Summary - BLACK CANYON OF THE GUNNISON NM**

	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
<b>Resource Management Interpretation</b>	program to expand interpretation of cultural resources.	program would be developed to communicate the history and prehistory through a partnership with educational institutions and private groups. Interpretive themes would be expanded to preserve significant sites and tell the story of water development in western Colorado, using an array of partners—educational institutions, historical societies, and private groups.	program would be developed to communicate the history and prehistory through a partnership with educational institutions and private groups. Interpretive themes would be expanded to preserve significant sites and tell the story of water development in western Colorado, using an array of partners—educational institutions, historical societies, and private groups.	program would be developed to communicate the history and prehistory through a partnership with educational institutions and private groups. Interpretive themes would be expanded to preserve significant sites and tell the story of water development in western Colorado, using an array of partners—educational institutions, historical societies, and private groups.
<b>Facilities and Development Changes</b>	Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. No construction activities other than maintenance would be planned.	Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen. <ul style="list-style-type: none"> <li>- new or improved visitor center</li> <li>- additions to existing parking areas</li> <li>- components of the old ranger station complex near Kneeling Camel would be evaluated for rehabilitation or removal. A group camp might be established at this location.</li> <li>- architectural theme enhancements</li> <li>- new trails</li> <li>- rehab North Rim</li> </ul>	Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen. <ul style="list-style-type: none"> <li>- amphitheater converted to educational use</li> <li>- facilities at Pulpit Rock would be removed</li> <li>- the old ranger station complex near Kneeling Camel would be converted to support research and educational uses</li> <li>- architectural theme enhancements</li> </ul>	Facilities would be improved to meet high-quality standards and reflect a common architectural theme as funding permitted. The following would be some of the possible facility changes were this alternative to be chosen. <ul style="list-style-type: none"> <li>- new or improved visitor center (South Rim)</li> <li>- visitor center contact station (North Rim)</li> <li>- newly paved roads and parking areas</li> <li>- two picnic areas (North Rim)</li> <li>- entrance station (North Rim)</li> <li>- campground (100 sites — North Rim)</li> <li>- additions to existing parking areas</li> <li>- the old ranger station complex converted to educational uses</li> </ul>

**Table 5 - Alternative Summary - BLACK CANYON OF THE GUNNISON NM**

	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
		campground		<ul style="list-style-type: none"> <li>- architectural theme enhancements</li> <li>- new trails</li> </ul>
<b>Park Operations and Costs</b>	<p>The current base funding for Black Canyon is \$671,000, and staffing level is 15.0 FTEs (full time equivalencies). Park operations would continue at present levels with an emphasis on protecting resources, serving the public, and responding to incidents as they occur.</p> <p>No additional cost from potential development would be incurred.</p>	<p>Some increases in the areas of facility management, interpretation, visitor protection, and resource management would be required to meet the needs created by this alternative's emphasis on moderately increasing facilities for viewing the canyon and increased opportunities for education. Additional FTEs are estimated between 4.0 and 6.0, at a cost of \$120,000 to \$200,000.</p> <p>Additional costs that could be incurred from potential development would range between 0.6 and 4.4 million dollars, depending on partnering opportunities.</p>	<p>Overall need for park operations would increase slightly under this alternative. Removal of facilities would require an initial increase to handle the maintenance workload, but eventually with fewer facilities the workload would drop. Although the current level of maintenance staffing is inadequate, under this scenario only a small increase would be needed because there would be fewer facilities to maintain, except for improvements made to the old ranger complex on the North Rim. Some increases in resource management, visitor protection, and interpretation staffing are anticipated. Efforts would be shifted to provide additional services for educational groups and contacts in the wilderness.</p> <p>The estimated range of additional FTEs that would be required to meet these needs are approximately 1.0 to 1.5 for each of the four programs, or a total of 4 to 6 FTEs. The associated range of additional cost is \$120,000 to \$200,000.</p>	<p>This alternative would require a major investment for operational increases in all areas, above and beyond the cost of the additional development. Significant visitation increases would be a likely result of the additional facilities. The North Rim in particular would experience additional visitation as access and facilities are improved. Direct impacts of development and significant increases of use would require more staff in the four primary operational areas: resource management, visitor protection, interpretation, and facility management. The estimated additional FTEs that would be required to meet these needs range from 4.0 to 7.0, at a cost of from \$150,000 to \$275,000.</p> <p>Additional costs that could be incurred from potential development would range between \$9.3 and \$16.9 million, depending on partnering opportunities.</p>



**Table 5 - Alternative Summary - BLACK CANYON OF THE GUNNISON NM**

	Alternative A	Alternative B	Alternative C	Alternative D
			Additional costs that could be incurred from potential development removal would range \$130,000 to \$150,000.	
<b>Future Plans and Studies</b>	Planning needs would be continually identified on an annual basis.	<p>Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.</p> <ul style="list-style-type: none"> <li>- a visitor experience and resource protection plan, including noise management</li> <li>- a wildland fire management plan</li> <li>- long-range interpretive plan</li> <li>- a commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.</li> <li>- wilderness management plan</li> <li>- emergency operations plan</li> <li>- trail and backcountry management plan</li> </ul>	<p>Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.</p> <ul style="list-style-type: none"> <li>- a visitor experience and resource protection plan, including noise management</li> <li>- a wildland fire management plan</li> <li>- long-range interpretive plan</li> <li>- a commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.</li> <li>- wilderness management plan</li> <li>- emergency operations plan</li> <li>- trail and backcountry management plan</li> </ul>	<p>Planning needs would be continually identified on an annual basis. Increased priority would be given to the following plans.</p> <ul style="list-style-type: none"> <li>- a visitor experience and resource protection plan, including noise management</li> <li>- a monitoring plan for increased visitor use</li> <li>- a wildland fire management plan</li> <li>- long-range interpretive plan</li> <li>- a commercial services plan would be completed for the park. The plan would establish the necessary and appropriate commercial visitor services to support park operations.</li> <li>- wilderness management plan</li> <li>- emergency operations plan</li> <li>- trail and backcountry management plan</li> </ul>

**Table 6 - Summary of Impacts of Alternatives**

Description	Alternative A	Alternative B	Alternative C	Alternative D
<b>N A T U R A L   R E S O U R C E S</b>				
<b>Soils</b>				
<i>Curecanti</i>	* No change. Soil compaction in visitor use areas would continue.	* Increase in soil compaction in new areas surrounding Blue Mesa.	* Decrease in soil compaction, long term.  * Increase soil compaction near existing facilities.	* Increase in soil compaction on trails, lakeshores, and areas surrounding development surrounding Blue Mesa.  * Rapid increase in soil erosion, loss of soil permeability, and an increase in runoff around Blue Mesa Reservoir and Gunnison River Canyon.
<i>Black Canyon</i>	* No change. Accelerated soil erosion in the way in ROA may continue.	* Increase in soil compaction in cliff top ROA.  * Short-term impacts from potential development within canyon backdrop and cliff top ROAs.	* Potentially improved soil conditions from increased visitor awareness on North Rim.  * Short-term compaction and erosion of soils from facility remodeling or removal.  * Increases in information about soil resources from research activities.	* Increase in soil compaction on trails and near development in the canyon backdrop and cliff top ROAs.  * Increased trail standards and maintenance would decrease soil erosion within the way in ROA.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>• Development of the Visitor Experience and Resource Protection Plan (VERP).</li> <li>• Temporary closures, rehabilitation, and replanting of impacted areas.</li> <li>• Education and interpretation to encourage low-impact recreation and backcountry techniques.</li> <li>• Soil and topography modifications to rehab developed and damaged areas.</li> </ul>			
<b>Vegetation</b>				
<i>Curecanti</i>	* Levels of trailing indicated by past trends would continue.  * Improvements on grazing management dependent on funding.	* Potential increase in trampled vegetation and trailing adjacent to developments and shorelines.  * Potential decrease in new exotics from increased monitoring	* Potential decrease of trampled vegetation and trailing.  * Short-term removal of vegetation from facility removal.  * Long term, restoration of native plant communities.	* Increase in vegetation trampling and trailing.  Increases in exotics near potential developments surrounding Blue Mesa.  * Increase in

**Table 6 - Summary of Impacts of Alternatives**

Description	Alternative A	Alternative B and removal.	Alternative C	Alternative D
<i>Black Canyon</i>	* Same as Curecanti.	* Increases in trampled vegetation and trailing adjacent to areas of concentrated visitor use.  * Potential decrease in new exotics from increased monitoring and removal.	* Potential decrease in new exotics from increased monitoring and removal.  * Grazing impacts reduced from intensified management.  * Same as Curecanti.	manipulation of vegetation surrounding Blue Mesa.  * Potential for increases in disease and insects.  * Increases in trampled vegetation and trailing adjacent to areas of concentrated visitor use.  * Potential degradation of vegetation.  * Increase in exotics.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>• Conduct and implement a visitor experience and protection plan (VERP).</li> <li>• Temporary closures and replanting of damaged areas.</li> <li>• Education and interpretation to encourage low-impact recreation and backcountry techniques.</li> <li>• Increase research activities and partnering with other research institutions.</li> <li>• Develop program of exotics control coordinated with local officials and research facilities.</li> <li>• Conduct annual inspections and removal of tree hazards.</li> <li>• Maintenance of roadside and trailside vegetation would be done as needed.</li> <li>• Improved grazing management will reduce damages from permitted livestock use.</li> <li>• Complete North Rim boundary survey; erect fencing to keep out trespass cattle.</li> <li>• Use design and landscaping to direct and control foot and vehicle traffic in developed areas.</li> </ul>			
<b>Wildlife</b>	No effect.	No effect.	No effect.	* Increased potential impacts to interfere with existing wildlife migration patterns in Blue Mesa ROA.
<i>Curecanti</i>				* Some habitat lost and migration pattern changes.
<i>Black Canyon</i>	* Same as Curecanti.	* Same as Curecanti.	* Same as Curecanti.	* Increases in visitation and facility development stress sensitive wildlife populations on the North Rim.  * Some reductions in habitat and species.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>• Continue cooperative management of wildlife and habitat with CDOW.</li> <li>• Increase partnering with research institutions to gather data and resolve wildlife issues.</li> <li>• Where necessary, take steps for restoration of habitat and listed species.</li> </ul>			



**Table 6 - Summary of Impacts of Alternatives**

<b>Description</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>
<b>Fisheries</b>	* No effect.	* Increased demands on the fishery from increased fishing levels.	* No change in fishing level.	* Same as Alternative B.
<i>Curecanti</i>			* Information gain from research of natural systems.	
<i>Black Canyon</i>	* Same as Curecanti.	* Improvement in wilderness fishery from increased protection patrols.	* Same as Curecanti.	* Same as Alternative B.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>• Conduct creel surveys and other studies to monitor fishery.</li> <li>• Continued cooperation with CDOW to manage fishery.</li> <li>• Increase protection patrols in the inner canyon to monitor fishing and enforce fishing laws.</li> </ul>			
<b>T&amp;E Species</b>	* No effect.	* No effect.	* No effect.	*No effect.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>• Establish an inventory and monitoring system for listed species that are known to be in the park or have the potential to occur in the park.</li> <li>• Continue consultation with USFWS for all projects and proposals that could have a potential impact on listed species and determine mitigation efforts to remove the impact, or abandon the project or proposal.</li> </ul>			
<b>Air Quality and Natural Quiet</b>	* No effect.	* Minor changes in noise levels.	* Improved natural quiet.	* Potential increased noise levels and air pollution from increases in visitors, traffic, and boats on Blue Mesa and Morrow.
<i>Curecanti</i>		* No impacts on air quality.	* Potential decreased noise levels and a decrease in air pollution from vehicles and watercraft.	
		* Noise distractions from boating operations and traffic in Blue Mesa ROA.		
		* Potential increase in noise levels from possible development.		
<i>Black Canyon</i>	* No effect on air quality.	* No effect on air quality.	* Potential information gain for air quality.	* Potential increased noise levels and air pollution from increases in visitors and traffic on the North Rim. Some increase on the South Rim.
	* No change in noise levels.	* Some increase in noise levels from vehicle traffic.	* No change in noise levels on the South Rim. Marginal increase on the North Rim.	
	* Noise levels from aircraft overflights could increase.			*Noise levels from aircraft overflights could increase.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>• Develop a visitor experience and protection plan (VERP) to establish carrying capacities, monitoring protocols, and an acceptable range of noise levels based on desired visitor experience.</li> </ul>			

**Table 6 - Summary of Impacts of Alternatives**

Description	Alternative A	Alternative B	Alternative C	Alternative D
<b>Wetlands and Floodplains</b>	* No effect on floodplains or wetlands.	* No effect on floodplains or wetlands.	* No effect on floodplains or wetlands.	* No effect on floodplains or wetlands.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>• Site planning will further identify potential effects and mitigation requirements.</li><li>• Parks will continue to work with BOR and other entities to develop a Water Delivery Contract and/or quantify the Federal Reserved Water Right for Black Canyon.</li></ul>			
<b>Water Quality</b>	* No effect.	* No effect.	* Decrease in water contaminants from reductions in development facilities.	Potential increase in water contaminants from development, vehicles, and watercraft.
<i>Curecanti</i>				* Possible degradation of Blue Mesa water quality from potential developments on private land.
<i>Black Canyon</i>	* Same as Curecanti.	* Same as Curecanti.	* Same as Curecanti.	* Potable water needs on the rim would increase.  * Potential degradation of groundwater quality from additional developments and vehicles.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>• Continue upstream water quality monitoring in Curecanti.</li></ul>			
<b>Paleontological Resources</b>	* No effect.	* No effect.	* Better protection as a result of completed survey and treatment of resources.	* Possible damage from construction activities; disturbance or theft resulting from additional visitor use.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>• Prior to any land-modifying activities, completion of paleontological survey of affected site by qualified paleontologist.</li><li>• Develop a visitor experience and resource protection plan (VERP) that will establish protection standards for paleontological resources, including a mitigation plan.</li><li>• Use partnerships and alliance with educational institutions for protection and evaluation of sites.</li><li>• Use ranger patrols to detect illegal digging and collecting.</li><li>• Use interpretive programming to educate visitors on the value of protecting fossil resources.</li></ul>			
<b>C U L T U R A L   R E S O U R C E S</b>				
<b>Ancestral Resource</b>	* No known effect.	* No known effect.	* No known effect.	* No known effect.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>• Prior to the development of future site plans, cultural resources would be investigated, recorded, mapped, and run through sampling, collecting, and testing in areas called for in a proposal.</li></ul>			

**Table 6 - Summary of Impacts of Alternatives**

Description	Alternative A	Alternative B	Alternative C	Alternative D
	<ul style="list-style-type: none"><li>Complete park survey of areas not previously surveyed. Increase ranger patrols and provide interpretive programming to increase protection of resources.</li><li>Use an advisory group of public and agency participants to develop additional strategies for protecting ancestral resources.</li><li>Consult with Ute Tribes to identify and locate possible site conflicts and obtain recommendations.</li></ul>			
<b>Historic Resources</b>	* No effect.	* No effect.	* No adverse effect.	* No effect.
<i>Curecanti</i>			* Could diminish visitor education of railroad development.	
<i>Black Canyon</i>	* No adverse effect.	* No adverse effect.	* No adverse effect.	* No adverse effect.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>Use engineering and design to preclude significant impacts to historic character of North Rim Road while maintaining or improving road.</li><li>Ensure that all work affecting historic buildings and structures meets the <i>Secretary of the Interior's Standards for Rehabilitation</i> and any other constraints mandated by <i>NPS-28, Cultural Resource Management Guideline</i>.</li><li>Have plans and drawings reviewed and approved by a historical architect during design of project.</li><li>The old cookhouse on the North Rim will be allowed to naturally deteriorate, as previously approved.</li><li>The old ranger complex, exclusive of the cookhouse, may be modified or removed.</li></ul>			
<b>Collections</b>	* Collections storage in below stand facility.	* Collections relocated to a stable area sufficient to meet standards. Cost would be moderate.	* Same as Alternative B.	* Collections relocated to a new facility sufficient to meet standards at significant cost.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>Meet collections storage and curatorial requirements as specified in the <i>NPS Museum Handbook</i>.</li></ul>			
<b>Ethnographic Resources</b>	* Unknown resources.	* Increased knowledge and protection.	* Increased knowledge and protection.	* Potential to increase conflicts with resources, especially on the North Rim.
<i>Mitigation</i>	<ul style="list-style-type: none"><li>Continue consultation with Ute tribal governments pertaining to ethnographic resources and potential sites.</li><li>Complete an ethnographic inventory as staffing and funding allow.</li><li>Complete Sec. 106 clearance, including review and input by the Ute tribal government, for future undertakings.</li></ul>			
S O C I O E C O N O M I C   R E S O U R C E S				
<b>Visitation, Visitor Experience, and Area Economic Impacts</b>	<ul style="list-style-type: none"><li>* No significant changes anticipated.</li><li>* Small increases in visitation and economic impacts are</li></ul>	<ul style="list-style-type: none"><li>* Some increases in visitation and economic impacts are expected over time.</li><li>* Greater array of visitor needs would</li></ul>	<ul style="list-style-type: none"><li>* Additional North Rim visits, with South Rim visits about the same or declining slightly.</li><li>* Economic benefits</li></ul>	<ul style="list-style-type: none"><li>* Increases in visitation, especially North Rim. Increases in economic benefits.</li><li>* Greatest array of recreational</li></ul>



**Table 6 - Summary of Impacts of Alternatives**

Description	Alternative A	Alternative B	Alternative C	Alternative D
	expected.	be served.  * Opportunities for solitude about the same.	expected to decline.  * Fewer visitor recreational opportunities; remaining experiences tend to me more primitive in nature.  * Greater opportunity for solitude.	opportunities for  Curecanti. Potential facility additions on the North Rim would decrease the rugged canyon visitor experience in Black Canyon.  * Some decline in opportunities for solitude.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>Adjustment in park operations, staffing, and funding would be needed to accommodate different levels of visitation.</li> <li>Park would work with local communities and governments to identify ways to minimize impacts to changing visitation.</li> <li>Interpretive contacts and signing would provide information on recreational opportunities and how visitors can participate safely with minimum impact to the environment.</li> </ul>			
<b>Park Operations Impacts</b>	* No change in current funding base of \$1,992,000 and staffing of 43.5 FTEs in Curecanti and \$671,000 and staffing of 15.0 FTEs in Black Canyon.	* Moderate increase in construction activities and associated traffic.  * Small increase in solid waste production.  * Increase in potable water needs and hauling costs.  * Moderate increase in workload, personnel, and funding.	* Short-term impacts from removal of facilities.  * Short-term need for increase in personnel and funding, decreasing to about present levels over time.	* Greatest increases in workloads, personnel, and funding.
<i>Mitigation</i>	<ul style="list-style-type: none"> <li>Planning would be completed to reduce disruptions and dangers to visitors and park staff from traffic and other activities related to construction and implementation of plans.</li> <li>If insufficient funding and/or staffing is available, management will need to prioritize work and objectives, perhaps not accomplishing all components of the plan.</li> </ul>			

# THE ENVIRONMENT AND CONSEQUENCES OF ALTERNATIVES

## INTRODUCTION

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All action alternatives will meet the specific objectives previously described in different ways. Management prescriptions are used as the basis for all alternatives and are allocated differently. The resource opportunity areas are used to help the reader understand the different components of each park that contribute to visitor experience and, ultimately illustrate some facet of the nation's heritage that makes these parks worthy of representation in the national park system.

The alternatives evaluated within this environmental assessment represent proposals for land allocation within each park. *Only those areas of the park that could be affected are described. Future site-specific proposals after approval of this plan need to be evaluated by further surveys and environmental compliance.* Effects are documented in general terms and are related to the descriptions of the resources previously described.

Impact topics have been selected on the basis of significant resources and the potential for beneficial or adverse effects on them by each alternative as required by law, regulation, and NPS policy. Topics that would not be impacted under any of the alternatives are not discussed.

Impacts may be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther

removed from the place, but are still reasonably foreseeable.

Cumulative effects are the impacts on the environment that result 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. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Actions for land allocation set the basis for evaluating effects. Land allocation, by itself, may not be significant, but may lead to actions that could be. *Therefore each future site-specific proposal after plan approval must be evaluated for individual as well as cumulative effects and an EIS prepared if significant impacts are anticipated.*

## NATURAL RESOURCES

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Management decisions are based on the approved resource management plan, and monitoring would be conducted to evaluate actions and make refinements to the RMP. Specific objectives are also taken into consideration. Initially, much of the work would be reactive, responding to and evaluating development proposals. Studies would continue based upon availability of funding and staffing. Individual projects would be evaluated on a case-by-case basis. No impacts would be anticipated regarding listed threatened and endangered species, because compliance, including mitigation, would occur prior to project implementation.

## Soils

### Curecanti—Description of the Environment

The topographic features of the recreation area are of three dissimilar types. More specific details on soil types can be found in the *Soil Survey of Gunnison Area, Colorado*. Besides the use of ROAs, the soil types described below can be used to characterize the environment where impacts could occur from increases of development and visitor use.

- The areas north of Blue Mesa and the town of Gunnison consist primarily of tertiary ash flow and pre-ash flow of andesitic lava. The lava is small-grained and dark gray and contains phenocrysts of feldspar and darker minerals. The tertiary ash flow and pre-ash flow also consist of breccias, tuffs, and conglomerates. Quaternary gravels and alluviums are encountered immediately adjacent to the Gunnison River, Tomichi Creek, and in areas surrounding Gunnison.
- Gentle slopes, flat beaches, and occasional steep bluff faces characterize most of the landscape to be seen from Blue Mesa Reservoir. These slopes and flats are mostly grassland connecting with some low brush and cottonwoods along drainages as well as conifers on the northern, sheltered slopes. Scenic views up the canyons and valleys of the major river and stream tributaries to forest-covered mountain slopes, dramatically eroded cliff faces, and snow-clad peaks can also be seen from Blue Mesa Reservoir.
- Morrow Point and Crystal Reservoirs lie at the bottom of the spectacular fjord-like gorge. The geology of the canyon tells of volcanic outpourings, powerful forces, tremendous metamorphic heat, and subsequent band-saw action of a rushing stream that carved its way deep into the landscape. The shores of Blue Mesa Reservoir display clues to dramatic geological events. Breccia, a soft volcanic material, has eroded into spires, pillars, and cones and is later capped by superheated volcanic ash. This volcanic action welded the breccia and ash into a highly erosion-resistant

rock that forms the vertical cliffs below the mesa tops.

### Black Canyon—Description of the Environment

The topography and soils of Black Canyon are similar to the third type described above. The geologic history and evolution of Black Canyon of the Gunnison National Monument has been written over a period of 1.7 billion years. The resulting topography and soils are characterized by the Gunnison River channel as a typically active, down-cutting stream. There is little sediment load now because of the thin soil mantle and reduced peak springtime flows, since the construction of the upstream dams of the Aspinall Unit. Weathering and erosion continue to be the main geologic processes, although plate uplift may have ceased. Most of the rocks identified are Precambrian, metamorphic, and igneous, which are very resistant to erosion.

Canyon rim elevations range from 7,400 to 9,040 feet above sea level while the canyon floor elevation is 6,500 feet at the east end of the monument and about 1,000 feet lower at the west end. The highest walls within the monument are a sheer 2,200 feet above the river. The average river-to-rim height is 1,800 feet, where canyon walls vary from steep sloping ridges with deep side canyons to vertical Precambrian rock. Generally, the canyon rim is gently rolling interrupted by cuts of steep side canyons. Because of the precipitous walls, no constructed or maintained trails exist from the rim to the canyon floor. Eight or more access routes exist and are all subject to rock slides and debris flows because of the steep slope. Through-canyon foot travel is usually not possible, except during extremely low flows, when it is possible to swim and wade across the river in the dozens of locations necessary to avoid cliff-outs and extreme terrain.



Three distinctly different areas can be described in Black Canyon:

- The North Rim shows ridges of sedimentary rock with nearly vertical, bare bedrock walls.\*
- The South Rim displays sedimentary rock with gentler slopes and additional side canyons.\*  
\* Both rims have exposed bedrock and thin soils that can be affected through increased visitation and use.
- Alluvial outwash occurs along the canyon floor particularly at the mouth of the side canyons and along the main stem, where backwater deposits develop. With the loss of extremely high spring flows, increases in riparian vegetation have occurred adjacent to the river. In addition, vegetation is well established on alluvial deposits and in side canyons.

## Impacts of the Alternatives—General

### *Curecanti and Black Canyon*

For developments that take place within the developed management prescription area and along new trails in other management prescription areas, the impacts of visitor traffic to soil can be directly and indirectly caused by continual and increased use of the resource. Potential impacts that could occur from visitor use include soil compaction, soil erosion, loss of soil permeability, changes in soil chemistry, and loss in soil insulation. Areas that have the most recovery potential from impacts of development are located in the first type described for Curecanti. Thin soils located on the North Rim of Black Canyon and the third type described for Curecanti have the least recovery potential.

In the developed MP areas, there would be provisions to harden trails and encourage visitors to stay on maintained trails. Special trail design methods would be used in high-slope and soil erosive areas.

Buildings, roads, trails, and parking area site preparation would result in soil addition or removal and destruction of soil structure.

These can occur mostly in developed MP or motorized rural MP areas. Removal and displacement of topsoil would occur where pavement and buildings are located and utilities or other facilities are installed. Foot traffic in and around campgrounds, picnic areas, and interpretive facilities would affect vegetation and soils.

On trails or where visitor use is concentrated, the most common impact on soil would be compaction, which lowers soil permeability, changes the local soil moisture, and decreases water storage capability. As a result, water transmission within soils would decrease, and surface runoff and soil erosion would increase.

Unauthorized expansion of trail areas on the fringes of visitor uses area most often leads to continual trampling that gradually diminishes vegetation and increases soil exposure to wind, rain, and hail. This can occur mostly in developed and motorized rural MPs.

### *Curecanti*

The new resource management plan, which prescribes specific proposals for actions to facilitate the long-term protection of the park's resources, would be implemented as funds become available.

In the short term, there could be a direct impact to soils and landforms from potential maintenance and construction projects and increases in visitor use. This would occur in areas designated for development and along new access routes within the developed and motorized rural MP.

In the long term, increases in visitors and watercraft, introduction of exotic plant species inadvertently brought in via visitor use (e.g., on vehicles, watercraft, visitor clothing, pets, etc.), and the incidental release of petroleum products from

watercraft use contribute to the following changes in soil characteristics:

- increased soil compaction
- accelerated soil erosion
- changes in soil chemistry
- reduction of soil aeration and infiltration rates

Consequently, there may be an increase of sediment load and pollution in the reservoir and development of informal trails proportional to increase in visitor use. Potential beneficial actions such as the relocation of sewage lagoons may also have negative effects that could result in localized buildup of soil moisture from filter fields, which cause water to occupy more intra-particulate space, affecting growth on site.

### **Impacts of Alternative A**

The no-action alternative would continue existing management with no additional major developments except those already planned and approved. Existing visitor facilities would be maintained to support present activities. Required improvements to safety, sanitation, and accessibility for persons with disabilities would be implemented as funding permitted. Routine maintenance would continue. Generally there would be little or no effect on soils from this alternative.

#### ***Curecanti***

There would be no change in existing impacts. Soil compaction in areas of visitor use such as trails and campgrounds would continue.

#### ***Black Canyon***

There would be no change in existing impacts, but accelerated soil damage could continue if no long-term strategy for managing regional recreation is formulated.

The way in ROA (routes to the bottom of the canyon) would be subjected to continuance of soil damage from visitors who access the Gunnison River. Soil erosion and loose rock make access routes difficult and raise safety concerns. Safety, sanitation, and access for persons with disabilities would continue to be accomplished when funding becomes available. Research would continue in geologic processes of the canyon. Findings would be used in the development of interpretive/educational programs for visitors.

### **Impacts of Alternative B**

#### ***Curecanti***

An increase in visitor experience opportunities may bring attention to areas now infrequently used. This could impact soil resources in those areas as a result of the additional use.

The majority of impact to soils would occur from additional development and use on lands surrounding Blue Mesa.

#### ***Black Canyon***

This alternative would provide for increases in visitor traffic. Potentially, this could further compact the soil along and adjacent to access routes, in areas adjacent to developed areas, and along formal and informal trails. The Gunnison River within the river ROA and wilderness-designated areas would not be affected and this alternative would continue to maintain its natural, historical, recreational, and cultural values.

The cliff top and canyon backdrop ROAs may receive the greatest short-term soil impact because of potential development of visitor viewing and educational facilities on the South Rim. In the short term, there would be a direct impact to soils as described

in the Impacts of Alternatives—General. In the long term, the soil resources within the canyon backdrop ROA would maintain their original state with only minor improvements to existing development on the North Rim.

Acreage designated for potential development in alternative B amount to about one percent of the total park acreage. The proposal allows for more motorized touring, which could increase the possibility of road corridor impacts (RVs parking or stopping to take pictures), but would also increase experiences for that segment of visitors.

## **Impacts of Alternative C**

### ***Curecanti***

As a result of decreasing development, the soil would be affected temporarily, but in the long term it would eventually return to its natural condition of supporting life and giving credence to the semi-primitive recreation theme of Curecanti National Recreation Area.

An emphasis on decreasing development could result in more soil impacts in existing areas as those limited facilities provide for a growing population of water-based recreation users. In the short term, the removal of buildings would create soil erosion when demolition machinery and associated traffic begin to impact the site.

### ***Black Canyon***

Development levels would be about the same as in Alternative B, but the emphasis for development use would be switched on the North Rim to educational uses. The North Rim would also be developed to support research and educational projects, and as a result, wilderness values and orientation would sensitize visitors to the importance of proper conservation; thus soil impacts to the

area from visitor use have the potential to be lessened through increased visitor awareness of harmful activities. The South Rim would have short-term impacts as a result of cosmetic changes in existing facilities and their use.

Visitors of all ages would be exposed to more educational opportunities within the wilderness area. According to the 1979 Soil Survey Map, the North Rim of the Black Canyon consists of “Deep, nearly level to steep, well drained loam and stony loam that formed in outwash alluvium derived from igneous rock.” Many of the activities allowed in wilderness-designated areas are consistent with the purpose and intent of the 1964 Wilderness Act; therefore, many of the research and educational activities would be evaluated to ensure the preservation of wilderness characteristics and values. This would improve conservation measures in the wilderness through an increase in visitor awareness.

Information about the soil resources of the park would increase. If soil and geologic research activities are encouraged, there would be an increase of natural resource data available for monitoring impacts within the park unit.

## **Impacts of Alternative D**

### ***Curecanti***

Increased development surrounding Blue Mesa would increase impacts on soils near the reservoir. Increases in capacity for watercraft, visitors, and people would increase soil compaction on trails, lakeshore, and on areas surrounding developments. A rapid increase in soil erosion, loss of soil permeability, and an increase in runoff could result from the use and development of recreational facilities around Blue Mesa Reservoir and Gunnison River Canyon.



## ***Black Canyon***

An increase of 85% in lands potentially allocated to development within the developed MP has the potential to greatly impact soils in the canyon backdrop and cliff top ROAs. Although areas in the wilderness would be managed in accordance with the 1964 Wilderness Act, increasing pressures of additional visitors to the park developments and access routes on the North Rim have the potential to impact fragile soils in the wilderness area.

In addition, new trails and access routes would have some impacts to soil within the semi-primitive MP. More soil would be susceptible to compaction and erosion along increased access routes of both rims. The way in ROA would provide for developed paths to allow access to the depths of the canyon; and, as a result, soil erosion along the trails may decrease because of increased trail standards and maintenance.

## **Mitigation—All Alternatives**

### ***Soils and Visitor Use***

A visitor experience and protection plan (VERP) would be developed by the park to monitor and protect resources from excessive use. The elements of this current plan provide the first step in a process of developing VERPs for both parks.

In addition, to mitigate soil impacts from visitor use prior to the implementation of a VERP, impacted areas may be temporarily closed to visitors and rehabilitated and planted with native grasses and shrubs. Mitigation measures would also include interpretive contacts with visitors to encourage them to use low-impact recreation and backcountry techniques.

Educational and interpretive programming teaching visitors the importance of staying

on designated trails would mitigate further impacts to the soil. Engaging the visitor in a variety of recreational and educational activities geared toward minimum impact could be useful in the mitigation of soil impacts.

### ***Soils and Development***

Specific mitigation measures for development projects would be defined during planning for each project and carried out prior to or during project development.

Mitigation of impacts may include modifications to soil and topography to reduce soil compaction around heavily used facilities. Flat and slightly sloping areas could erode and channeling of the soil could take place. In the short term, soil in construction areas would temporarily undergo rapid erosion. In the long term, when drainage structures are in place and fully operable and vegetation restored, the soil would be protected and preserved. Carefully designed and landscaped facility developments would assist in minimizing topsoil impacts. Topsoil replacement, when needed, should use material similar in composition (mineral and organic) to the original topsoil, and replanting should be done with native grasses and shrubs. Careful and continuous monitoring should be done to mitigate impacts.

## ***Vegetation***

### **Curecanti—Description of the Environment**

Availability of moisture, type of soil, aspect, impacts of human use—these are some of the factors that contribute to the mosaic of vegetative communities within the national recreation area. Generally, vegetation can be described as follows:

- In the vicinity of Blue Mesa Reservoir, the slopes and mesas are grasslands and sagebrush communities with some conifers on the sheltered northern slopes.
- Gentle lower slopes incised by side streams and the river itself support richly diverse riparian communities.
- Thickets of Gambel oak and serviceberry, intermingled with stands of mixed conifer and aspen, are more typical of the vegetation along the two lower reservoirs, Morrow Point and Crystal.
- Also found within the NRA are irrigated meadows, some landscaped areas, and previously disturbed areas that are being allowed to revegetate.

### **Black Canyon—Description of the Environment**

Much of the rim of the Black Canyon is characterized by the oak-serviceberry community. Intermingled in the vegetative mosaic are areas of grass-sagebrush, stands of pinyon-juniper, and isolated pockets of Douglas fir and some aspen. In the canyon bottom is the streamside riparian community, with box elder and Douglas fir in side canyons, and pinyon-juniper on alluvial slopes. Springs and seeps are few along the rim, but where they do occur vegetation typical of wet meadows can be found.

Vegetation on and below the canyon rim is characterized by adaptive plants surviving in steep and inhospitable topography. Enclaves of vegetation protected by extremely difficult access have been relatively untouched by human impact for centuries. These relict communities are important in that they protect a baseline of future scientific data and potential for comparative studies.

Dendrochronological study has dated some of the pinyon pine (*Pinus edulis*) as among some of the oldest of this species in the Southwest. Some of the tree ring dates near High Point indicated ages approaching 750

years. Protection of this resource within the canyon backdrop and canyon rim ROAs has been identified as a priority.

### **NPS Policies Pertinent to Assessing Impacts on Vegetation**

#### ***Insects and Diseases***

*National Park Service management policies recognize that forest insects and diseases are natural elements of the ecosystem. The general policy is not to interfere with the interactions of these elements. However, interaction and cooperation with neighboring agencies and landowners may be required along the NRA boundary.*

Forest stands and riparian communities may be especially susceptible to impacts from insect infestation, blights, rusts, and other diseases. Adjacent U.S. Forest Service lands are managed for timber production as well as other uses, and the agency conducts ongoing studies regarding insects and diseases and their impact on forest health. Forest stands within the NRA may be adjacent to Forest Service and private lands.

Both native and exotic plant species can be found in the area. Many of these exotics are of Eurasian origin, from environments similar to or more severe than our own. Thus, they generally do well and may even outcompete native plants, especially in areas of disturbance.

#### ***Grazing and Exotics***

*Commercial grazing or stock driveways will be allowed only in those parks where they are specifically allowed by law. Grazing will be managed and conducted in accordance with standards and procedures designed to ensure that it does not result in significant damage to park resources.*

Grazing intensity may modify the composition, quantity, and quality of the

vegetation community. Trespass livestock may provide impacts where none should occur. This is especially true of the North Rim, where allotments and the park boundary are mostly unfenced.

The presence of domestic grazing stock, past agricultural practices, and past and present soil disturbance from developments may encourage the introduction and spread of exotic plant species. County extension agents are also concerned about the spread of exotics, however, their control methods (e.g., initial use of chemical agents as the primary method of control) may conflict with NPS policy.

Some nonnative plants have become so well assimilated in the native plant communities that control or elimination is either impossible or impractical. However, control of identified *noxious* species is essential to restoration and maintenance of native plant communities. Cooperation with state and county agencies is essential for identifying these species and determining control actions that are in accord with NPS policy.

### ***Roadside Management***

*NPS management policies also allow for vista clearings and roadside mowing to enhance aesthetic quality and promote public use and enjoyment.*

Such activities could occur within the semi-primitive nonmotorized, motorized rural, and developed management prescriptions (trail maintenance is also recognized within the primitive MP). Road and trailside vegetation can become overgrown without ongoing maintenance. Pruning and removal is permitted for reasons of visitor safety (e.g., driver visibility), maintaining trail accessibility, reducing fuel hazard adjacent to structures, maintenance of trails and roadside surfaces, and so on.

## **Impacts of All Alternatives—General**

Impacts to vegetative cover are related to those described for soils occurring within and adjacent to areas of concentrated visitor use. This can occur as use overflows onto adjacent areas and visitors create their own trails, thereby trampling existing vegetation. This is called *trailing*.

Vegetation impacts associated with current allotments authorized by law would continue.

Increased visitation and potential new developments would increase impacts to vegetation. Potential impacts to plant communities include the following:

- Plants that invade disturbed areas may become more common. Exotic species may be introduced and become established. Soil compaction, treading, and forage browsing reduce vegetation and favored forage species and may encourage replacement by nonnative species or leave the soil bare.
- Increased erosion caused by visitor use traffic would lead to the exposure of plant root systems and later, death.
- Increased visitor traffic can impact significant plant resources—such as T&E species, pinyon pine at Black Canyon, and so on.
- Germination of some plant species, native to the park environment may be inhibited by soil compaction resulting from visitor foot traffic.
- The impacts of trampling would range from complete exclusion of vegetation to slight shifts in species composition.

## **Impacts of Alternative A**

### ***Curecanti and Black Canyon***

Levels of trailing indicated by past trends would continue.

Vegetation has been impacted in areas managed under grazing leases. Permitted grazing is occurring at pre-1984 levels, but



additional effort in management is needed to assess and refine grazing activity. Trespass livestock is impacting areas on the North Rim as a result of lack of fencing. This alternative would continue existing management, and improvements in grazing management and installation of fencing would occur depending upon availability of funding and staffing.

## **Impacts of Alternative B**

### ***Curecanti***

Potential increases in visitation and development would increase trampling of vegetation and trailing adjacent to development and along shoreline areas. This would occur primarily in and adjacent to the developed MP in the Blue Mesa ROA.

The potential for new exotics would be decreased due to increased monitoring and removal. There would be no change in roadside management of vegetation in the Blue Mesa ROA.

### ***Black Canyon***

Increases in visitor traffic and additional facilities could impact vegetation adjacent to development areas. Resource management activities would improve management of grazing operations, keeping impacts within levels permitted by law.

The potential for new exotics would be decreased because of increased monitoring and removal.

## **Impacts of Alternative C**

### ***Curecanti and Black Canyon***

Small decreases in available lands for development in both parks and an emphasis on providing a less-developed experience for visitors, has the potential to decrease trampling of vegetation from visitor use and trailing.

In the short term, removal of developments could have a direct and immediate impact to vegetation.

In the long term, impacts to vegetation would decrease. Research and interpretive efforts to manage visitor use would increase, grazing management would intensify, and more emphasis would be given to restoration of native plant communities. Relict plant communities would be studied in greater depth, perhaps in partnership with a university or other research entity.

The potential for new exotics would be decreased because of increased monitoring and removal. There would be no change in roadside management of vegetation in the Blue Mesa ROA.

## **Impacts of Alternative D**

### ***Curecanti***

An increase of about 13% in the developed MP and the potential addition of marinas to Blue Mesa ROA would increase vegetation trampling. Additional impacts from visitor use and trailing can be expected in the riverine ROA.

Increases in exotics in the Blue Mesa ROA can be expected as a consequence of increases in development. Manipulation of vegetation in the Blue Mesa area would increase. There may be an increase in disease and insects as a result of increased development.

### ***Black Canyon***

With the addition of the North Rim development and an 85% increase in the developed management prescription, trampling of vegetation and additional trailing would occur in the canyon rim and canyon backdrop ROAs. Because of this increased use, it is doubtful that sufficient resources could be used to fully mitigate

impacts, resulting in some degradation to the vegetative resource.

Increases in exotics can be expected on both canyon rims as a consequence of increases in development.

## **Mitigation—All Alternatives**

### ***Vegetation and Visitor Use***

A visitor experience and protection plan (VERP) would be developed by the park to monitor and protect resources from excessive use. The elements of this current plan provide the first step in a process of developing VERPs for both parks.

In addition, to mitigate vegetation impacts from visitor use prior to the implementation of a VERP, impacted areas may be temporarily closed to visitors and rehabilitated and planted with native grasses and shrubs. Mitigation measures would also include interpretive contacts with visitors to encourage them to use low-impact recreation and backcountry techniques.

Educational and interpretive programming that includes low-impact backcountry techniques would mitigate further impacts to the vegetation. Engaging the visitor in a variety of recreational and educational activities geared toward minimum impact could be useful in the mitigation of soil impacts.

### ***Vegetation, Grazing, and Exotics***

Increased interaction with state and county weed agents would be required, but because of the additional workload caused by mitigation of newly developed areas, progress would be slow. Areas subject to disturbance would be evaluated and replanted with native grasses as time and funding permitted. The workload for tree hazard identification and removal would increase as more areas would fall within

developed sites. Roadside and trailside vegetation would be maintained on an as-needed basis.

Studies would also be conducted pertaining to the most effective means for control of nonnative species. An ongoing program of noxious weed control would be implemented in close coordination with state and county weed agents and research facilities.

Concepts of holistic ecosystem management would be promoted in an effort to see state and county policies more closely aligned with that of the NPS. Areas subject to disturbance would be evaluated, and if needed would be aggressively replanted with native grasses and shrubs. Tree hazards would be identified and the hazard removed or mitigated in the remaining developed areas. Roadside and trailside vegetation would be maintained on an as needed basis.

Well-managed grazing practices could help reduce damages by limiting stock levels, season of use, and controlling use by way of allotments and fencing.

### ***Vegetation and Development***

In the case of visitor use, design and landscaping considerations can help control foot and vehicle traffic, and if need be, further restrictions or closures can be established by the superintendent.

The number of tree hazards may increase within developed areas and areas of concentrated visitor use. Tree hazards are trees and limbs containing structural defects (such as those damaged or weakened by insects, disease, etc.) located in developed use areas that have the potential of resulting in personal injury or property damage should they fall. Annual inspection of areas will identify tree hazards and specify corrective actions to be taken.

## Wildlife

### Curecanti and Black Canyon— Description of the Environment

A rich variety of wildlife can be found living within and near the national recreation area and national monument. Examples of wildlife commonly found include ungulates (mule deer, elk, and bighorn), black bear, coyote, mountain lion, bobcat, rabbit (cottontail and white-tailed jackrabbit), rodents (prairie dog, squirrel, beaver and porcupine), upland birds (blue and sage grouse), and a large variety of waterfowl, song birds, and predatory birds (bald eagle and peregrine falcon).

Species that may be specifically affected by land allocation described in this document are as follows:

- Elk, deer, and bighorn sheep—these animals are dependent upon the winter range here, as deep snows in the high country concentrate their numbers in the lower elevations. As a result, competition is keen and the animals can be easily stressed. Competition with domestic livestock as well as increasing development and winter use can adversely affect these wildlife populations.
- Beginning in the 1970s, CDOW began a programming of transplanting bighorn sheep (*Ovis canadensis*) in order to reestablish herds that had declined after the construction of the dams. Transplants have occurred at Dillon Mesa, Lake Fork, and the Gunnison Gorge, with the most recent release to the Dillon Mesa herd in late 1995.
- Black bear and mountain lion occur in the vicinity of the Black Canyon and within the national recreation area.
- Gunnison prairie dog in the vicinity of Blue Mesa Reservoir pose a concern because of the tendency of these communal animals to harbor disease vectors, especially *Yersinia pestis*, which is the organism responsible for bubonic plague.
- A sage grouse (*Centrocercus urophasianus* sp.) and associated habitat is located on the North Rim (Fruitland Mesa), in the Gunnison Basin,

and in the Blue Mesa ROA near Keezar Basin and on the north shore in the vicinity of Willow Creek and Stevens Creek.

### NPS Policies and Regulations Pertinent to Assessing Impacts on Wildlife

Hunting, including big game hunting, is permitted within Curecanti in accordance with state law. Hunting is prohibited within the national monument. The NPS cooperatively manages these animals with the Colorado Division of Wildlife (CDOW).

Management policies in general suggest that NPS monitor and manage habitats and ecosystems rather than individual species. Habitat modification and active intervention is generally not authorized, except in cases where the objective is to restore a listed species (e.g., peregrine falcon, bighorn sheep) or restore or rehabilitate degraded or damaged resources.

### Impacts of Alternative A

#### *Curecanti and Black Canyon*

The no-action alternative would continue existing management designed to protect, monitor, and manage wildlife habitat and ecosystems without modification or active intervention. There would be no effect on wildlife from this alternative.

### Impacts of Alternatives B and C

#### *Curecanti and Black Canyon*

No areas prescribed under the developed MP surrounding Blue Mesa would interfere with known migration patterns for elk, mule deer, black bear, bighorn, or other migratory species.



## Impacts of Alternative D

### *Curecanti*

With an increase of about 13% in land that could be developed in the future, primarily around Blue Mesa, this alternative has the greatest potential to interfere with existing migration patterns of wildlife. Large increases in visitation resulting from the potential increases in developed facilities could have cumulative impacts on sensitive wildlife populations. Although facility design and use restrictions may serve to limit these impacts, wildlife migration patterns would be changed and some habitat would be lost.

### *Black Canyon*

With an increase of about 85% in land that could be developed in the future, primarily on the North Rim, this alternative has the greatest potential to stress existing wildlife in that area. Future increases in visitation because of the emphasis placed on developed facilities may disrupt sensitive wildlife populations. Although facility design and use restrictions may serve to limit these impacts, some reductions in habitat and species could be expected.

### **Mitigation - All Alternatives**

Although black bear and mountain lion are hunted with some regularity in the NRA, the park staff has only limited knowledge of population levels and dynamics of these animals. Additional data needs to be gathered in cooperation with the CDOW to ascertain what levels of hunting are warranted, manageable, and actually sustainable.

New visitor use areas would be located away from prairie dog towns as much as possible. Where prairie dogs are already active near

visitor use areas, close monitoring would be provided to ensure visitor safety.

The Gunnison sage grouse is being considered for classification as a separate species. If this happens, because of its limited range and population, it is possible the bird may become a listed species sometime in the future. The BLM, CDOW, NPS, and others have already begun actions to evaluate the status of this upland bird and to determine what actions might be available to protect the bird and its habitat and, if possible, prevent T&E listing of the species.

Resource management staff will continue working in cooperation with the Colorado Division of Wildlife in managing habitat and monitoring wildlife populations and, where necessary, taking steps for restoration of habitat and listed species.

## ***Fisheries***

### **Curecanti—Description of the Environment**

Construction of the dams of the Aspinall Unit has admittedly and significantly altered the fishery of the Gunnison River. The dams have inundated riparian habitat, altered flow regimes and temperature regimes, and altered spawning habitat. The reservoirs are classified as a cold-water fishery. The dominant game fish species include Kokanee salmon, rainbow trout, brown trout, lake trout, and brook trout. The fishery is managed by the Colorado Division of Wildlife primarily through stocking efforts. The free-flowing portion of the Gunnison River upstream from the national recreation area is nationally known for its trout fishing. The two lower reservoirs also support a smaller but active fishery, however, they receive less fishing impact because of the more difficult access.

## **Black Canyon—Description of the Environment**

The Gunnison River through Black Canyon is still wild, but the upstream water impoundments have dramatically altered its temperature and flow regimes. As a result, the fish composition and populations have been dramatically altered in comparison to pre-dam years. The CDOW has designated the stretch of river from the monument's eastern boundary to the confluence with the North Fork as Gold Medal Waters, because of the superb trout fishery found there. Beginning in 1995, the CDOW revised its regulations making all rainbow trout "catch and release." Brown trout may still be retained per the specific limits and restrictions of the Gold Medal Waters.

## **Impacts of Alternative A**

### ***Curecanti and Black Canyon***

There would be no effect on fisheries from the continuation of existing management.

## **Impacts of Alternatives B and D**

### ***Curecanti***

Increased demands would be placed on the fishery from increased fishing levels in Blue Mesa because of allowance for additional support facilities and an expected increase in fishing.

### ***Black Canyon***

Wilderness visitor protection patrols would be expected to rise because of increased levels of visitation. The fishery could benefit because compliance to fishing laws would increase, thus reducing the impacts from illegal fishing activities.

## **Impacts of Alternative C**

### ***Curecanti and Black Canyon***

Fishing levels would most likely remain the same. Additional research could be conducted as a result of partnering with educational institutions. There would likely be information gained because of emphasis placed on research of natural systems. A fisheries management plan at Curecanti could be produced in a more timely fashion because of partnerships and assistance from other research entities.

## **Mitigation—All Alternatives**

The National Park Service would continue to cooperate with the CDOW in managing the fisheries within the parks for long-term stability. The resource management staff is currently working with the CDOW to monitor the fishery, including conducting creel surveys. Continuation of this work is needed to fully evaluate stocking efforts and the potential short- and long-term effects of the impact of whirling disease on the rainbow trout population. Creel surveys have not been conducted in the national monument, however, the CDOW has done sampling in the downstream reaches of the Gunnison Gorge.

Through interagency cooperation (USFS, BLM, CDOW, and NPS) native cutthroat trout were reintroduced into North Beaver Creek on Forest Service land.

A fisheries management plan, a need identified in the RMP, would be completed to fully evaluate the fishery, including evaluation of species composition, fluctuation of reservoir levels, stocking requirements and success, reservoir nutrient requirements, and continued study of whirling disease and its long-term impacts. This would be required prior to approval of

major new developments, ensuring that there would be no adverse impact on fisheries from increased use.

### ***Threatened and Endangered Species***

#### **Curecanti and Black Canyon— Description of the Environment**

According to the U.S. Fish and Wildlife Service in memoranda dated 1/19/95 and 3/20/96, the following listed species may be present within the parks: peregrine falcon (*Falco Peregrinus*); bald eagle (*Haliaeetus Leucocephalus*); southwestern willow flycatcher (*Empidonax Traili Extimus*); humpback chub (*Gila Cypha*); bonytail (*Gila Elegans*); Colorado squawfish (*Ptychocheilus Lucius*); razorback sucker (*Xyrauchen Tesanus*); and the clay-loving wild buckwheat (*Eriogonum Pelinophilum*).

Also listed were candidate species that may be present in both parks, including the Black Canyon gilia (*Pentstemonoides*), which prefers steep, rocky ledges; North American wolverine (*Gulo Gulo Luscns*); northern goshawk (*Accipiter Gentilis*); loggerhead shrike (*Lanius Ludovicianus*); white-faced ibis (*Plaegadis Chihi*); flannelmouth Sucker (*Catostomus Latipinnis*); roundtail chub (*Gila Robusta*); Colorado River cutthroat trout (*Oncorhynchus Clarki Plenriticus*); Colorado desert parsley (*Lomatium Concinnum*); and adobe beardtongue (*Penstemon Retrorsus*). In addition, the Gilia (*Gilia penstemonoides*) and milk vetch (*Astragalus microcymbus*) may occur in Curecanti.

According to park biologists, the endangered peregrine falcon and bald eagle reside within and near the canyon walls. The endangered southwestern willow flycatcher is migratory and may occur within the Black Canyon wilderness.

Park biologists indicate that no humpback chub, bonytail, Colorado squawfish, razorback sucker, or clay-loving wild buckwheat are known to exist within the planning area. The U.S. Fish and Wildlife Service has found no evidence to indicate that any of these four fish are present upstream of the North Fork.

#### **Impacts of All Alternatives**

##### ***Curecanti and Black Canyon***

Nesting activity for the peregrine falcon and bald eagle is being monitored. Future conflicts could arise with either species. If use did interfere with either species, areas in conflict with visitors would be closed to avoid affecting endangered species.

Based on current indications and actions outlined in all alternatives and the proposal, *the park has determined that these alternatives would have no effect on the endangered peregrine, the bald eagle, the southwestern willow flycatcher, the humpback chub, the bonytail, the Colorado squawfish, the razorback sucker, or the clay-loving wild buckwheat.* The need for the establishment of a monitoring system (as part of the visitor experience and resource protection plan) is identified in the proposal and alternatives. The National Park Service will seek concurrence with the U.S. Fish and Wildlife Service on their finding of no effect.

##### ***Air Quality and Natural Quiet***

#### **Curecanti—Description of the Environment**

Curecanti is classified as a Class II Air Quality area. No air quality data has been collected, but air quality within the Gunnison Basin has traditionally been high. Low population levels and lack of large industries have meant high standards of air quality and good visibility on a year-round basis. During



the spring, burning of agricultural lands can cause temporary worsening of atmospheric and visibility conditions.

Noise levels can affect natural resources as well as archeological sites. They can also interfere with visitor experience. Tour boat noise levels can exceed 70 decibels, far greater than the acceptable 20–35 decibel level for visitors in small groups. Of the three reservoirs, Blue Mesa has the most noise associated with cars and motorized watercraft, but the greatest capacity for noise dissipation. Boats with motors are permitted on each reservoir, but because of access, there are far fewer boats on Morrow and Crystal Reservoirs than on Blue Mesa. The impact from increases in noise, however, within the canyon is far greater from motorized watercraft than on the flatwater of Blue Mesa. In addition, traffic noise from the highway in the Blue Mesa ROA can be heard in most adjacent recreational sites.

### **Black Canyon—Description of the Environment**

The monument's wilderness area is designated as Class I air quality. No baseline data, except for photographic monitoring, has been collected. However, air quality, interpreted on the basis of visibility, has traditionally been quite high.

Expectations of visitors for natural quiet are very high in the wilderness area of the park. In developed areas along the rim, visitors are exposed to higher amounts of noise from normal road traffic and other visitors. The roar of the Gunnison River can be heard in the distance, and for those who hike to the river, the rush of the water becomes the prominent sound and contributes to the park experience.

Overflights from private and military aircraft disrupt natural quiet. Aircraft noise can be

heard as far away as 12 miles. When overflights are infrequent, such noise provides a temporary distraction to visitors. However, frequent overflights can disrupt the enjoyment of the area for many visitors. Another possible impact is increased stress levels of wildlife. Commercial air tours beginning in 1995 provided intrusions to the natural quiet because of their frequency and the elevation at which they were flown.

### **Impacts of Alternative A**

#### ***Curecanti***

There would be no effect on existing noise and air quality from this alternative. Visitors would still experience noise distraction in the developed areas around Blue Mesa and from boat operations on the three reservoirs. Air quality and noise levels from these sources could be expected to remain the same.

#### ***Black Canyon***

There would be no effect on air quality from this alternative. Visitors would still experience some noise distraction on the South Rim from road traffic. Noise disruptions from overflights could increase because of additional commercial, private, or military operations over the park.

### **Impacts of Alternative B**

#### ***Curecanti***

There would be only minor changes in noise levels and no impacts on air quality from this alternative. Visitors would still experience noise distraction in the developed areas around Blue Mesa and from boat operations on the three reservoirs. Noise levels could increase if additional facilities are constructed.

#### ***Black Canyon***

There would be no effect on air quality from this alternative. Visitors would still

experience some distraction from increases in noise levels on the South Rim from road traffic.

## **Impacts of Alternative C**

### ***Curecanti***

Natural quiet would be improved on Morrow Point Reservoir with the removal of commercial boat tours. Some noise from motors from both visitor and NPS watercraft would still be heard. Noise levels would be reduced along with air pollution from vehicle emissions around Blue Mesa and in the lake arms.

### ***Black Canyon***

There would be a potential information gain from research based on the alternative's emphasis.

Visitors would still experience some traffic noise on the South Rim, and increases of traffic on the North Rim are also possible. Visitors may gain an increasing awareness of the value of solitude in wilderness because of this alternative's educational emphasis.

## **Impacts of Alternative D**

### ***Curecanti***

Noise levels would increase over the long term as a result of an increased emphasis on development and the potential addition of a marina on Blue Mesa. Increases in visitation, traffic, and motorized watercraft would increase air pollution from emissions. Natural quiet would be decreased on Morrow Reservoir with additional tour offerings. Extensive development possible under this alternative would also have short-term effects on air quality because of dust and vehicle exhaust from construction projects.

### ***Black Canyon***

There would be a small increase in air pollution and noise levels near developed areas on both rims of Black Canyon proportional to increases that could be expected in visitor use. A decrease in air quality may result from increased auto emissions visible on each rim. Noise levels on the North Rim would be increased. Noise disruptions from overflights could increase because of additional commercial, private, or military operations over the park. Solitude in the wilderness could be adversely impacted from all of these developments.

## **Mitigation—All Alternatives**

A visitor experience and protection plan (VERP) would be developed by the park to monitor and protect resources from excessive use. The plan would develop noise standards designed to keep noise levels within an acceptable range based on the desired visitor experience. It would further be refined to establish visitor carrying capacity for all areas.

The development and implementation of noise management would assist in reducing noise levels in the Black Canyon inner canyon and on the rim, by developing strategies and actions to mitigate impacts from overflights.

## ***Wetlands and Floodplains***

### **Curecanti and Black Canyon— Description of the Environment**

Floodplain and wetland concerns include:

- The Gunnison River prior to entering the Gunnison River Canyon—this mature, meandering stream occasionally changes course through channel avulsions. This channeling usually occurs during high-flow years. The stream is bordered by riparian and adjacent wet

meadow community sub-irrigated by surrounding private property.

- The tributaries to the Gunnison River and above the lake arms—these streams may experience flooding during periods of spring runoff. There are also areas of wetland associated with these tributaries.
- The reservoirs themselves—fluctuations occur seasonally at Blue Mesa and daily at Morrow Point and Crystal.
- Upland areas containing seeps and springs—wet meadow communities may be associated with these areas, although the number of such sites are few.
- The Gunnison River below the dams in Curecanti and Black Canyon—the river is subject to flooding during high runoff years and would be subject to catastrophic flooding in the event of dam failure.

The wetlands within Curecanti and Black Canyon have not all been mapped. Wetland resources are few compared to other community types and tend to be located along stream courses (the river and its tributaries). The Cooper Ranch/Neversink area is a unique and valuable portion of the NRA because of its riparian and wetland attributes. It is recognized that many of the tributaries that feed the reservoirs also contain riparian communities that may support wet meadow and narrowleaf cottonwood habitat. Although the rims of the Black Canyon are primarily dry, a few isolated springs and seeps may be found there.

Ice jamming on the eastern edge of Blue Mesa Reservoir and in the Gunnison River Canyon has occurred some winters, causing unnatural flooding in the riparian areas and on some private property upstream.

Tributaries to the Gunnison River in Curecanti may reach flood stage during the period of peak snowmelt in late spring and/or early summer. The BOR, with input from the National Weather Service, uses

forecasts and modeling to configure strategies for handling water inflows. At Blue Mesa Reservoir, the target is to fill the reservoir in July, with low pool reached in late December. Morrow Point Reservoir fluctuates on a daily basis as water is released in varying amounts for power production. Crystal Reservoir also varies, but not to the same extent as Morrow Point. Daily operational releases from Crystal are kept constant—however, seasonal changes do occur in order to meet downstream needs and to meet reservoir elevation targets for Blue Mesa. Inflows during spring runoff exceeding reservoir capacities are passed through dams.

In the event of failure of one or more of the dams, the areas downstream would be subject to catastrophic flooding.

## **Impacts of All Alternatives**

### ***Curecanti and Black Canyon***

No wetlands would be affected. There are no developed overnight areas within the 100-year or 500-year floodplains. Water resource values of the floodplain related to the natural moderation of floodwaters, maintenance of water quality, and groundwater recharge would not be affected. There are no critical actions (fuel storage facilities, sewage treatment plants larger than 40,000 gallons per day, emergency clinic or hospitals, or areas that contain irreplaceable documents or objects) associated with any of the alternatives.

The Riverway area and facilities would be transferred to the City of Gunnison in each alternative except Alternative D. That alternative would permit paving the access road and parking area. There would be no affect to wetlands or floodplains from this action.



Coordination with BOR and other agencies would continue under each alternative, defining strategies to meet target elevations while considering interagency objectives. Meeting the minimum pool target elevation of 7,490 feet on December 31 is critical for continued mitigation of flooding caused by ice jamming.

Efforts pertaining to flooding below the dams have focused on 1) interagency involvement in setting flow regimes to meet the needs of a variety of agencies and entities while considering and limiting downstream flooding and 2) planning for catastrophic event (dam failure).

- One BOR objective in managing water releases from the Aspinall Unit is to reduce or limit property damage from flooding (particularly in the stretch through Delta and downstream). The BOR meets quarterly with other agencies and entities to review snowpack and spring runoff forecasts, water commitments and delivery, special needs (for example, endangered fishes recovery program), and timing for releases. Timing is critical because if high releases through the Aspinall dams were to coincide with the peaks of the North Fork and other tributaries, flooding in Delta and downstream could occur. The quarterly meetings referred to above have provided an avenue to assess and (at least partially) mitigate downstream flooding damage.
- The BOR's *Aspinall Unit Dams Emergency Action Plan Brief with Inundation Maps* assesses possible scenarios were one or more of the dams to fail. The main emphasis of this document is hazard assessment and notification procedures for the purpose of preventing loss of life from where the Gunnison River emerges from the Black Canyon downstream through Grand Junction. This document does not specifically address hazard to inner-canyon users, however, dam failure would pose an immediate threat to these persons, as flood waters would reach most locations within the national recreation area and the national monument in less than 1 hour.

There are a few facilities within the canyon. These include BOR facilities (the dams and

associated works and facilities of the Uncompahgre Water Users Association), boat docks, and campgrounds, such as Hermit's Rest and East Portal. Campsites within the wilderness are not designated. All of these locations provide generally adequate routes for people to escape to higher ground if warned in time, according to park staff. However, in many inner-canyon locations it is questionable that there would be adequate time to warn visitors in the case of sudden dam failure. The actions identified in BOR's *Aspinall Unit Dams Emergency Action Plan Brief* and the park's emergency operations plan would reduce the danger to visitors. As stated in the BOR plan, "the maps reflect events of an extremely remote nature."

### **Mitigation—All Alternatives**

Site planning, done at the time of the proposed action, would further document any potential effects on floodplains and wetlands. Any identified conflicts pertaining to wetlands or floodplains would be mitigated, or the project would not be retained. Efforts will continue under each alternative to participate with the BOR in setting flow objectives for dam operations.

### **Water Quality**

#### **Curecanti —Description of the Environment**

There are two specific water-related areas directly affected by land allocation decisions reflected in this document—degradation of water quality and the effects of fluctuating water levels on recreation and fishery resources.

Water quality at the three reservoirs is considered good and is monitored regularly on Blue Mesa. The Colorado Water Quality Control Commission has classified the Gunnison River and its tributaries as Class 2

—Recreation (secondary contact—boating) and Class 1—Aquatic Life (cold water trout). Blue Mesa, Morrow Point, and Crystal Reservoirs have all been classified as Class 1—Recreation (primary contact—swimming/waterskiing) and Class 1—Aquatic Life. Water near dock areas of the marina, however, is often times contaminated with fuel spills from outboard motors. Surface films from boats sometimes can be seen on the reservoir. Areas along the shore below the high-water mark are open to vehicles and may present additional sources of water pollution.

Maintenance of the natural high-quality water in the reservoirs and tributaries in order to protect fish and wildlife habitat is also important in providing superlative opportunities for a variety of recreational experiences.

### **Black Canyon—Description of the Environment**

There are three specific water-related areas directly affected by land allocation decisions reflected in this document—degradation of water quality, lack of potable water, and the effects of fluctuating water levels on recreation and fishery resources.

Gunnison River water quality is high, supporting an excellent trout fishery. With the exception of the Red Rock Canyon tributary, all water in the system passes through Crystal Dam.

Maintenance of the natural high-quality water and its flow through Black Canyon in order to protect fish and wildlife habitat is important in maintaining the high-quality wilderness recreational experiences offered at the monument.

Natural sources of water that could be treated and used for public drinking are not

available in the monument, and potable water must be hauled in from nearby communities for public use. Visitors hiking to the river need to be aware of the possibility of exposure to giardia from drinking untreated river water. Visitors should carry their own water or use approved treatment techniques prior to drinking river water.

### **Impacts of All Alternatives**

#### ***Curecanti and Black Canyon***

Both parks would work with the Bureau of Reclamation to ensure high-quality standards for the Upper Gunnison Basin are continued in order to meet recreation and wildlife protection needs. Water quality monitoring and data collection that were started 30 years ago would continue to look at effects of activities around Blue Mesa Reservoir.

Quantification of the federal reserved water right, and/or completion of a water delivery contract with the BOR is essential to providing minimum flow requirements needed to protect water-related resources within Black Canyon. High spring runoff will be necessary to clean out and renew the system, and without such flows, degradation of water quality and possible impacts of the fishery and other aquatic life within Black Canyon could occur. Efforts to quantify the water right and/or develop a water delivery contract continue under each alternative.

### **Impacts of Alternatives A and B**

#### ***Curecanti and Black Canyon***

There would be no effects on water quality from these alternatives.

### **Impacts of Alternative C**

#### ***Curecanti and Black Canyon***

Increased emphasis on reductions in development may reduce water contaminants

from developments, vehicles, and watercraft. Sensitivity to water resources from increased educational emphasis would increase visitor awareness.

## **Impacts of Alternative D**

### ***Curecanti***

Provision for increased development around the lakeshore would create the potential for increased water contaminants from development, vehicles, and watercraft.

Additional facilities, including marinas, and an increase in visitation is likely to mean additional development on the private lands surrounding the area and more reservoir users and watercraft.

Potential impacts of inadequate or improper septic and leach field installations, and seepage into the reservoir from development on private land adjacent to the park is possible. Inadvertent pollutants as well as discarded waste from watercraft usage could contribute to degrading reservoir water quality. Additional impacts that could occur include population growth upstream that could impact water quality downstream, from roads (i.e., new construction and runoff), and increased traffic.

### ***Black Canyon***

An 85% increase in the developed MP and facilities on the North Rim would stress potable water sources. Additional visitation and vehicles may also increase groundwater pollution.

## **Mitigation—All Alternatives**

Both parks in cooperation with the Bureau of Reclamation would continue water quality monitoring and data collection that was begun 30 years ago. Efforts will be made to ensure that the high-quality standards previously established for Upper Gunnison

Basin water quality are continued in order to meet recreation and wildlife protection needs. Monitoring sites include six sites on Blue Mesa Reservoir, and nine stream sites flowing into all three reservoirs. Although water quality monitoring of the river water within Black Canyon has not been conducted, work in Curecanti provides some assurance of the high water quality for the Gunnison River in this stretch.

## ***Paleontological Resources***

### **Curecanti—Description of the Environment**

A 1994 reconnaissance survey identified significant paleontological resources in Curecanti National Recreation Area. Many require further excavation and identification to prevent further loss of scientific information to the park unit and the scientific community.

Large-scale paleontological resources, not surveyed, are being exposed by wave action and ice scouring below high waterline. Some are being damaged by this scouring and by human surface disturbance.

### **Black Canyon—Description of the Environment**

The extent of these resources is largely unknown. A partial resource inventory (survey) has been conducted. The extent and relative importance of these resources need further investigation before decisions are made pertaining to their management.

## **Impacts of All Alternatives**

### ***Curecanti and Black Canyon***

Natural weathering (wave action, rain, and wind) would continue to cause deterioration of exposed paleontological resources. Construction activities in the proposal, such



as remodeling, expansion, or construction of new facilities, would expose fossils to weathering and theft.

### **Impacts of Alternatives A and B**

#### ***Curecanti and Black Canyon***

There would be no effect on known resources.

### **Impacts of Alternative C**

#### ***Curecanti and Black Canyon***

The increased educational emphasis of this alternative would make visitors more aware of and sensitive to the importance of paleontological resources. Additional research and education efforts would increase the potential to complete the survey of paleontological resources and implement protection measures.

### **Impacts of Alternative D**

#### ***Curecanti and Black Canyon***

Additional development within this alternative would increase potential impacts by providing more opportunities for conflicts with paleontological resources (during construction and from possible disturbance and theft from fossil collectors).

### **Mitigation—All Alternatives**

*Prior to any land-modifying activities, those areas not previously surveyed would be examined for paleontological resources by a qualified professional paleontologist.* Additional investigations would be performed in those areas where paleontological resources would be affected by the plan.

A visitor experience and resource protection plan (VERP) would be completed, addressing protection standards for paleontological resources. Impacts from

management actions and visitor use would be mitigated by increased field staff, improved interpretive media, and future partnerships with other educational institutions. Patrols would discourage illegal digging and collecting. Improved interpretation could also reduce the potential for impacts by educating visitors about the value of fossil resources.

An assessment of these resources, a scope of problem statement, and a mitigation plan urgently need to be developed.

## **CULTURAL RESOURCES**

### ***Ancestral Resources***

#### **Curecanti—Description of the Environment**

The Curecanti Archeological District, consisting of a complex of over 200 recorded archeological sites in the Blue Mesa District and encompassing 6,750.25 acres, was listed on the National Register of Historic Places on August 15, 1984. Prehistoric sites dating as far back as 10,000 years represent a significant change in the understanding of how these early people used Colorado's high mountain valleys. A considerable collection of artifacts (projectile points, manos, metates, knives, scrapers, bone, charcoal, and so on) is in storage at the Midwest Archeological Center in Lincoln, Nebraska.

The importance of these sites cannot be over-emphasized because of 1) the antiquity of the sites—8000 B.C. to A.D. 1500 ; 2) the presence of habitation structures suggesting a somewhat greater degree of permanence—4500 B.C.; and 3) the variety of site types and implied functions represented.

## **Black Canyon—Description of the Environment**

Thirty-nine archeological sites generally associated with the Ute Tribe and classified as temporary camps have been identified in the monument. Most are remote from visitor use areas and their locations are not generally public knowledge.

## **Impacts of All Alternatives**

### ***Curecanti and Black Canyon***

There would be no impacts on known cultural resources from land allocation outlined in this document. The construction of structures and trails could inadvertently destroy unknown archeological resources if unearthed during construction. The likelihood of this happening will be minimized through mitigation measures described below.

In remote areas of both parks, the absence of direct backcountry resource protection by monument personnel would have an effect on cultural remains. There is some potential for digging, collecting, and selling of these resources. However, the continuance of a policy of allowing a site to remain 'as is' would provide the best of protection from impairment.

Permitted and trespass grazing activities would have indirect impacts on cultural resources. Livestock create surface disturbances to vegetation, soil, and cultural resources. Soil erosion would lead to cultural resources being washed away by rain or exposed to trampling, breakage, scattering, and natural deterioration.

All lands not surveyed would be examined by qualified professional archeologists for cultural remains prior to any land-modifying activity.

## **Mitigation—All Alternatives**

Prior to any land-modifying activity, a professionally qualified archeologist would inspect the present ground surface and immediate vicinity for the presence of cultural resources. All areas not surveyed would be inspected for cultural remains by professionally qualified archeologists. Should newly discovered or previously unrecorded ancestral resources be located, additional investigations would be done prior to any earth-disturbing activities.

Prior to the development of future site plans, cultural resources would be investigated, recorded, mapped, and run through sampling, collecting, and testing in areas called for in a proposal.

The protection of surface artifacts being accomplished through ranger patrols and interpretive programs would continue. A search for resource protection strategies with an advisory group of public and agency participants would be done. In addition, a friends' group would be explored to protect the resource.

Future cultural resource management would emphasize preservation and stabilization, include research and study, and develop a new interpretive program. Ranger operations would also increase to enhance the protection of resources while serving the public. Mitigation and monitoring efforts would extend to include consultation with federally recognized Ute Tribes to identify and locate visitor conflicts and make future management recommendations.

## ***Historic Resources***

### **Curecanti—Description of the Environment**

Historic resources within the park illustrate three great human achievements—building narrow gauge railroads, dam building/engineering, and homesteading/saw milling.

The Cimarron area and Lake Fork of the Gunnison at Gateview are focal points for illustrating the role of the narrow gauge railroad in the development of western Colorado. The Gateview historic sites typify 1880 railroad construction camps and relate the influence of immigrants on the building of the railroad. The engineering feat of spanning of the Black Canyon of the Gunnison is documented with the preservation of the Cimarron River crossing trestle. This circa-1892 structure was placed on the National Register of Historic Places on June 18, 1976. In order to maintain the integrity of the trestle, a historic resource maintenance guide was produced and approved in 1989. On a larger scale, currently displayed at Cimarron are eight pieces of Denver and Rio Grande rolling stock (engine, tender, boxcar, caboose, sheep car, cattle car, outfit car, and crane car), which are not eligible for the National Register. This display shows the type of equipment used and its economic importance to the locale. The display at Cimarron depicts the rise and fall of the narrow gauge as a mountain transportation system.

The Gunnison Diversion Tunnel and Dam at the East Portal area exemplify the irrigation boom resulting from the Newland's Reclamation Act of 1902. Constructed between 1904 and 1912, this project provided irrigation waters for the thirsty lands of the Uncompahgre Valley. Considered a major engineering undertaking, the tunnel was designated a National Historic

Civil Engineering Landmark by the American Society of Civil Engineers in 1972 and was listed on the National Register of Historic Places in July 1979. The facility has been in operation ever since its construction. This U.S. Bureau of Reclamation property is managed by the Uncompahgre Valley Water Users' Association under a contract agreement dated December 13, 1948.

The West Elk Creek Cabins area, site of an early-to-middle twentieth century homestead and sawmill, was evaluated for possible inclusion on the National Register. The evaluation indicated that the structures were not of historical significance. Actions have been taken to extend the life of the structures and to protect and interpret the site, however, the structures will be allowed to naturally deteriorate.

### **Black Canyon—Description of the Environment**

Black Canyon, named a national monument in the heart of the Depression in 1933, depended on the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC) for trail and road construction through the 1930s.

The North Rim road (and associated rock face culverts and portions of rock wall) and the North Rim CCC bunkhouse have been determined to be historically significant. Three buildings near the bunkhouse (two Quonset huts and a generator shed) are potentially eligible for inclusion on the National Register. On the South Rim the Dragon Point overlook is eligible to the National Register and Pulpit Rock Overlook is potentially eligible. On both rims the historic significance is related to CCC-era development and history and early monument history.



## Impacts of All Alternatives

### *Curecanti and Black Canyon*

An impact (or effect) could be anything that may alter the characteristics for which the property was determined eligible for inclusion on the National Register of Historic Places. These characteristics could include, for example, setting, location, workmanship, etc. One type of impact could be treatment of the structure. Treatments on historic resources are associated with their *restoration, stabilization, natural deterioration, demolition, adaptive use, and reconstruction*. *Restoration* is a major intervention and is the process of recovering the general historic form and details of an object or structure through the removal of incompatible accretions and the replacement of missing elements, as appropriate.

*Stabilization* reestablishes structural stability in such a manner that it detracts as little as possible from a structure's appearance and significance. *Natural deterioration* involves the gradual disintegration of the resource through lack of maintenance, exposure to climatic conditions, and so on. The policy of neglect would result in the eventual loss of the significant resource, affecting the historic setting and those aspects that qualified those features for National Register status.

*Demolition* of a historic structure, or destruction of the distinguishing qualities or character of a structure and its environment, constitutes an adverse effect that must be mitigated by a thorough documentation of the structure before the adverse action.

*Adaptive use* usually calls for the preservation or restoration of a building facade and the conversion of the interior to a modern, functional space. Original fabric is retained wherever possible. Adaptive use could result in changes in quality or understanding of those aspects that qualified the resources for entry on the National

Register. The Service does not endorse, support, or encourage *reconstruction* of historic structures, but will allow them, providing they meet certain criteria outlined in *NPS-28*.

The adaptive use, restoration, and maintenance of the buildings and their setting would retard normal deterioration and inhibit vandalism by providing staff to protect and preserve the resources. Continued deterioration would result from non-occupancy and the associated problems, such as vandalism, roof leaks, and lack of continual maintenance. Moving a historic structure has the adverse effect of destroying its site integrity and also the integrity of any groupings of buildings or landscape it helps to compose. This effect would be mitigated by one or more of the following means: documenting the original site, maintaining the original orientation of the building, or relocating the building to a site with similar terrain, vegetation, and neighboring buildings.

## Impacts of Alternative A

### *Curecanti*

There would be no effect on historic resources. The railroad engine and trestle would remain in their present location.

### *Black Canyon*

There would be no adverse effect on historic resources. There would be no restoration, use conversion, or removal of historic structures.

The old bunkhouse is in very poor condition. If it were stabilized according to the Secretary's Standards (see mitigation) there would be no adverse effect.

## Impacts of Alternative B

### *Curecanti*

There would be no effect on historic resources. The railroad engine and trestle would remain in their present location.

### *Black Canyon*

There would be no adverse effect on historic resources. The alternative calls for removal or rehabilitation of the ineligible National Park Service complex near Kneeling Camel.

## Impacts of Alternative C

### *Curecanti*

As part of a shift to less-developed experiences in recreation, the narrow gauge train and train exhibit complex in Cimarron would be removed, but the historic trestle would be retained.

There would be no adverse effect on historic resources of the area, but removal of the exhibit could diminish the visitor's education of railroad development in the West.

### *Black Canyon*

There would be no adverse effect on historic resources of the area. The alternative calls for the Kneeling Camel complex to be adaptively used as a research facility

## Impacts of Alternative D

### *Curecanti*

There would be no effect on historic resources. The railroad engine and trestle would remain in their present location.

### *Black Canyon*

There would be no adverse effect on historic resources of the area. The alternative calls for the North Rim Quonset hut storage to be adaptively used for educational purposes.

## Mitigation—All Alternatives

Any road improvements that may affect the North Rim road will be engineered and designed so that no significant impacts would occur to the historic portions of the road (from the 'Y' east).

*When any project affects historic buildings and structures that have been determined eligible for listing on the National Register of Historic Places, the work must meet the Secretary of the Interior's Standards for Rehabilitation and any other constraints mandated by NPS-28, Cultural Resource Management Guideline. This includes stabilization projects as well as new construction in or adjacent to a historic district. Before such a project can start, the plans and drawings must be reviewed and approved by a historical architect and the park must go through Section 106 review. Removal of historic buildings or structures will have an adverse effect on the qualities that qualify them for listing on the National Register of Historic Places. This impact may be mitigated by recording the buildings or structures to the standards of the Historic American Buildings Survey or the Historic American Engineering Record.*

## Collections

### Curecanti—Description of the Environment

Collections at Curecanti represent artifacts from the historic period of narrow-gauge railroad development, homesteading and settlement, and ranching as well as archeological materials gathered from survey and excavation work within the Curecanti Archeological District. In 1993, this material was relocated within an environmentally stable and secured Bally Building located within a garage at Cimarron. Some of the

natural science collection is in storage at the Elk Creek Visitor Center.

### **Black Canyon—Description of the Environment**

Most archeological items for Black Canyon are stored at the Midwest Archeological Center in Lincoln, Nebraska. Photos and some archeological objects are also housed at the Western Archeological and Conservation Center in Tucson, Arizona.

The remaining Black Canyon collection consists of natural science specimens and archeological objects. Seasonal museum staff catalogued and curated these objects in 1988–1989. A secured room, but without environmental controls, houses the collection within the South Rim ranger office.

### **Impacts of Alternative A**

#### ***Curecanti and Black Canyon***

The collection at Black Canyon would continue to be stored in a location that is below NPS museum collections standards. Objects are catalogued and receive conservation treatment as staff and funding permits.

### **Impacts of Alternatives B and C**

#### ***Curecanti and Black Canyon***

Better storage facilities would improve resource protect at a moderate cost. Museum collections would be relocated to an environmentally stable area sufficient in size to house both the Black Canyon and Curecanti collections.

### **Impacts of Alternative D**

#### ***Curecanti and Black Canyon***

This alternative would best protect resources, but at significant cost. Space would be designed into a future development

to house the museum collection. The storage area would be environmentally stable, secure, and provide sufficient space to house the entire collections of Black Canyon and Curecanti.

### ***Ethnographic Resources***

#### **Curecanti and Black Canyon—Description of the Environment**

Ethnographic resources are defined as park resources that have traditional subsistence, sacred ceremonial or religious, residential, or other cultural meaning for members of contemporary park-associated ethnic groups, including American Indians.

The Ute Tribes continued to use Black Canyon for cultural purposes in spite of their forced removal to a reservation by the government. As a result, possible ceremonial sites and other sacred areas may still exist within the monument. According to the National Park Service policy, “The fundamental relationships that often exist between park resources and the integrity of contemporary native American and other cultures necessitate that the National Park Service consult with affected communities before reaching decisions about the treatment of traditionally associated resources.”

A varied history of the area indicates a potential for ethnographic resources in large areas of the parks because of prior occupation by the Ute Tribe. Archeologists refer to the earliest known occupation of the area as the Folsom complex. Utilitarian tools, carefully shaped from rock, characterized the Folsom people. The subsequent occupants include the Plano complex, the Archaic complex, the Uncompahgre complex, and the Ute complex. The variations between each complex occur in stone tool technology, use



of game species, the environment, and the change in lifestyle. Many small, temporary campsites located in the vicinity of Blue Mesa Reservoir along the rims of Black Canyon apparently are related to this late prehistoric and early historic occupation. These original occupants' culture and lifestyle are so similar to the Ute Tribe that it can be inferred they are closely related.

"In 1880 after the so-called Meeker Massacre (in which they played no part) a government treaty council forced the Uncompahgre to sell all their land in Colorado. Under armed escort they were then moved to an area just south of the Uintah Reservation in Utah. There a new reservation was established by executive order in 1882 and named Ouray after the Uncompahgre chief." (from *Handbook of North American Indians*, Vol. 4)

## **Impacts of Alternative A**

### ***Curecanti and Black Canyon***

Impacts to ethnographic resources are unknown since an ethnographic survey and assessment has not been completed. All alternatives call for the completion of an ethnographic survey prior to site plan proposals.

## **Impacts of Alternatives B and C**

### ***Curecanti and Black Canyon***

There would be an increase in cultural interpretive programming, including topics and values pertaining to the Ute culture. Additional information, such as oral histories with Ute tribal elders, would be required. Partnering with the Ute Indian Museum in Montrose would aid in acquiring some of this information.

## **Impacts of Alternative D**

### ***Curecanti and Black Canyon***

The emphasis of additional developments in this alternative would have the potential to increase conflict with ethnographic resources on the North Rim and in the riparian riverine and Blue Mesa ROAs.

## **Mitigation—All Alternatives**

The ethnographic resources of this portion of western Colorado have not been clearly identified and documented, even though Ute legends and ethnobotanical information have been included in interpretive programs in the past. No ethnographic surveys have been completed for Black Canyon or Curecanti. Letters were sent to Ute tribal governments at the outset of this planning process. Ongoing consultation should continue on an as-needed basis.

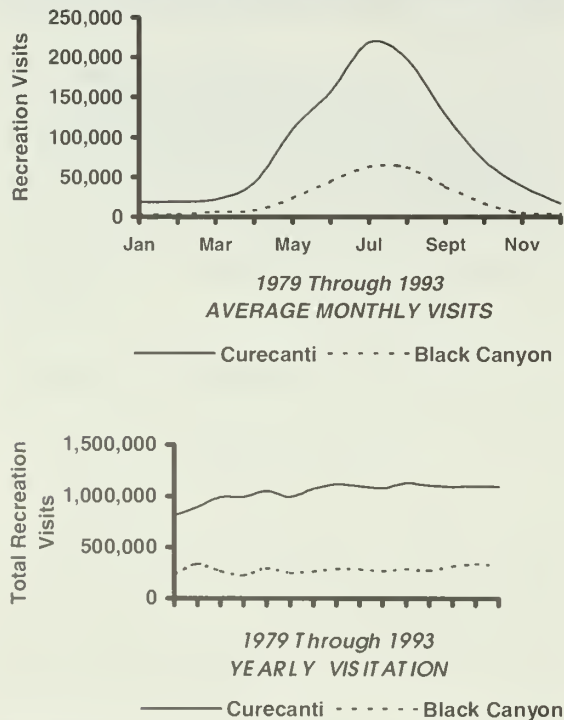
All future planning requiring Sec. 106 clearance would include an opportunity for review and input by the Ute tribal government.

## SOCIOECONOMIC RESOURCES

### *Visitation, Visitor Experience, and Area Economics*

#### **Curecanti—Description of the Environment**

Visitation figures for Curecanti National Recreation Area are shown on the graphs for 1979–1993. Peak visitation occurs in July and August. The main visitor season runs from Memorial Day to Labor Day weekend. Area visitors take advantage of a wide array of possible activities, which include camping, general sight-seeing, picnicking, boating, reservoir fishing, fly fishing, other watercraft use (jet skiing, sailboarding, waterskiing),



group use, hiking, backpacking, visitor center visits, snowmobiling, cross-country skiing, ice skating, ice fishing, rock climbing,

and so on. Many of the facilities already meet ADA (American Disabilities Act) standards, accommodating a wide range of users.

Many visitors come to camp, boat, and enjoy the reservoir and recreational opportunities for a few days. Return visits are common, and fishing is the primary draw for many recreationists. Many visitors use lodging, restaurants, and services in nearby communities.

The value of these recreationists to the local economies is great. Statistical analysis using the NPS Money Generation Model (Socioeconomic Studies Division) was applied using 1995 input data. Through this modeling, estimates can be of benefits to local economies. Assumptions of the model include direct expenditure by visitors in the local market, indirect and induced benefits from these expenditures, purchases by government and through salaries of government employees, expenditures by and through commercial services, benefits derived through state and local tax structures, and the number of jobs supported by all of these elements. Results from the 1995 Money Generation Model are:

- Total visits: 993,100
- Total Combined sales: \$21,309,190
- Total Increased Tax Revenue: \$1,880,904
- Total New Jobs Created: 533

#### **Black Canyon—Description of the Environment**

Visitation figures for Black Canyon of the Gunnison National Monument are shown on the previous table. Peak visitation occurs in July and August. The main visitor season runs from Memorial Day through Labor Day. Area visitors participate in a variety of activities, including camping, general sight-

seeing, picnicking, hiking, backpacking, bicycling, fly fishing, kayaking, rock climbing, and attending interpretive programs. A few of the facilities meet ADA (American Disabilities Act) standards, accommodating a wider range of users.

The majority of visitors spend only a part of the day stopping at overlooks and the visitor center, walking a few trails, learning a little bit about how the canyon was formed, and enjoying the wildlife and magnificent scenery. Those that camp, on average, spend only one night. Although return visits are common, many are first-time visitors. Those looking for hiking opportunities may enjoy the many shorter trails on the South Rim, but the North Rim offers greater challenge for rim trails. Hikes into the inner-canyon are very strenuous, and may not meet the needs of many visitors. Fishing the Gunnison River is a popular activity for those hiking to the river. The Colorado Division of Wildlife classifies this stretch of river as Gold Medal Waters, with some of the best fishing in the state.

Many visitors use lodging, restaurants, and services in nearby communities. The value of these recreationists and sight-seers to the local economies is great. Statistical analysis using the NPS Money Generation Model (Socioeconomic Studies Division) was applied using 1995 input data. Through this modeling, estimates can be made of benefits to local economies. Assumptions of the model include direct expenditure by visitors in the local market, indirect and induced benefits from these expenditures, purchases by government and through salaries of government employees, expenditures by and through commercial services, benefits derived through state and local tax structures, and the number of jobs supported by all of these elements.

Results from the 1995 Money Generation Model are:

- Total visits: 221,100
- Total Combined sales: \$12,275,973
- Total Increased Tax Revenue: \$1,081,710
- Total New Jobs Created: 307

## **Impacts of Alternative A**

### ***Curecanti and Black Canyon***

No significant changes would be anticipated. Current visitation trends have shown increasing tendencies, however, numbers have not surged. Both park units would continue to play important roles in serving visitors and in contributing to local economies.

## **Impacts of Alternative B**

### ***Curecanti and Black Canyon***

Additional visitation could be expected, but increases would not be dramatic. With the improvement of some facilities, a wider range of visitor needs would be served. Percentages of visits to the North Rim would increase only moderately because of minor improvements to some facilities. Additional facilities could be considered at Blue Mesa Reservoir and constructed, if warranted, after appropriate planning is completed. Use of the two lower reservoirs would remain basically unchanged. Economic benefits and jobs created would increase moderately over time.

## **Impacts of Alternative C**

### ***Curecanti and Black Canyon***

A decrease in facilities and developments, including removal of some current facilities may decrease visitation near developed areas. An area of the North Rim (the old ranger complex) would be modified for



educational and research work, having some impact on visitor composition on the North Rim. North Rim visits might increase under this scenario. South Rim visits would remain about the same or decrease only slightly (many visitors come for the view, rather than available facilities). However, duration of visits may decrease. Use at the two lower reservoirs would be about the same, with the exception of removal of commercial boat tours on Morrow Point Reservoir. That, in connection with the removal of the train exhibit at Cimarron, would have an adverse impact on visitors wishing to learn more of the railroad history and to see the rugged canyon that challenged railroad surveyors and engineers.

Use at Blue Mesa Reservoir would remain the same or decrease depending upon the degree of facility reduction. Benefits would include greater opportunities for solitude on the reservoir and fewer threats to water quality than in the developed alternative. Overall economic benefits would be expected to decline.

## **Impacts of Alternative D**

### ***Curecanti and Black Canyon***

This alternative would provide additional facilities on Blue Mesa Reservoir and on both rims, but the facilities and use on the two lower reservoirs would remain about the same. Some additional commercial boat services would be considered on Morrow Point Reservoir. Additional marinas and other commercial services could be considered for Blue Mesa Reservoir. New recreational opportunities and offerings would be explored and, where compatible, could be provided. Increased visitation could be expected for each management prescription as visitors look for opportunities to avoid contacts with the greater numbers of other visitors. North Rim visits could rise

significantly with improved facility and access. Economic benefits and jobs created would be greatest under this scenario.

## ***Park Operations***

### **Curecanti—Description of the Environment**

Park operations would continue at the present levels with an emphasis on protecting resources, serving the public, and responding to incidents as they occur. The park staffing level of 43.5 full-time equivalents operates with an annual budget of \$1,992,000. Park administrative, management, and operational functions are combined with those of Black Canyon. The administrative office is in the park at Elk Creek, 15 miles west of Gunnison, Colorado.

### **Black Canyon—Description of the Environment**

Park operations would continue at the present levels with an emphasis on protecting resources, serving the public, and responding to incidents as they occur. The park staffing level of 15.0 full-time equivalents operates with an annual budget of \$671,000. Park administrative, management, and operational functions have recently been combined with that of Curecanti. Headquarters is at Elk Creek (Curecanti). A satellite office in Montrose provides management support and liaison with west end communities.

## **Impacts of Alternative A**

### ***Curecanti and Black Canyon***

There would be no change in existing staffing levels.

## Impacts of Alternatives B, C, and D

### *Curecanti and Black Canyon*

Immediate and long-term impacts would include:

- An increase in construction activities and associated traffic would create small inconveniences to park staff and visitors. Traffic management and other short-term plans would be created to reduce disruptions and dangers to the visitors and park staff. In addition, the short-term plans would allow for efficient and economical functions of the park unit to proceed.
- An increase in solid waste could result from construction activities and replacement of buildings, day use areas, and water and sewage systems.
- An increase in the cost of water hauling and waste disposal is likely to be a result of increases in visitation.

A moderate increase in personnel and funding would be required for additional interpretation, maintenance, and visitor protection to handle the additional workload of expanded facilities and services on the South Rim, including a new or improved visitor center, and resource management and visitor protection for providing research, monitoring, and visitor safety within the Black Canyon of the Gunnison wilderness.

### Impacts of Alternative C

#### *Curecanti and Black Canyon*

In the long term, staff would be maintained at current or slightly increased levels. Additional staff would be needed in resource management and interpretation, while an eventual reduction in maintenance staff would be the result of removal of some recreation facilities. Immediate impacts would include an increase in funding and operations and maintenance because of the cost of removing buildings and reducing

services by moving them to the outskirts of the park unit.

### Impacts of Alternative D

#### *Curecanti and Black Canyon*

Alternative D would be most costly requiring additional staff in all areas. Additional visitors would be drawn because of more and improved facilities. These in turn would create additional impacts to resources, and increases in resource management efforts would be needed to stay ahead of monitoring and research needs to identify problems and provide mitigating solutions.

More users imply additional workloads in law enforcement and search and rescue. The addition of a communications dispatch staff would be required. Additional interpretation staff would be needed to provide contacts in an increasing number of development areas. Maintenance workloads would increase in the areas of facility development and construction as well as routine maintenance. Additional concession staff may also be necessary should development include these types of added visitor services.

### Mitigation—All Alternatives

A traffic management plan and other strategies would be created to reduce disruptions and dangers to the visitors and park staff.

### *Cumulative Effects Of Alternative B: The Proposal*

Cumulative effects are defined as the aggregate impact resulting from all other actions bearing, effecting, or impacting on the same resource in addition to the proposal. Prior to future more detailed resource allocation actions, cumulative effects will need to be reassessed as a part of each site-specific proposal conducted.

Future plans tier to this general management plan. The environmental assessment or environmental impact statement prepared for each planning and design project will identify other development actions that will be going on at the same time as the proposed action. Such projects will include those within the park and the adjacent area beyond the park boundary. Once these projects have been identified the plan will provide an overall assessment as to what the cumulative effects will be (localized, temporary, long-term, unknown, etc.) and what steps might be taken to mitigate impacts.

### **Curecanti**

The cumulative effects of Alternative B result from the existing conditions combined with impacts of future visitors that come to experience the natural and cultural features of the area. Potential future shoreline development coupled with existing facilities along the highway in and outside Curecanti NRA could lead to expansion of sites and adjacent areas as they continue to be used. Visitor use opportunities could increase the type and level of visitor traffic along the lakeshore, thereby increasing the frequency and duration of noise levels along the route.

The rate of certain types of recreationists may increase more than others. For instance, the number of water-based users may stay the same while the number of hikers may increase as a result of a new hiking trail and added interpretive facilities. This may contribute to existing impacts along the lakeshores but could be minimized by developing partnerships with educational institutions and private sector entities to provide for visitor services and protection of park resources. If visitors are provided with more interpretive opportunities along the lakeshore, interpretive signs could be used to provide orientation as an alternative to direct

contact with park staff. This may also lessen visitor impacts.

Continual efforts to establish partnerships may result in shared resource protection, hazard prevention education for park visitors, and renewed visitor appreciation of the resources. This would include consultation with a variety of agencies and entities, including tribal governments, to ensure compliance with various laws, regulations, policies, and management directives.

### ***Development Actions***

The following development actions would be occurring simultaneously or chronologically within the life of the general management plan. Compliance requirements for NEPA, Section 106, T & E species, floodplains and wetlands, and so on, would be completed prior to any of these actions.

- There would be additional development on land surrounding Blue Mesa Reservoir.
- Ongoing maintenance and protection projects would continue.
- Development of a cooperative agreement to establish reservoir levels and determine downstream flows would continue.
- The developed MP area would provide added or redesigned facilities to support high-quality recreational experiences and activities.
- Multipurpose path from east boundary along Highway 50 to Elk Creek and Highway 149 to the boundary south of Iola could be constructed.
- There would be an increase in formal trail access to the river.
- A formal day use area—toilets, picnic tables, and parking—could be developed in the South Beaver Creek area.
- The pull off at Wilson's Landing would be hardened and delineated for day use operations.
- Selected turnouts would be hardened through the canyon.



- Replacement of the existing lagoons with a sewage treatment facility, appropriately designed and located, could be completed.
- A day use area would be constructed at the Old Highway 50 area.
- A day use area would be constructed with adequate parking at the Bay of Chickens site.
- The access road at Pine Creek would be paved to the BOR gate above Blue Mesa Dam.

Other resource restoration and rehabilitation projects are also planned to be completed within the park over the life of the plan.

Cooperative efforts with educational institutions and other federal agencies would be continued in order to maintain, monitor, and preserve the natural resources and establish baseline data for future resource management.

Activities outside the park are occurring that cumulatively affect the area and ecosystem:

- Private land adjacent to the park unit is used for hunting, grazing, ranching, homesites, and businesses.
- Additional subdivisions have been proposed; the probability of additional development is high. Developments in some locations, such as near the Dillon Pinnacles, would have adverse effects on the scenic viewshed.
- Property values are increasing and the area is becoming popular for summer and year-round homesites.
- Development far upstream (Gunnison and Crested Butte) may impact water and air quality.
- The area surrounding the national recreation area is extremely valuable as wildlife habitat.
- Winter elk and deer range and bighorn lambing areas occur within and adjacent to the NRA. These areas are especially sensitive to human encroachment during the winter and spring.
- The Gunnison River meanders across its floodplain before entering the Gunnison River Canyon, thus demonstrating its level of maturity. As a mature river will do, it sometimes changes course in this stretch, which may affect NRA, private, and other public lands. Efforts to curtail this changing of course impedes natural processes and evolution of the river system.
- Continued logging, mining, and grazing within the watershed may have cumulative effects on water quality of the reservoirs.
- Gravel operations upriver may have some impacts on water quality and fishery habitat.
- The long- and short-term impacts of management actions pertaining to whirling disease are not really known.
- The introduction of exotic species (inadvertent or intentional) can disrupt natural processes and population dynamics (e.g., fisheries).

## Black Canyon

The cumulative effects of Alternative B originate from existing conditions combined with impacts from future visitor use both inside and adjacent to the monument. The variety of recreational opportunities could alter levels of use and type of visitor traffic along the South Rim more than on the North Rim, thereby increasing the frequency and duration of noise levels along the route.

The rate of certain types of recreationists may increase more than others. For instance, the number of day hikers may stay the same while the number of auto-touring visitors may increase as a result of interest in additional facilities along the South Rim. This may add to existing impacts on the South Rim, but could be minimized by developing partnerships with educational institutions and private sector entities to provide for visitor services and protection of park resources. If auto-touring visitors are provided with more interpretive opportunities along the rim, interpretive signs could serve as an alternative to direct contact with park staff.

Continual efforts to establish partnerships may result in shared resource protection, hazard prevention education for park visitors, and renewed visitor appreciation of

the resources. This would include consultation with a variety of agencies and entities, including tribal governments, to ensure compliance with various laws, regulations, policies, and management directives.

### ***Development Actions***

The following development actions would be occurring simultaneously or chronologically within the life of the general management plan. Compliance requirements for NEPA, Section 106, T & E species, floodplains and wetlands, and so on, would be completed prior to any of these actions.

- Minor improvements to existing facilities on the North Rim would occur.
- Viewing facilities on the South rim would be maintained and improved.
- South Rim visitor center would be upgraded or a new visitor center would be constructed.
- Additions to parking areas would be built.
- Theme enhancements would be completed.
- New trails would be constructed.
- In the East Portal area and road access corridor, common architectural themes and improvements would be coordinated between Curecanti and the Bureau of Reclamation.
- The focus of interpretation would be expanded, with additional emphasis on wilderness and cultural resources.
- Additional protection services and patrols would occur on the South Rim and in the wilderness/backcountry.
- Additional staff training would be provided to respond proactively to emergency situations.
- Inventory of paleontological resources would continue as funding permitted.

Other resource restoration and rehabilitation projects are also planned to be completed within the park over the five- to ten-year life of this general management plan. Cooperative efforts with the State of Colorado, educational institutions, and other

federal agencies would be continued in order to maintain, monitor, and preserve the natural resources and establish baseline data for future resource management.

Activities outside the park are occurring that cumulatively Affect the area and ecosystem:

- The potential for reductions in water flows and/or changes in the flow regime is high as water development projects vie for a limited resource. The federal reserved water right has yet to be quantified.
- Private land adjacent to the park unit is used for hunting, grazing, and ranching operations. Illegal hunting activities on the North Rim may be occurring due to lack of boundary survey, marked boundary, and/or fencing.
- Livestock grazing is considered one of the major land uses of the area surrounding the park unit. Livestock trespass on the North Rim is occurring as a result of lack of boundary survey and fencing.
- Homesite development is occurring along entrances to each rim; additional subdivision of these lands is likely.
- Property values are increasing and the area is becoming popular for summer and year-round homesites.
- There may be a potential for future development on or near the South Rim on private land (Vernal Mesa and Signal Hill).
- Scenic air tours and general aviation overflights are likely to occur in the absence of federal restrictions, FAA interaction, or local government control.
- A private elk ranch is being developed on the North Rim adjacent to the park.
- Additional telecommunication towers within sight of the rims could be erected.

During the preparation of this document the National Park Service consulted with the following organizations and individuals:

## Advisory Council on Historic Preservation

### Education Institutions

- Western State College, Gunnison
- Mesa State College, Montrose

### Park Concessions

- Elk Creek Marina, Inc., Gunnison
- Fantasy Ridge (Black Canyon Climbing Concessionaire), Telluride
- Rim House Concessions

### Organizations

- Gunnison Basin Power
- High Country Citizens Alliance, Gunnison
- Trout Unlimited, Gunnison
- Montrose Chamber of Commerce
- Gunnison Chamber of Commerce
- Upper Gunnison River Water Conservation District, Gunnison
- National Audubon Society
- National Parks and Conservation Association, Salt Lake City
- North Fork Trails Network

### Local Government

- Delta County Commissioners
- City of Gunnison
- Gunnison County Commissioners
- Montrose Visitors and Convention Bureau

### State Government

- Southwestern Colorado Visitor and Tourism Board

- State Historic Preservation Office
- Colorado Division of Wildlife, Gunnison
- Colorado Water Conservation Board

### Federal Government

- USDA U.S. Forest Service, Gunnison
- USDI Bureau of Land Management, Gunnison
- USDI Bureau of Reclamation, Grand Junction
- USDI National Park Service
  - Black Canyon of the Gunnison National Monument, Montrose
  - Curecanti National Recreation Area, Gunnison
  - Rocky Mountain System Support Office, Rocky Mountain Cluster, Denver
    - 1) Planning
    - 2) Interpretation
    - 3) Concessions
    - 4) Administration
    - 5) Resource Data Management
- USDI U.S. Fish and Wildlife Service, Grand Junction

### Tribal Governments

- Southern Ute Tribal Council
- Uintah & Ouray Tribal Business Committee
- Ute Mountain Ute Tribal Council

Pursuant to the Endangered Species Act, the National Park Service requested a list of threatened and endangered species that might be affected by the plan from the U.S. Fish & Wildlife Service. Impacts have been analyzed and concurrence with the determination of no adverse effect *will be sought from the U.S. Fish & Wildlife Service.*



The NPS is also consulting with the state historic preservation officers and the Advisory Council on Historic Preservation in the preparation of this plan pursuant to the programmatic memorandum of agreement. These agencies were invited to participate during the initial stages of the project and have received copies of all documents published for the plan.

Incremental planning, information gathering, and formulation of management objectives were accomplished in 1993 when each unit conducted a three-day management assessment workshop (Black Canyon in August and Curecanti in October). Project scoping was continued in December 1994 through January 1995 with a thirty-day period for public comment and the publication of an information brochure for Black Canyon. Notices were published in local as well as regional newspapers for both parks. Fewer than 10 comments were received from this period for Curecanti and 19 for Black Canyon. Two major themes were expressed in these comments:

- No more roads/facilities vs. improve the North Rim/Blue Mesa for economic benefits.
- Leave as is vs. leave areas more primitive and protect resources.

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