

Chapter 4: Environmental Consequences



ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter of the Draft Resource Protection Study (RPS) / Environmental Impact Statement (EIS) analyzes the beneficial and adverse impacts of the actions in Alternatives 1 and 2 on each of the retained impact topics that are outlined in the Purpose of and Need for Action chapter, and described in detail in the Affected Environment chapter. In addition, a summary of the primary differences between the two alternatives is contained in the table on the last page of the Summary, near the beginning of this document.

GENERAL METHODOLOGY FOR ASSESSING IMPACTS

DEFINITIONS AND FOUNDATION FOR ANALYSIS

Four of the elements of the environment that are assessed in detail in this chapter are traditionally done so in environmental impact statements. In addition, they are required to be done so by this study's enabling legislation. They are the **natural, cultural, recreational, and scenic** resources.

The analysis is organized by impact topic. Under each topic is a listing of relevant policies and regulations, an overview of the topic-specific methodology, if applicable, and definitions of the impact thresholds, followed by the impacts of each alternative. The Summary of Environmental Consequences table displays the impacts of all alternatives on each topic (shown at the end of the Alternatives, Including the Proposed Action chapter).

The impact analyses were based on the extensive mapping of resources that occurred during the early phases of the project, as well as on information provided by NRA staff and relevant references and technical literature

citations. Each analysis by impact topic involved the following steps.

- Identify the area of analysis or geographic area that would be affected. For most impact topics, the area of analysis includes the current NRA and the proposed lands for the RPS. The term “proposed lands” refers to (1) public lands adjacent to the NRA that were identified through the study process to warrant transfer to NPS for inclusion within the NRA for more overall efficient management for all agencies concerned, in keeping with each agency's mission; and (2) private lands that warranted increased conservation measures relating to NRA goals and objectives, to be included within a Conservation Opportunity Area (COA), outside the proposed NRA boundary. The proposed lands are a feature of Alternative 2 – the Proposed Action, and are a subset of the larger “study area” that was initially examined at the beginning of the study. The proposed lands are divided into eight land units, A through H, to facilitate analysis.
- Identify the resources within the proposed lands and individual land units that could be impacted.
- Determine how the actions of each alternative would affect these resources, and characterize those impacts. Under Alternative 1 (the No-Action alternative), identify the baseline condition or existing impacts using the terms defined below. Identify the impacts of Alternative 2 (the Proposed Action), by qualitatively measuring the change in resource condition between existing conditions (Alternative 1) and Alternative 2.

Potential impacts of both alternatives are described in terms of type (beneficial or adverse, direct or indirect); context (site-specific, local, or regional); duration (short-term or long-term); and intensity (negligible, minor, moderate, or major).

This is consistent with the regulations of the Council on Environmental Quality (CEQ) that implements the National Environmental Policy Act (NEPA). More exact interpretations of intensity, duration, and type of impact are given for each impact topic examined. Definitions of intensity and duration vary by topic; but for all impact topics, the following definitions for type of impact were applied.

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that declines, degrades, and /or moves the resource away from a desired condition or detracts from its appearance or condition.

Direct: An effect that is caused by an action and occurs in the same time and place.

Indirect: An effect that is caused by an action, but occurs later in time or is farther removed in distance, and is still reasonably foreseeable.

RESOURCE CONSERVATION AND DEVELOPMENT ASSUMPTIONS

Throughout this chapter, reference is made to land units, which were defined earlier in the Alternatives, Including the Proposed Action chapter and the Affected Environment chapter. They were created for purposes of analysis during the development of alternatives. Collectively, they constitute the “proposed lands,” which consist of the public and private lands outside the NRA that were considered most important for conservation, and that are included within the larger overall study area.

A total of eight land units were identified, according to geographical location, similarity of resource values, reasonably foreseeable activities that occur within them, and land ownership. The land units are identified by the letters A through H, are shown on the map for Alternative 2 (Proposed Action), and are referenced throughout the Draft RPS/EIS. They consist of two types of land: (1) privately-

owned land within the COA – Land Units A, C, D, E, and G; and (2) non-NPS agency lands that are included within the proposed NRA boundary shown in Alternative 2 – Land Units B, F, and H. For ease of reference, the land units are again defined below.

Land Unit A (CO 92 COA): private lands north and south of Colorado State Highway 92 (CO 92) and Morrow Point Reservoir, including Black Mesa, Soap Mesa, Soap Creek, and Fitzpatrick Mesa

Land Unit B (Blue Mesa Reservoir Agency): agency lands from Soap Creek east to Beaver Creek, including Dillon Pinnacles, Blue Mesa north and south shores, and Gunnison River Canyon

Land Unit C (Gunnison River COA): private lands in the vicinity of Neversink and Riverway

Land Unit D (Iola Basin COA): private lands in Iola Basin, and South Gunnison River Canyon

Land Unit E (Sapinero/Blue Mesa COA): private lands in the vicinity of Sapinero Mesa, and Windy Point to Hunters Point

Land Unit F (Gateview Agency): agency lands in the vicinity of Gateview Campground

Land Unit G (West-End COA): private lands west of Fitzpatrick Mesa on the south side of Crystal Reservoir, and the area around Spring Gulch on the north side of Crystal Reservoir

Land Unit H (West-End Agency): agency lands north and south of Crystal and Morrow Point Reservoirs

Collectively, all the land units comprise the “proposed lands” for Alternative 2, consisting of public lands recommended for addition to the NRA (the agency lands); and the lands recommended for inclusion in a COA (the private lands).

The criteria that were used to determine the area of each land unit are shown in Table 2. This table first appeared in the Alternatives, Including the Proposed Action chapter, and then in the Affected Environment chapter. It again appears below, for ease of reference. If a resource or other criterion occurs within a given land unit, it is identified by a dot in the matrix. If the dot is highlighted in yellow, the associated criterion is considered to be a primary reason for the inclusion of the land unit within the proposed NRA boundary or the COA for Alternative 2.

The impact analysis under each impact topic focuses on both area-wide impacts, and impacts that are specific to each land unit. Impacts are highly dependent upon future landowner actions, because the rights of landowners are not affected by either alternative. Although NPS may facilitate resource conservation opportunities, all landowners would continue to have the freedom to exercise their personal property rights. Because landowner choices cannot be predicted by this plan, certain assumptions were necessary regarding land development to determine qualitative impacts.

Alternative 1 Assumptions

As noted in the Alternatives, Including the Proposed Action chapter, NPS would have no authority to expend funds for acquisition of fee title or conservation easements outside the existing NRA and would not be able to acquire funds for such a purpose without such congressional authorization. In addition, NPS would probably have limited success in going to Congress to seek funding for individual pieces of property or to add land to the NRA on an ad hoc basis.

NPS might be able to use very limited operating funds and/or special project funds to implement partnered projects within and outside the NRA, and would rely more on funding from other agencies and organizations to accomplish goals such as wildlife habitat or wetland improvement projects. Therefore, for purposes of analysis, it was assumed in this alternative that there is a greater likelihood

that more of the private lands adjacent to the NRA would be developed over time than in Alternative 2, and that resource values could be compromised.

Some land units within the proposed lands are more likely to be developed than other land units within the 5-to 10-year timeframe of this NEPA analysis. Based on their knowledge of the lands surrounding the NRA, members of the study team identified this development probability in Table 12. Please note that these are only assumptions for purposes of analysis. The definition of each level of development follows.

- *Low* – Because of topography and other issues, there is limited access and little development in the area. Included are areas where conservation easements are already in place. The likelihood of development in the near future is small.
- *Moderate* – Topography does not exclude development, and some access is available. Current landowners may not be interested in selling their property.
- *High* – The area is easily accessible, and some development already exists in the area.
- *Very High* – Direct access exists to major transportation corridors. Development is imminent, or some subdivision/development has already occurred. Some owners have stated they are interested in selling.

Lands with a high or very high development potential are the most likely to be developed within the next 10 years. Lands with low potential would most likely remain in their current, undeveloped state for some time into the future.

Alternative 2 Assumptions

The congressional authorization of the COA; the proactive efforts by the National Park Service to conserve lands surrounding the NRA; support from third party benefactors, such as conservation organizations and friends of the NRA; and the availability of funds from

Table 2: Factors Considered in Establishing Land Units

Criteria	Land Unit							
	A	B	C	D	E	F	G	H
	CO 92 COA	Blue Mesa Reservoir Agency	Gunnison River COA	Iola Basin COA	Sapinero /Blue Mesa COA	Gateview Agency	West-End COA	West-End Agency
Administrative Efficiency	●	●	●	●		●	●	●
Archeological/Historical Sites	●	●	●	●	●	●	●	●
Bighorn Sheep – Overall Range	●	●			●	●	●	●
Elk – Severe Winter Range	●	●	●	●	●	●	●	●
Gunnison Sage-grouse (all categories)		●	●	●	●	●		
Heron Rookery			●					
Historic Railroad Feature			●			●	●	
Lynx – Potential Habitat	●	●			●	●		●
Management Issues / Logical Boundary	●	●	●	●	●			●
Mule Deer – Severe Winter Range	●	●		●	●	●	●	●
Paleontology/Geology	●	●			●			●
Prairie Dog – Overall Range			●	●				●
Pronghorn – Winter Range		●		●				
Raptor Range	●	●	●	●	●	●	●	●
Rare and/or Imperiled Species	●	●	●	●	●	●	●	●
Recreation Opportunities	●	●	●	●	●	●		
Scenic Qualities from Primary Overlook or within 3-mile Viewshed	●	●	●	●	●	●	●	●
Understanding of Significant Resources	●	●	●	●	●	●		●
Water Quality	●	●	●	●		●	●	●

Notes:

A dot indicates the criterion is present within the land unit.

The addition of **yellow highlighting** indicates that not only is the criterion present, but it is of such significance, in combination with the other criteria present, to recommend that the land unit be included within the COA or proposed NRA boundary in Alternative 2.

TABLE 12: PROBABILITY OF DEVELOPMENT BY LAND UNIT

Region of Proposed Lands	Description and Geographic Location	Probability of Development in Near Future
Land Unit A CO 92 COA	Private lands in COA North and south of CO 92 and Morrow Point Reservoir: Black Mesa, Soap Mesa, Soap Creek, Fitzpatrick Mesa	Low to Moderate <u>Low</u> : Fitzpatrick Mesa and parts of Soap Mesa <u>Moderate</u> : Black Mesa, Soap Mesa, Soap Creek
Land Unit B Blue Mesa Reservoir Agency	Agency lands from Soap Creek east to Beaver Creek: Blue Mesa north shore, Iola Basin south shore, Gunnison River Canyon	Not applicable – all federal land
Land Unit C Gunnison River COA	Private lands in COA Neversink, Riverway	Moderate
Land Unit D Iola Basin COA	Private lands in COA South Gunnison River Canyon, southeast Iola Basin	Low to High <u>Low</u> : Gunnison River Canyon <u>High</u> : Southeast Iola Basin
Land Unit E Sapinero/Blue Mesa COA	Private lands in COA Sapinero Mesa; Windy Point; Hunters Point	Very high
Land Unit F Gateview Agency	Agency lands in Gateview area	Not applicable – all federal land
Land Unit G West-End COA	All private COA lands west of Fitzpatrick Mesa and Spring Gulch (on both sides of Crystal reservoir)	Low to High <u>Low</u> : all areas but Cimarron <u>High</u> : Cimarron area
Land Unit H West-End Agency	Agency lands west of Fitzpatrick Mesa and Black Mesa (on both sides of Crystal Reservoir), including USFS land near Long Gulch.	Not applicable – all federal land

Congress would improve the likelihood of future resource conservation on private lands. This likelihood is emphasized and assumed in the impact analysis for Alternative 2. However, success of this alternative is dependent in large part upon the interest and cooperation of private landowners.

Although resource conservation mechanisms would be available, it is recognized that property owners may choose not to exercise any of these options. Thus, it is assumed in the Alternative 2 impact analysis that a range of actions are possible on any private parcel, including: (1) continuation of existing conditions, where no land conservation tool would be implemented (same as Alternative 1); and (2) a land conservation tool is implemented, such as NPS providing assistance through general agreements or incentive payments, or acquisition of an interest in the land, such as conservation easements or fee simple acquisition. In turn, a range of impacts could occur.

Recognizing that a range of impacts are possible under Alternative 2, the analysis for each impact topic focuses on the potential impacts under the assumption that some degree of landowner cooperation would occur. However, it is also recognized that the impacts of Alternative 1 (the No-Action alternative) could also occur under Alternative 2 (the Proposed Action), if there is no cooperation on the part of landowners. In any event, impacts will be further assessed in more detail at the time a *land protection plan* is produced. At that time, which tools of resource conservation to apply to which tracks of land within the COA will be clearly defined.

CUMULATIVE IMPACTS

The CEQ regulations to implement the National Environmental Policy Act require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably

foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts are considered for all alternatives, including the No-Action alternative. Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at the NRA, and if applicable, the surrounding region. These projects, also known as cumulative actions, are grouped and listed below according to agency, county, and land trusts and conservation groups.

National Park Service Plans or Actions

Black Canyon of the Gunnison National Park and Gunnison Gorge National Conservation Area Act of 1999. This Act recognizes the many significant ecological, geological, scenic, historical, and recreational values of lands within and adjacent to the Black Canyon of the Gunnison. The Act established the Black Canyon of the Gunnison National Park, the Gunnison Gorge National Conservation Area, and the Gunnison Gorge Wilderness, and expanded the Black Canyon of the Gunnison Wilderness. When Congress changed the designation of Black Canyon from a national monument to a national park, land was transferred from the Bureau of Land Management (BLM) to NPS to be included within the national park boundary. The Act also provided for the continuance of existing grazing leases that now occur within the park on the former BLM land, through the lifetime of the current permit holders. The Act provided that NPS could acquire by purchase, donation, or exchange, specific land or conservation easements, subject to the approval of the property owner. A subsequent Act (2003) further modified the boundary of the national park, and identified additional private land, again subject to landowner approval. The 2003 Act provided that Reclamation would retain administrative jurisdiction over the Crystal Dam Access Road, and land, facilities, and roads of the Bureau of Reclamation in the East Portal Area

for the maintenance, repair, construction, replacement, and operation of any facilities relating to the delivery of water and power under the jurisdiction of Reclamation.

Fire Management Plan. A fire management plan was approved in 2006 for Curecanti National Recreation Area and Black Canyon of the Gunnison National Park. The plan identifies a strategy for managing wildfire, and using fire as one of many management tools. NPS wildfire and prescribed fire events will be coordinated with other agencies (BLM, USFS, Reclamation, and Colorado State Forest Service) and affected private landowners. The plan provides NPS with greater flexibility to manage wildfire and to utilize fire as one of many possible tools to address resource issues.

Other Federal Agency Plans or Actions

Bureau of Land Management. A variety of plans exist that outline management objectives for BLM land in the region surrounding the NRA. They include the Gunnison Area and Uncompahgre Basin Resource Management Plans, the Gunnison Sage-grouse Conservation Plan, the Gunnison Gorge National Conservation Area Resource Management Plan, and area-wide fire management plans. Although BLM is an agency that manages for multiple-use objectives, all of its plans manage regionally important natural resources such as elk and mule deer winter range, Gunnison Sage-grouse, and riparian habitat to preserve these resources. Cultural and recreational resources are also managed to preserve their integrity and to provide resource-based recreation opportunities, respectively.

U. S. Bureau of Reclamation. Reclamation intends to prepare a draft EIS to describe potential effects of operational changes for the Aspinall Unit that are related to compliance with the Endangered Species Act (ESA). The purpose of Reclamation's proposed action is to operate the Aspinall Unit to avoid jeopardy to endangered species while maintaining the congressionally authorized Unit purposes. Alternative operations will be considered. The Aspinall Unit (formerly the Curecanti Unit) of the CRSP was authorized by the CRSP Act of

April 11, 1956 (70 Stat. 105). Reclamation operates and maintains the Aspinall Unit, its facilities, its lands and land interests, and its water and water interests to meet project purposes. The presence of the three reservoirs has created water-based recreation opportunities.

U.S. Forest Service. The Gunnison National Forest adjoins the NRA along its northern side. USFS manages land for values similar to the NRA and the BLM, such as wildlife habitat and recreational resources, but has additional mandates to manage for other multiple use objectives, including extractive industries, such as timber. The Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests are combined into one administrative unit. At present, forest plans are in the process of being amended. The process was begun in 2001, and a draft plan was released for public review and comment in spring 2007. The plan identifies thirteen management areas representing a continuum from low management intensity with a high degree of naturalness, to high management intensity with low levels of naturalness. After public comments are received and evaluated, the USFS will update the plan and provide a final version for public review. Information on this project can be obtained at the following website: www.fs.fed.us/r2/gmug/policy/plan_rev.

Western Area Power Administration. Western and/or other utilities could propose that existing transmission line corridors within and adjacent to the NRA be upgraded, or new corridors be added, to handle additional capacity in order to adequately distribute electric power across this east/west pathway. There are a limited number of options available to the utility industry for routes to move product to the market, whether the product is electricity, oil or gas, or even water; and existing rights-of-way provide an opportunity that may not exist elsewhere.

State Agency Plans or Actions

Colorado Department of Transportation / Federal Highway Administration. Highway easements and/or rights-of-way (ROW) are in place along US 50 and CO

92; therefore, additional land acquisition activity or potential conflicts with the RPS are not likely. Future work on US 50 between Montrose and Monarch Pass will involve modernizing the road, such as providing 8-foot shoulders where possible. Road widening is not anticipated, unless viable opportunities present themselves. Some improvements may occur to highway intersections, and minor road improvements may be made along US 50.

West Elk Loop Scenic and Historic Byway.

The West Elk Loop is one of 25 scenic byways designated by the State of Colorado. It covers 204 miles of two-lane roads through parts of rural western Colorado that afford spectacular views of wilderness areas, canyon rims, and a variety of other memorable mountain environments. Portions of the byway are located along CO 92 and US 50 within the proposed lands.

The road begins in Carbondale and follows CO 133 south over McClure Pass to Paonia Reservoir, Paonia, and Hotchkiss. The road continues to head south from Hotchkiss on CO 92 veering to the east near the Black Canyon of the Gunnison and Black Mesa. It joins US 50 at Blue Mesa Reservoir and travels into Gunnison. From Gunnison, the road travels north to Crested Butte and turns west over Kebler Pass, with the loop ending at Paonia Reservoir.

In 2000, the West Elk Byway Corridor Management Plan was completed. The goals identified in the chapter addressing resource conservation in that document appear to be similar to the objectives of the RPS.

County Plans or Actions

Gunnison County Comprehensive Plan.

The Gunnison County Comprehensive Plan is currently in process, and is being developed in response to a requirement of state law. The vision of the plan is to provide physical and economic direction for the county-- as a road map for coordination between Gunnison County and local cities and towns to address future growth. The plan defines areas with the least and most development constraints,

identifies infrastructure needs, and anticipates and plans for impacts. It establishes overall direction for the county and specifically addresses issue areas such as housing, transportation, economic development, agriculture, transportation, recreation, and the environment. Two components of the plan have been completed and adopted: (1) the Crested Butte to Gunnison Corridor Plan; and (2) the Upper Crystal River Valley Plan. The county has not yet begun to study the area east and west of Gunnison, which includes the Curecanti area. The county has indicated that they may adapt certain aspects and/or recommendations for the Curecanti area that come out of the RPS, after they have undertaken the planning process for the western portions of the county.

Gunnison County Land Use Regulation

(LUR). The purpose of the Gunnison County LUR, created in 2001, is to promote the health, safety, and general welfare of the citizens of Gunnison County by giving reasonable consideration to the social, economic and environmental characteristics of the community and the compatibility of proposed land use changes with existing uses. The LUR proposes to conserve environmental resources by maintaining environmental quality; preserving quality and quantity of water resources; preserving wildlife habitat; and regulating land use in natural hazard areas. The LUR also allows for the establishment of special geographic areas, or SGAs, if the county determines that certain economic or resource issues might be more adequately addressed with modification of the LUR within the SGA. The county has used the SGA process sparingly, and any interest in considering an SGA for the Curecanti area will likely occur after the completion of the Gunnison County Comprehensive Plan.

Montrose County Master Plan. The vision for the Montrose County Master Plan (Montrose County 2001) is as follows.

Montrose County should retain its outstanding scenic and natural qualities while providing quality employment, housing, education and recreation to its residents.

Tourism recreation, agriculture and light industries will remain important segments of the economy; efforts will be made to diversify and encourage sustainable economic development. The majority of the county's youth should be able to have a career and eventually raise a family within the county. A healthy and vibrant community will continue to evolve, and the rural character and hometown atmosphere of Montrose County will be maintained.

The county is broken into four geographic areas, with portions of the NRA in the Maher/Black Canyon area and the South Valley area. NPS lands, north and east of the Gunnison River, fall within the Maher/Black Canyon area. Lands south of the river, including US 50, are located within the South Valley area that includes Montrose. The relevant land use policies include the following:

- Maher/Black Canyon: Preserve the rural character and ranching heritage of the Maher/Black Canyon area, and prepare for any impacts increased visitation at the Black Canyon of the Gunnison National Park may place on the Maher/Black Canyon area.
- South Valley: Support the development of land in a manner that is consistent with, or does not conflict with, agricultural practices. Manage the development of land in a manner that is efficient and cost-effective for the taxpayers of the county.

Conservation Easements and Land Trusts

As of 2004, approximately 33,000 acres of land within Gunnison County were in easements or other types of open space. This represented approximately 10% of all private land in the county (Michaelson). Another large 10,000-acre easement is held by the Rocky Mountain Elk Foundation north of CO 92.

- Crested Butte Land Trust - 2,500 acres (8% of 33,000 acres) – focuses on ecological/biodiversity resources, watershed, and riparian resources

- Gunnison Ranchland Conservation Legacy – 14,000 acres (42%) – focuses on preserving/conserving ranches and ranchland
- Nature Conservancy – 8,357 acres (25%)
- Additional conservation easements – 4,913 acres (15%)
- Additional open spaces – 3,148 acres (10%).

Other Plans or Actions

DeGette's Wilderness Bill. U.S.

Representative Diane DeGette has proposed that the West Elk Wilderness Area be expanded to the south to include that area of land between Coal Creek and Red Creek. The area would encompass lands currently administered by three agencies – USFS, BLM, and NPS - and would include some lands in Land Unit B being proposed to be included in the NRA in Alternative 2. The National Park Service has not taken an official position on this proposal, and it is not being analyzed in the Draft RPS/EIS. However, if this wilderness were to be designated, and the land were to be included in the NRA, then NPS would work closely with USFS to develop management guidelines that are compatible with the rest of the West Elk Wilderness, while being true to the purpose and mission of the NRA. This would be addressed in an updated general management plan or implementation plan for the NRA. Otherwise, due to the relatively long and narrow configuration of the NRA; the presence of highways, back-country roads, motorized recreational watercraft, off-road vehicles, and snowmobiles within or surrounding the NRA; and the presence of dams, power generating equipment, and related facilities, and mechanized operational requirements of Reclamation in performing their mission; the study team concluded that no other area within the NRA or the surrounding COA is suitable for Wilderness designation. Furthermore, any land that Reclamation has withdrawn for their projects would be inappropriate for Wilderness

designation due to project operational requirements, as mandated by Congress in the Colorado River Storage Project Act.

IMPAIRMENT ANALYSIS

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

These laws give the National Park Service the management discretion to allow impacts to area resources and values when necessary and appropriate to fulfill the area's purposes, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within a national park system unit, that discretion is limited by the statutory requirement that the agency must leave area resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the NPS manager, would harm the integrity of area resources or values. Impairment may result from NPS activities in managing the area, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the area. An impact to any area resource or value may constitute an impairment, but an impact would more likely constitute an impairment if it has a major or severe adverse effect upon a resource or value, where that resource or value is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the area

- Key to the natural or cultural integrity of the area, or to opportunities for enjoyment of the area
- Identified for conservation by the area's general management plan or other relevant NPS planning documents.

A determination of whether there is impairment, or not, is included in the "Conclusion" section for each alternative for each impact topic relating to NRA resources and values. The determinations are based on the above definition of impairment. The term "impairment," as defined above, does not apply to visitor recreation, regional economic and social characteristics, or National Park Service and neighboring agency operations, because for purposes of this analysis, they are not considered to be "resources," such as natural resources, cultural resources, and scenic resources.

NATURAL RESOURCES

WATER QUALITY

Guiding Policies and Regulations

Current laws and policies require certain desired conditions be achieved for water quality at Curecanti National Recreation Area. Refer to the following box for details.

DESIRED CONDITIONS FOR WATER QUALITY	SOURCE
Surface water and groundwater are perpetuated as integral components of NRA aquatic and terrestrial ecosystems, consistent with the primary purposes of Reclamation's projects; and the quality meets or remains better than all applicable water quality standards.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i> - NPS- 77, "Natural Resources Management Guidelines" - <i>Clean Water Act</i> - Executive Order (EO) 11514 "Protection and Enhancement of Environmental Quality"
Conserve the scenery, natural and cultural resources.	NRA Purpose

Methodology

Water quality impacts were qualitatively assessed using the "General Method for Assessing Impacts", including land conservation and development assumptions, identified at the beginning of the chapter. The following impact thresholds were established in order to measure the relative changes in water quality (overall, localized, short term and long term, cumulative, beneficial and adverse) as a result of the alternative actions.

Negligible: The impact to water resources would be localized and incalculable.

Minor: The impact to water resources would be localized and calculable.

Moderate: The effect on water resources would be calculable and would result in a change in water chemistry and/or biota over a relatively wide area or stream reach.

Major: The effect on water resources would be calculable and would substantially change the water chemistry and/or biota over a large area or stream reach within and outside of the proposed lands.

Impacts are short-term when water quality recovers in less than 1 day. Long-term impacts occur when the recovery period is 30 days or more.

Impacts of Alternative 1 – No Action

Analysis

Depending upon land development patterns on private lands within the proposed lands, sedimentation and loading of water quality contaminants into NRA waters could potentially increase in drainages adjacent to developed areas. Without adequate mitigation, degradation of water quality could occur within the NRA and proposed lands, resulting in short- to long-term moderate to major impacts. Degraded water quality could lead to impacts to water-based recreational activities, resulting in long-term moderate to short-term major impacts to visitor use, enjoyment, appreciation, and understanding. Some minor beneficial impacts would occur from the continuation of baseline understanding of water quality conditions through long-term cooperative monitoring efforts, including basin-wide partnerships and cooperation with USGS.

Drainages most at risk of degradation include Cebolla Creek, Lake Fork, Steuben Creek, Pine Creek, and the Gunnison River above Blue Mesa Reservoir. Currently, degradation is an issue at Cimarron Creek, where *E coli* regularly exceeds standards in the summer months.

Cumulative Impacts

Development, grazing, off-road vehicle use, and other disturbance causing activities occurring on public and private lands adjacent to the proposed lands could continue to cause sedimentation and loading of contaminants in

nearby water systems, including the Gunnison River and tributaries. Best management practices of federal and county agencies that manage or regulate land use in the area, such as the BLM, Forest Service, and Gunnison and Montrose Counties, would minimize some of these impacts on regional water quality by controlling or mitigating impact-related uses. In addition, private lands with conservation easements would not likely contribute to cumulative effects on regional water quality because of restricted development rights. These best management practices and conservation efforts would mitigate some of the adverse impacts of other land use activities, that when combined with the impacts of Alternative 1, would result in cumulative impacts on area water quality that are long-term minor to moderate.

Conclusion

The continuation of, or increase in, current land use practices within the proposed lands, particularly development, could cause long-term moderate to short-term localized major impacts from increased sedimentation or contaminant loading into waters within the proposed lands.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Analysis

There would be no direct impacts to water quality within the NRA, including those lands transferred from other agencies. Other impacts would vary with level of participation in land

conservation tools, as well as the types of tools implemented. Since it is likely that landowners within the COA would support some level of partnership and participation in the tools that are authorized by Congress, long-term minor to moderate beneficial impacts could result. Through mechanisms such as conservation easements and fee simple acquisition, it is likely that development would be limited, conserving important resource attributes such as vegetation and surface soils. These efforts would result in less potential for sediment and other run-off from private lands. In addition, agricultural practices allowed under an easement would most likely be monitored, minimizing the potential for contaminant loading into waters of the NRA and proposed lands. The quality of existing water-based recreation activities would be maintained.

Cumulative Impacts

As described in Alternative 1, a variety of land use activities contribute to adverse water quality impacts within the region. However, some of these impacts are mitigated by ongoing best management practices implemented by land management agencies or local counties. Other land conservation activities outside the proposed lands also contribute to improved regional water quality. These activities when combined with the minor to major beneficial impacts associated with increased land conservation activities in Alternative 2, would result in cumulative, minor to moderate beneficial impacts.

Conclusion

The increased likelihood that landowners would use tools to conserve resources on their property would result in long-term minor to major beneficial impacts on water quality.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other

relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

GEOLOGY AND PALEONTOLOGY

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for geology and paleontology at Curecanti National Recreation Area. Refer to the following box for details.

Moderate: The effect on geological or paleontological resources would be readily apparent and result in a change to their character over a relatively wide area.

Major: The effect on geological or paleontological resources would be readily apparent and substantially change their character over a large area within and outside of the proposed lands.

Because most geological and paleontological resources are non-renewable, any effects would be long-term.

DESIRED CONDITIONS FOR GEOLOGY AND PALEONTOLOGY	SOURCE
Paleontological resources, including both organic and mineralized remains in body or trace form, are conserved, preserved, and managed for public education, interpretation, and scientific research.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i> - NPS- 77, "Natural Resources Management Guidelines"
Natural geologic resources and processes function in as natural a condition as possible, except where special management considerations are allowable under policy, especially to protect facilities, operations, and public safety.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i>
Conserve the scenery, natural and cultural resources.	<ul style="list-style-type: none"> - NRA Purpose

Methodology

Potential impacts to paleontological resources were evaluated using the "General Methodology for Assessing Impacts." The following impact thresholds were established to measure the potential changes in number of local paleontological sites as a result of the alternative actions.

Negligible: The impact would be localized and not detectable, or would be at the lowest levels of detection.

Minor: The effects to geological and/or paleontological resources would be localized and slightly detectable.

Impacts of Alternative 1 – No Action

Analysis

Paleontological resources within Land Units A (CO 92 COA) and E (Sapinero/Blue Mesa COA) could be susceptible to long-term minor to moderate adverse impacts if future land use resulted in disturbance of areas where resources exist. Land Unit E would be especially vulnerable due to the very high development potential of this area. Resources in areas that would be transferred between agencies (Land Units B [Blue Mesa Reservoir Agency] and H [West-End Agency]) would continue to be conserved, as federal management would continue.

Cumulative Impacts

Regional paleontological resources could be affected by land use practices and activities occurring outside the proposed lands, such as development of private lands, off-road vehicle use and other recreational opportunities, and other land-disturbing activities. However, federal land management agencies charged with conservation of such resources would minimize or eliminate some of these impacts through monitoring and other management activities. Cumulatively, these land-disturbing activities when combined with impacts associated with Alternative 1 could potentially cause minor long-term adverse impacts to geological or paleontological features throughout the region.

Conclusion

Private lands in the vicinity of Sapinero Mesa and the area southeast of Morrow Point Reservoir would be vulnerable to long-term minor to moderate adverse impacts from development and other land uses that could result in disturbance and degradation to geological and paleontological resources. Resources in other locations with lower development potential would likely be conserved into the foreseeable future.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed ActionAnalysis

Though some disturbance to resources within the proposed lands would still

be likely, minor to moderate long-term beneficial impacts would be expected due to increased conservation of resources on lands brought into the NRA through transfer or through the use of other tools by landowners within the COA.

Cumulative Impacts

Under Alternative 2, cumulative impacts to geological and paleontological resources in the region would be similar to Alternative 1. However, the potential for landowners to implement resource conservation tools within the COA under Alternative 2 would reduce the degree of adverse impacts related to Alternative 1, resulting in cumulative negligible adverse impacts to these resources.

Conclusion

Minor to moderate long-term beneficial impacts to geological and paleontological resources would occur as a result of an increase in resource conservation activities.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

VEGETATION AND WILDLIFE**Guiding Policies and Regulations**

Current laws and policies require that certain desired conditions be achieved for vegetation and wildlife at Curecanti National Recreation Area. Refer to the following box for details.

DESIRED CONDITIONS FOR VEGETATION AND WILDLIFE	SOURCE
Populations of native plant and animal species function in as natural a condition as possible except where special management considerations are warranted.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i> - NPS- 77, "Natural Resources Management Guidelines"
Native species populations that have been severely reduced in or extirpated from Curecanti National Recreation Area are restored where feasible and sustainable.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i>
Invasive plant and animal species are reduced in numbers and area, or are eradicated from natural areas of Curecanti National Recreation Area. Such action is undertaken wherever such species threaten the native vegetation or wildlife resource or public health, or when control is prudent and feasible.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i> - EO 13112, "Invasive Species" - NPS- 77 "Natural Resources Management Guideline"
Conserve the scenery, natural and cultural resources.	<ul style="list-style-type: none"> - NRA Purpose

Methodology

Available information on wildlife and vegetation resources in the proposed lands was compiled. Where possible, map locations of sensitive resources within the various land units were consulted. Analyzed resources such as native vegetation communities, wildlife habitats, and special status species may occur in suitable habitat within the proposed lands, irrespective of ownership or managing agency. In addition, habitats extend beyond the boundary of Alternative 2's proposed lands, and the evaluated resources are recognized as part of the larger ecosystem. The analyses of impacts include lands within the NRA as well as within the larger area of proposed lands, as stated. The following impact thresholds were established to measure the relative changes in vegetation and wildlife resources as a result of the alternative actions.

Negligible: Wildlife, including native fish, and their habitats would not be affected or the effects would be at or below levels of detection and would not be measurable or of perceptible consequence to wildlife populations. Impacts would be within the range of natural variability. No native vegetation (including riparian and wetland communities) would be affected, or some

individual native plants could be affected as a result of the alternative, but there would be no measurable or perceptible changes in plant community size, integrity, or continuity.

Minor: Effects to wildlife or habitats would be measurable or perceptible, but localized within a small area. While the mortality of an individual animal might occur, the viability of wildlife populations would not be affected, and the population, if left alone, would recover. Effects on native plants, riparian communities, or wetlands would be measurable and perceptible, but would be localized within a small area. The viability of the plant community would not be affected, and the community, if left alone, would recover.

Moderate: Effects to wildlife populations or habitat would occur over a relatively large area. The change would be readily measurable in terms of abundance, distribution, quantity, or quality of population. A change would occur over a relatively large area within native vegetation, riparian or wetland communities that would be readily measurable in terms of abundance, distribution, quantity, or quality.

Major: Effects to wildlife populations or habitats would be readily apparent, and would substantially change wildlife populations over

a large area within or outside the proposed lands. Effects on native plant communities, riparian communities, or wetlands would be readily apparent and would substantially change vegetation community types over a large area.

Impacts to wildlife and vegetation are short-term if they could recover in less than one year and in less than three years or growing seasons, respectively. Long-term impacts would occur if wildlife would require more than one year, and vegetation would require more than three years or growing seasons to recover.

Impacts of Alternative 1 – No Action

Analysis

Native Vegetation. Within the NRA, management for conservation of native plant communities would continue. Adverse impacts would include the likely continuation and possible increase in the spread of noxious or exotic plant species into the NRA from adjacent lands that are not managed for weed control. Displacement of native species by these species would result in long-term minor to moderate adverse impacts to native plant communities. Where federal agencies and other entities are cooperating to manage noxious weeds on lands adjacent to the NRA, localized minor beneficial impacts would be realized within the NRA. Overall impacts would vary according to the level of funding made available to mitigate and control weed populations within the NRA.

The spread of noxious or exotic plant species, as well as development and other land uses, could also displace native vegetation communities on private and federal lands in the proposed lands, resulting in localized long-term moderate to major adverse impacts within the proposed lands. Land Unit E (Sapinero/Blue Mesa COA) has a very high development potential, and portions of Land Units D (Iola Basin COA) and G (West-End COA) also have high development potential. These lands would be most susceptible to alteration of native vegetation should these areas be disturbed during development.

Riparian and Wetland Communities.

Riparian and wetland communities within the NRA and other federal agency lands would continue to be conserved as consistent with agency policies. Riparian and isolated (non-jurisdictional) wetlands located outside the NRA include those potentially present in proposed Land Units C (Gunnison River COA) and D (Iola Basin COA). These land units include areas of moderate to high development potential. Only jurisdictional wetlands are subject to regulation by the Corps on private lands. Under Alternative 1, moderate adverse impacts to riparian and isolated wetland communities in these areas would likely occur through continuation or increase in land uses such as development, haying and grazing. In addition, the invasion of noxious weeds into these communities could cause moderate long-term impacts to riparian or wetland communities within the NRA or Land Units C and D of the proposed lands. Jurisdictional wetlands are protected from filling activities by Section 404 of the Clean Water Act, which requires appropriate mitigation for impacts. Wetland or riparian communities present on public lands outside of the NRA would be minimally impacted, as policies of land management agencies call for beneficial protection of such areas in most instances.

Big Game Wildlife Species. Important habitat for big game within the NRA and surrounding proposed lands includes severe winter range for elk and mule deer, as well as overall range for bighorn sheep, and winter range for pronghorn. Big game habitat within the NRA would continue to benefit from conservation. However, impacts to big game use of habitats within the NRA could occur as a result of habitat fragmentation on adjacent lands from development or other land uses. Long-term minor to moderate impacts to big game movements into and out of the NRA would occur from the continuation or increase in habitat fragmentation on adjacent lands. This could lead to the overuse of NRA range and long-term moderate impacts to habitat for elk, mule deer, bighorn sheep, and pronghorn as a result of degradation. In addition, the spread of noxious or exotic plant species onto NRA lands would likely continue and possibly

increase, resulting in habitat degradation and long-term minor to moderate impacts to NRA big game habitat. Impact intensities would vary with funding for mitigation of invasive weed populations.

Table 13 displays the types of habitat and acres of each within the NRA that would continue to be conserved within the NRA as well as those acres on land units adjacent to the NRA that may be directly affected by land use activities.

of current federal agency management and low to moderate development potential, respectively. Beneficial impacts to this area, and other big game habitats in federal agency lands within the proposed lands would continue due to agency management policies.

An additional threat to bighorn sheep includes the risk of disease transmission to wild herds from domestic sheep populations. This risk would continue in areas such as Fitzpatrick

TABLE 13: BIG GAME HABITATS – NO- ACTION ALTERNATIVE

Species	Habitat Type	Acres within Current NRA	Acres within Privately Owned Portions of Proposed Lands Surrounding NRA
American Elk	Severe Winter Range	18,000	7,890
Mule Deer	Severe Winter Range	16,000	8,420
Bighorn Sheep	Overall Range	14,600	None
Pronghorn	Winter Range	260	1,125

Habitat located on lands outside of the NRA would be susceptible to long-term moderate to major adverse impacts from loss of severe winter range due to noxious or exotic plant species invasion, development, or other land use. This would include approximately 7,890 acres of severe winter range for elk and 8,420 acres of severe winter range for mule deer. Severe winter range for elk and mule deer in Land Units D (Iola Basin COA) and E (Sapinero/Blue Mesa COA) (2,850 and 1,020 acres respectively) is most vulnerable due to high or very high development potential of those lands. Bighorn habitat of particular concern is located in Land Unit E and portions of Land Unit G, where potential for development is very high and high, respectively. Pronghorn winter range on other federal lands and on private lands within the proposed lands is located in Land Unit B (Blue Mesa Reservoir Agency) and Land Unit D (Iola Basin COA). These areas are somewhat protected from direct impacts by the existence

Mesa, where domestic sheep grazing occurs in close proximity to bighorn sheep habitat.

Localized beneficial effects would continue to occur through current cooperative efforts including agreements with landowners, counties, and joint agency management efforts. Benefits would be realized on NRA lands and adjacent proposed lands where cooperative efforts are occurring.

Raptors. Protection for raptors within the NRA and other federally managed lands in the proposed lands would continue. The loss and fragmentation of habitat on private lands in the COA adjacent to the NRA would likely continue and possibly increase, resulting in indirect long-term minor to moderate adverse impacts to raptor use within the NRA. Long-term moderate to major adverse impacts are possible on privately owned lands within the proposed lands, resulting from loss of raptor habitat and hunting grounds due to exotic

plant species invasion, development, or other land use.

Fisheries. There would be potential for land use activities that cause sedimentation or pollution runoff, such as development or grazing that occurs outside of the NRA, to negatively impact water quality, resulting in indirect short-term to long-term negligible to minor effects to fisheries within the NRA as well as in land units outside the NRA. Long-term cooperative monitoring efforts including Basin-wide partnerships and cooperation with USGS would continue to provide baseline understanding of water quality conditions. Protection for fisheries resources within the NRA and other federally managed portions of the proposed lands would continue.

Cumulative Impacts

Regionally, some vegetation, riparian communities and wetlands, and wildlife resources would likely experience moderate to major short- to long-term adverse impacts from the continuation or increase in developed land uses, such as residential development, that would result in loss of native vegetation or their displacement by the spread of noxious weeds. Minor to moderate localized long-term beneficial impacts would likely result to resources on lands outside of the NRA and proposed lands from continued current regional cooperative efforts, including resource conservation agreements with land owners, the Joint Agency Management Effort (JAME), and other federal land management activities. When combined with the impacts of Alternative 1, these land development and federal land management activities would result in moderate long-term cumulative adverse impacts.

Conclusion

The displacement of native vegetation communities by noxious weeds that spread from lands adjacent to the NRA would result in long-term minor to moderate adverse impacts to NRA lands. These impacts would be minimized where joint agency management efforts are underway. Where private lands within the proposed lands lack weed

management efforts or occur in land units susceptible to development (such as D, E, and G), long-term moderate to major adverse impacts would result from the spread of noxious weeds or alteration and loss of native vegetation communities.

Riparian and wetland communities in Land Units C (Gunnison River COA) and D (Iola Basin COA) would be susceptible to moderate to major long-term adverse impacts through land use practices, invasion of noxious weeds, or development. Riparian and wetlands within the NRA and other agency lands would largely be conserved, but those communities adjacent to private lands with weed issues would be susceptible to long-term moderate to major adverse impacts.

Long-term minor to moderate adverse impacts to big game habitat and raptor use of the NRA would result from exotic species invasion and continuing habitat fragmentation on adjacent lands, particularly Land Units D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). Loss of habitat due to noxious or exotic plant species invasion, land development, or other land uses would result in long-term moderate to major adverse impacts on elk and mule deer severe winter range and bighorn sheep overall range. Raptor habitat and activities would be similarly affected.

Fisheries within the NRA would not be directly impacted, though water quality impacts from activities outside the NRA could result in indirect short- to long-term negligible to minor effects to fisheries inside and outside the NRA.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others

operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Under Alternative 2, a COA would be established that would encompass private lands within the proposed lands. The NRA would be congressionally authorized to partner with landowners within the COA for the purpose of resource conservation. This would provide enhanced opportunities for beneficial effects to biological resources in the proposed lands through participation by COA landowners in partnerships. In addition, the Proposed Action would include a net addition of 10,040 acres to the NRA from federal and state agency transfers.

Impacts to specific resources are detailed below. Impact intensities would vary with level of participation by landowners in resource conservation activities and the types of tools implemented, ranging from technical assistance and agreements to conservation easements and acquisition. In addition, the potential for development based on ease of access, existing development in the area, and topography also factors into prediction of impact intensity. Resources within land units with the highest potential for development would gain the most benefits from landowner use of tools for resource conservation.

Analysis

Native Vegetation. Within the NRA, management for conservation of native plant communities would continue, and no direct impacts from Alternative 2 would occur. Native vegetation on the net 10,040 acres of land that would be transferred to the NRA from other agencies would not be impacted directly, as management strategies would be similar to those existing, and resource conservation would continue. Impacts from encroachment of noxious weeds from adjacent COA lands into the NRA would vary with degree of use of the resource conservation tools. Under low levels of participation, impacts to native vegetation from displacement by noxious weeds from adjacent land would be similar to

those that are possible under the Alternative 1. Localized, long-term minor to moderate beneficial impacts would result on NRA lands adjacent to areas where agencies and landowners work cooperatively (for example, via JAME) to reduce potential for the spread of noxious weeds. Likewise, in other areas adjacent to private lands within the COA that participate in resource conservation, widespread minor to moderate beneficial effects could occur through reduced spread of exotic species into the NRA. The intensity of beneficial effects would vary with the type of tools that landowners would choose. Beneficial effects would be minor to moderate with participation in technical assistance, general agreements, and incentive payment programs, while participation in conservation easements or acquisition programs would result in moderate to major beneficial effects. In addition, impact intensities would vary with funding for mitigation that may be available to control weed populations within the NRA.

Impacts to private lands within the COA would vary with levels of participation and types of resource conservation tools implemented. With low participation rates, development would most likely occur in Unit E (Sapinero/Blue Mesa COA) and portions of units D (Iola Basin COA) and G (West-End COA), where the development potential is highest. If development would take place in these areas, localized long-term moderate to major adverse impacts would be possible, as under Alternative 1. However, with participation in the congressionally approved tools in these portions of the COA, direct and indirect long-term moderate to major beneficial impacts could result. Impacts to COA lands in land units with low development potential would also be beneficial, though at minor levels, due to lower development potential. Intensity of beneficial impacts to COA land units would vary based on which types of tools would be implemented, from those related to acquisition of interests in land, to lower levels of conservation, such as technical assistance and general agreements.

Riparian and Wetland Communities. Riparian communities within the NRA,

including those on lands transferred from other federal agencies, would continue to be conserved under agency resource management policies. Riparian and wetland communities in the COA portion of the proposed lands include those in Land Units C (Gunnison River COA) and D (Iola Basin COA). Portions of these land units are located in areas with moderate to high development potential. Beneficial protections of most jurisdictional wetlands would continue to occur on all lands under Section 404 of the Clean Water Act. If conservation tools were implemented in private land units, long-term beneficial effects to non-jurisdictional riparian and wetland vegetation communities would likely result. Effects would range from minor to major, depending on the types of tools and level of conservation enacted.

Big Game Wildlife Species. Habitat for elk, mule deer, bighorn sheep, and pronghorn within the NRA, and on agency-transferred lands would benefit from resource conservation tools identified in Alternative 2. Some level of participation by landowners in resource conservation activities would be expected, resulting in minor to major long-term beneficial impacts to big game species by enhanced conservation of habitat within the COA. Table 14 displays the habitat type and acreage of each big game species that would

be conserved within the NRA, as well as the total acres within the COA that could benefit big game habitat if resource conservation tools were implemented.

Habitat located on private lands within the COA would be susceptible to adverse impacts from loss of severe winter range due to noxious or exotic plant species invasion, development, or other land use, as under Alternative 1. Severe winter range for elk and mule deer that is located in Land Units D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) is most vulnerable, due to high or very high development potential of at least a portion of lands within those units. Likewise, bighorn habitat of particular concern is located in Land Units E (Sapinero/Blue Mesa COA) and G (West-End COA) due to high development potential. On the other hand, pronghorn winter habitat within Land Unit D (Iola Basin COA), on the south side of the reservoir, is somewhat protected due to lower development threats. Beneficial impacts resulting from conservation of private lands within the COA would be of higher intensity in these areas versus land units with lower levels of development potential. In addition, conservation easements and fee simple acquisition by NPS would most likely yield moderate to major beneficial impacts,

TABLE 14: BIG GAME HABITATS – PROPOSED ACTION

Big Game Species	Habitat Type	Total Acres of Habitat under NPS Management within Proposed NRA	Acres on Private Lands within COA by Land Unit that Could Benefit from Inclusion in COA
American Elk	Severe Winter Range	25,000	7,890 (Land Units A, D, E, G)
Mule Deer	Severe Winter Range	23,000	8,420 (Land Units A, D, E, G)
Bighorn Sheep	Overall Range	20,500	None
Pronghorn	Winter Range	340	1,125 (Land Unit D)

Land units containing at least some lands with high or very high development potential.

while less intensive tools would result in minor to moderate benefits to big game habitat.

Pronghorn winter range that is located on BLM land south of Iola Basin in land unit B (Blue Mesa Reservoir Agency) would remain protected when that parcel is transferred to the NRA. Additional pronghorn winter range on adjoining private land is somewhat protected due to lower development pressures; however, conservation efforts in cooperation with landowners could still serve to benefit pronghorn and their habitat. An additional threat to bighorn sheep includes the risk of disease transmission to wild herds from domestic sheep populations. This risk would continue in areas such as Fitzpatrick Mesa, where domestic sheep grazing occurs in close proximity to bighorn sheep habitat.

In addition to partnership benefits, localized beneficial effects would continue to occur through current cooperative efforts including agreements with landowners, counties, and JAME. Benefits would be seen on NRA lands and adjacent proposed lands where cooperative efforts are occurring.

Raptors. Protection for raptors and habitat within the NRA, including federal agency transfer lands, would continue. It is likely that participation in these programs would occur, resulting in long-term beneficial impacts within the NRA and COA from reduced loss and fragmentation of adjacent habitats. Intensity of beneficial impacts would range from minor to major depending upon landowner participation and types of tools implemented. Beneficial effects would be minor to moderate with implementation of tools where no interest would be acquired by NPS, and moderate to major when interest is acquired.

Fisheries. There would be no direct impact to fisheries resources within the NRA from implementation of the proposed action. As in Alternative 1, land use activities outside of the NRA could negatively impact water quality, resulting in indirect short-term to long-term negligible to minor effects to fisheries within the NRA as well as in the COA. Implementation of resource conservation tools under Alternative 2 would likely result

in reduced potential for indirect impacts to fisheries from degradation of water quality. Beneficial impacts would likely be negligible to minor due to the low potential for adverse impacts to fisheries resources.

Long-term cooperative monitoring efforts including basin-wide partnerships and cooperation with USGS would continue to provide baseline understanding of water quality conditions. Protection for fisheries resources within the NRA, including federal transfer lands, would continue.

Cumulative Impacts

Cumulative impacts would be similar to Alternative 1, except land development and federal land management activities outside the proposed lands, in combination with decreased impacts of Alternative 2 (due to resource conservation activities) would result in minor to moderate cumulative adverse impacts.

Conclusion

Beneficial impacts to vegetation and wildlife resources would result from landowners' participation in resource conservation partnerships. Benefits would be greatest in those areas of highest development potential, such as Land Units D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). By taking advantage of resource conservation tools that would be available under this alternative, long-term benefits to native vegetation, riparian and wetland communities, big game, and raptor habitat within NRA and COA lands would range from minor to major and those to fisheries resources would range from negligible to minor. Intensity of impacts would be dependent on location, level of landowner participation, and types of tools implemented. However, if development occurs on private lands within the COA, adverse impacts to vegetation and wildlife resources would be similar to those described under Alternative 1.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified

in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

SPECIAL STATUS SPECIES

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for special status species at Curecanti National Recreation Area. Refer to the following box for details.

Negligible: The action would not affect a listed species or habitat at any detectable level, or would be discountable. For purposes of Section 7, for analysis of federally listed species, the determination would be *no effect*.

Minor: Effects on special status species or designated critical habitat would be discountable (i.e., adverse effects are unlikely to occur or could not be easily measured, detected, or evaluated) or are completely beneficial, barely perceptible, and would affect a few individuals of sensitive species or have very localized impacts upon their habitat within Curecanti NRA or the proposed lands. For purposes of Section 7, for analysis of federally listed species, the determination would be *may affect / not likely to adversely affect*.

Moderate: The action would cause measurable effects on (1) a relatively moderate number of individuals within a sensitive species population; (2) the existing dynamics

DESIRED CONDITIONS FOR SPECIAL STATUS SPECIES	SOURCE
Federal and state- listed endangered or threatened species and their habitats are conserved and sustained.	<ul style="list-style-type: none"> - <i>Endangered Species Act</i> - Equivalent state protective legislation - <i>NPS Management Policies 2006</i> - NPS 77, "Natural Resources Management Guidelines"
Conserve the scenery, natural and cultural resources.	- NRA Purpose

Methodology

Information regarding threatened, endangered, and otherwise designated special status species was gathered from consultation with U.S. Fish and Wildlife Service, NPS specialists, and Colorado Division of Wildlife. The methodology described under "General Methodology for Assessing Impacts" was used to determine resource impacts. In addition to the standard impact thresholds, terms used by USFWS during Section 7 consultation are included for use when determining potential impacts to species with federal status.

between multiple species (e.g., predator-prey, herbivore-forage, vegetation structure-wildlife breeding habitat); or (3) a relatively large habitat area or important habitat attributes within the NRA or proposed lands. A sensitive species population or habitat might deviate from normal levels under existing conditions, but would remain indefinitely viable within the NRA. For purposes of Section 7, for analysis of federally listed species, the determination would be *may affect / likely to adversely affect*.

Major: The action would have impacts that would involve a disruption of habitat or

breeding grounds of a sensitive species such that casualty or mortality would result in removal of individuals from the population and the species could be at risk of extirpation from the area. For purposes of Section 7, for analysis of federally listed species, the determination would be *likely to jeopardize the continued existence of a species or adversely modify critical habitat*. This would not necessarily constitute impairment unless the impact to the listed species or its habitat would be affected to the point that the NRA's purpose could not be fulfilled and the species could not be enjoyed by current and future generations of NRA visitors.

Short-term impacts are those that occur for one year or less during the plan implementation. Long-term effects extend beyond plan implementation and last longer than one year in terms of population, community, or designated critical habitat recovery.

Impacts of Alternative 1 – No Action

Analysis of Federal Species

As discussed in the Affected Environment chapter, most of the species mentioned by USFWS in their list of federally listed species in the vicinity of the NRA were not carried forward for analysis in this chapter due to a lack of occurrence of these species within the evaluated land units of the NRA. The only federally listed species carried forward for analysis is the bald eagle.

Bald eagle: There would be no direct effect to bald eagles or their habitat within the NRA under Alternative 1. Protection for bald eagle within the NRA and other federally managed lands would continue. However, the loss and fragmentation of bald eagle habitat and hunting grounds adjacent to NRA lands due to development or other land use would likely continue and possibly increase. This would result in indirect long-term minor to moderate impacts to bald eagle activity within the NRA, and direct and indirect long-term moderate adverse impacts on proposed lands outside the NRA. Therefore, implementation of Alternative 1 may affect and would likely adversely affect bald eagle or its habitat within

the NRA or surrounding proposed lands, particularly if development occurred at a high rate, as is possible in some areas of Land Units D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA).

Analysis of State Species

American peregrine falcon: There would be no direct impact to peregrine falcons or their habitat within the NRA under Alternative 1. Protection for peregrine falcon habitat within the NRA and on other federally managed lands within the proposed lands would continue. However, the loss and fragmentation of habitat and hunting grounds due to development, or other land use adjacent to NRA lands would likely continue and possibly increase resulting in indirect long-term minor to moderate impacts to Peregrine Falcon use within the NRA. Since the falcon tends to use the canyons, and since the canyons are under federal protection, there would probably be minor, or at most, moderate direct and indirect long-term adverse impacts to peregrine falcons on lands outside the NRA.

Colorado River cutthroat trout. No direct effect would occur to the Colorado River cutthroat trout within the NRA or other federally managed lands within the proposed lands. Degraded water quality outside of the NRA would potentially lead to minor to moderate adverse impacts to the species, both inside and outside the NRA. Baseline understanding of water quality conditions would continue through long-term cooperative monitoring efforts including Basin-wide partnerships and cooperation with USGS.

Greater sandhill crane: There would be no direct impact to the greater sandhill crane or its habitat within the NRA under Alternative 1. Management for protection of this and other wildlife species would continue within the NRA and other federally managed lands. However, the loss and fragmentation of habitat adjacent to NRA lands due to development or other land use would likely continue and possibly increase, resulting in indirect long-term minor adverse impacts to

greater sandhill crane use within the NRA, and direct and indirect long-term moderate adverse impacts outside of the NRA.

Gunnison Sage-grouse. There would be no direct impacts to Gunnison Sage-grouse or habitat within the NRA. Protection would continue on approximately 12,000 acres of Sage-grouse habitat within the NRA and on other federally managed lands. However, the fragmentation of habitat adjacent to these lands would likely continue and possibly increase, resulting in indirect long-term minor to moderate adverse impacts to Gunnison Sage-grouse use within the NRA.

On privately owned lands within the proposed lands, long-term moderate to major adverse impacts are possible on up to 1,700 acres of Sage-grouse habitat from loss of habitat due to exotic plant species invasion, development, or other adverse land uses. Habitat within the NRA is not adequate to sustain a viable population without support from resources that are available on adjacent habitat outside of the NRA. Localized minor to moderate beneficial effects would occur through current cooperative efforts with the Gunnison Sage-grouse Working Group and the Gunnison Sage-grouse Rangewide Conservation Plan. Benefits would be seen on NRA lands and adjacent outside lands where cooperative efforts are occurring.

Implementation of Alternative 1 may affect and would likely adversely affect Gunnison Sage-grouse or its habitat. Though moderate to major impacts are possible, continuing efforts related to the Gunnison Sage-grouse Working Group would likely mitigate some of these impacts within the proposed lands.

Long-billed curlew: There would be no direct impact to the long-billed curlew or its habitat within the NRA from Alternative 1. Protection for long-billed curlew habitat within the NRA and other federally managed lands would continue. The loss and fragmentation of habitat due to development, or other land use adjacent to NRA lands would likely continue and possibly increase resulting in indirect long-term minor impacts to long-billed curlew use within the NRA and

direct and indirect long-term minor adverse impacts on proposed lands.

Analysis of NRA Sensitive Species

Great blue heron: There would be no direct impact to the great blue heron or its habitat within the NRA from implementation of Alternative 1. Protection for great blue heron habitat within the NRA would continue. On private lands within the proposed lands, loss and fragmentation of habitat would likely continue and possibly increase, resulting in indirect long-term minor to major adverse impacts to great blue heron use within and outside of the NRA.

Within Land Unit C, direct and indirect long-term moderate to major adverse impacts are possible on lands from continued suppression of cottonwood tree establishment and disturbance of the rookeries by land use activities. Given the rarity of the rookeries in the general area, these impacts could threaten the long-term viability of the great blue heron in Gunnison County.

Gunnison's prairie dog: There would be no direct impact to the Gunnison's prairie dog or its habitat within the NRA from implementation of Alternative 1. Protection for the species within the NRA would continue. On private lands within the proposed lands, loss and fragmentation of habitat would likely continue and possibly increase, resulting in indirect long-term minor to moderate adverse impacts to the Gunnison's prairie dog and its habitat.

Sensitive Plants: Special status plant species of interest to this analysis include adobe thistle (Rocky Mountain thistle), Black Canyon gilia, Colorado desert parsley, Gunnison milkvetch, hanging garden Sullivantia, and skiff milkvetch. Within the NRA, no direct effects would occur to any special status plant species from implementation of Alternative 1. Within privately owned areas within the proposed lands, direct or indirect long-term minor to moderate adverse impacts could result from loss of individuals or populations related to development or other land use.

Cumulative Impacts

Adverse cumulative impacts to special status species include the continued existence of exotic fish species in rivers and tributaries and the effects on Colorado River cutthroat trout viability. Beneficial management practices and conservation efforts on federal lands and properties with conservation easements (outside the proposed lands) would minimize adverse impacts to special status species where applicable. Cooperative efforts between agencies would also benefit certain species. An example is the Gunnison Sage-grouse Rangewide Conservation Plan that outlines the strategy of the Gunnison Sage-grouse Working Group to increase grouse populations in the Gunnison Basin. The management strategies and monitoring activities set forth by the cooperative group of federal, state, and county agencies and organizations would result in moderate to major beneficial impacts to such species. The above actions to manage listed species on a regional basis in combination with other cumulative effects and with Alternative 1 impacts, would result in minor to moderate adverse impacts to special status species in the region.

Conclusion

Implementation of Alternative 1 would not cause direct effects to any special status species or associated habitats within the NRA. However, loss and fragmentation of habitats would continue and possibly increase in private land units outside the NRA, impacting species and habitats within the proposed lands. Federal species that may be affected and would likely be adversely affected include the bald eagle. Likewise, state listed species including the American peregrine falcon, Colorado River cutthroat trout, greater sandhill crane, and Gunnison Sage-grouse, would experience minor to moderate adverse impacts to individuals or habitat within the proposed lands; while impacts to long-billed curlew would be minor. The great blue heron and Gunnison's prairie dog, both NRA sensitive species, would also be adversely affected by indirect impacts from habitat alteration

or disturbance. Impacts to heron would be moderate to major, while those to prairie dogs would be minor to moderate. Sensitive plant individuals or populations may be affected and could be lost due to activities outside the NRA, potentially resulting in minor to moderate adverse impacts to adobe thistle (Rocky Mountain thistle), Black Canyon gilia, Colorado desert parsley, Gunnison milkvetch, hanging garden Sullivantia, and skiff milkvetch.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Analysis

There would be no direct impact to any federal, state, or NRA sensitive species or associated habitats from implementation of Alternative 2. Under low levels of participation by landowners in the COA in land protection plans, impacts could be similar to those described under Alternative 1. However, some participation in partnerships and use of land protection tools would be expected to yield direct and indirect minor to major long-term beneficial impacts to federal species such as bald eagle due to increased protection of habitat. The potential for environmentally insensitive development, or other high impact land use on private lands within the COA would decrease, reducing the loss and fragmentation of habitats for bald eagle, especially on Land Units D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). Federal special status

species or their habitats may be affected, but are not likely to be adversely affected under Alternative 2.

State listed species such as the American peregrine falcon, Colorado River cutthroat trout, greater sandhill crane, Gunnison Sage-grouse, and long-billed curlew, would also benefit from decreased habitat loss and fragmentation and increased conservation. Approximately 13,000 acres of Gunnison Sage-grouse habitat would be protected within the NRA; and an additional 1,700 acres of habitat would potentially be conserved on private property in Land Units C, D, and E through partnerships and use of resource conservation tools. These species and associated habitats would experience minor to moderate long-term beneficial impacts under Alternative 2.

The NRA sensitive great blue heron and its habitat would likely experience minor to major beneficial impacts under Alternative 2 through potential long-term conservation of the heron rookery in Land Unit C (Gunnison River COA), and other riparian habitat in Land Unit D (Iola Basin COA). In addition, the Gunnison's prairie dog would benefit from conservation of COA Land Units C and D (Gunnison River and Iola Basin), as well as Land Unit H, which contain overall range for the species.

Sensitive plant species, including adobe thistle (Rocky Mountain thistle), Black Canyon gilia, Colorado desert parsley, Gunnison milkvetch, hanging garden Sullivantia, and skiff milkvetch, would likely experience minor to moderate beneficial impacts under Alternative 2 from reduced potential for loss of individuals or populations from development or other land use.

The intensity of beneficial impacts on private COA lands would vary with the level of partnership and the types of conservation tools implemented. These beneficial impacts would also carry over onto adjacent public lands within the NRA.

Cumulative Impacts

Continued regional cooperative efforts between federal, state, and local agencies would contribute moderate to major beneficial impacts to certain species such as the Gunnison Sage-grouse. The contribution from Alternative 2 to cumulative effects would also be beneficial, though some adverse impacts could still occur outside of the NRA and the proposed lands due to development and other land use activities. Overall, cumulative effects to special status species in the region would be minor to major beneficial.

Conclusion

Implementation of Alternative 2 would benefit special status wildlife species and therefore would not adversely affect the bald eagle, Gunnison Sage-grouse, Colorado River cutthroat trout, American peregrine falcon, greater sandhill crane, long-billed curlew, great blue heron, or other sensitive species. Special status plant species would also experience beneficial impacts. Through decreased potential for development and other land use activities that are detrimental to habitats, all special status species within the proposed lands would have opportunities for increased conservation and potential for populations to expand. Benefits would be greatest on Land Units D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA), where development potential is currently the highest. However, resources on other private lands within the COA would benefit as well.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

NATURAL LIGHTSCAPE (NIGHT SKY)

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for natural lightscapes at Curecanti National Recreation Area. Refer to the following box for details.

Impacts of Alternative 1 – No Action

Analysis

Except for Reclamation's primary jurisdiction areas around the dams, natural lightscapes within the NRA would continue to be conserved through management policies that limit artificial light, especially in natural areas. Private portions of the proposed lands

DESIRED CONDITIONS FOR NATURAL LIGHTSCAPE	SOURCE
Artificial outdoor lighting will be limited to basic safety, security, and operational requirements, and will be shielded when possible. NPS will coordinate with neighbors and local government agencies to find ways to minimize the intrusion of artificial light into the night scene in the NRA, in an effort to conserve this segment of the natural resource.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i> - NRA Purpose
Conserve the scenery, natural and cultural resources.	- NRA Purpose

Methodology

The analyses of impacts include lands within the NRA as well as within the larger area of proposed lands, as stated. The following impact thresholds were established to measure the relative changes in natural lightscapes as a result of the alternative actions.

Negligible: The impact would be barely detectable, would not occur in primary resources areas, or would affect few visitors.

Minor: The impact would be slight but detectable, would not occur in primary resource areas, or would affect few visitors.

Moderate: The impact would be readily apparent, would occur in primary resource areas, or would affect many visitors.

Major: The effect would be severely adverse or exceptionally beneficial, would occur in primary resource areas, or would affect the majority of visitors.

surrounding the NRA that remain in their current undeveloped condition would also continue to contribute to the existing high quality night sky surrounding the NRA.

Cooperation from neighbors and local government agencies would minimize the intrusion of artificial light from adjacent areas into the night scene in the NRA. There are currently greater restrictions pertaining to outdoor lighting within the Gunnison County Land Use Resolution, and no substantial restrictions pertaining to lighting associated with development within Montrose County.

With the ever-increasing probability that privately owned portions of the proposed lands would eventually be developed, it is a reasonable assumption that more and more outdoor lights will be installed along with the developments. In general, a single light source may not be a significant problem. However, the accumulative effect of additional development could result in long-term, minor to moderate, adverse impacts to the night sky, depending upon factors such as decisions by

landowners, county land use regulations, and population growth.

Land Units A (CO 92 COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) would be more likely impacted by development in the near future. This is due to their accessibility from US 50, CO 92, and CO 149, and local roads such as Soap Creek Road; and to the existence of other development in the vicinity. Rapid expansion and commercial growth in Montrose and to a lesser extent Delta are a direct threat to Black Canyon. The terrain in the Montrose area does deflect some of the light generated in the city at night. Black Canyon and Curecanti currently offer popular night sky programs several times through out the year and work with local astronomical societies to host star gatherings in the parks. Black Canyon and Curecanti are two of the darkest national parks measured in southwestern Colorado.

Scientific research regarding elements of night sky is on-going. As the NPS collects and analyzes data, that information will be shared with neighbors and local officials to develop complementary approaches to night sky conservation through a variety of environmentally friendly techniques in urban and residential site planning and design.

Distance is the primary component in light pollution. Light diminishes to the negative 2.5 power of distance, so that a town of 10,000 10 miles away will appear 6x brighter than a town of 10,000 20 miles away. This principal makes the distance to specific areas of the park an important factor.

Topography also plays an important role. A town like Gunnison at a high elevation will appear to be brighter than a town in a valley or obscured by mountains. A site down in a canyon will be darker than one up on the mesa.

A third factor is the brightness of the town's lights. There can be significant gains or losses in environmental quality depending on how bright the lights a town chooses to install and whether those lights are shielded. Vail, Colorado for example, has very subdued lights

and approximately 1,000 lumens per capita of installed outdoor lights. In contrast, Las Vegas has approximately 5,000 lumens per capita.

Degradation of the night sky condition also depends on other factors such as the growth rate of the surrounding communities; types of industries; and the conservation efforts employed to reduce night light. Given the residential growth within the state and the demonstrated increase statewide in light pollution, a threat does exist to the quality of night sky experienced in this region.

Night skies also play a role in defining wilderness characteristics found in places such as the Black Canyon Wilderness and nearby USFS Wilderness areas. Much remains to be understood about the possible ecological disruption in these areas due to nocturnal habitat loss as a result of increased night light.

Cumulative Impacts

Conservation and planning activities occurring throughout the proposed lands within Gunnison and Montrose Counties could result in a variety of impacts to local and regional night sky resources. The Gunnison County Comprehensive Plan is expected to evaluate a wide range of factors in developing a strategy for growth in the Curecanti area. Efforts from the Comprehensive Plan could result in long-term beneficial impacts on night sky resources adjacent to the NRA by considering such resources in the development and implementation of recommendations.

Long-term management plans by agencies such as the U.S. Forest Service and BLM would continue to conserve night sky values. This would result in beneficial impacts.

CDOT/FHWA highway modernization plans could influence development along the US 50 corridor, further affecting the highway corridor and its aesthetics. Such development could result in long-term, localized minor to moderate adverse impacts on the night sky resource.

The long-term minor to moderate adverse impacts to night sky values that could result

from Alternative 1 from potential development and land use in the proposed lands surrounding the NRA, when combined with the potential adverse and beneficial impacts of other regional planning and conservation efforts, could result in cumulative long-term minor to major adverse impacts to natural lightscapes in the region.

Conclusion

Except for Reclamation's primary jurisdiction areas around the dams, night sky values within the NRA and on adjacent federal and state lands would continue to be conserved through federal and state land management activities. Private portions of the proposed lands that remain in their current undeveloped condition would also continue to contribute to the existing high-quality natural landscape in the area.

However, private portions of the proposed lands surrounding the NRA would continue to be increasingly subject to future development and other land uses in Alternative 1 that could interfere with night sky values within the NRA. Even with county regulations, this could result in long-term minor to moderate adverse impacts to the natural lightscape/night sky resource.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Analysis

As in Alternative 1, except for Reclamation's primary jurisdiction areas around the

dams, night sky values within the NRA and on other adjacent federal and state lands would continue to be conserved through implementation of federal and state land management plans. Thus impacts to natural lightscape resources on public lands would be the same in Alternatives 1 and 2.

On private portions of the COA, the availability of resource conservation tools to private landowners, and increased congressionally authorized efforts on the part of NPS to conserve resources, would help maintain existing night sky quality. Should landowners implement resource tools such as conservation easements or fee simple acquisition, long-term minor to moderate beneficial impacts could occur, depending upon the degree of development or conservation. However, the availability of such tools would increase the likelihood that some or all of the resources within the COA would be conserved.

Some of the areas that have more potential for private development, and in turn, more potential for adverse impacts on night sky values, are located in Land Units A (CO 92 COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). These areas have been identified in Alternative 1, and include areas such as Sapinero Mesa, Soap Mesa, Blue Mesa, and Cimarron.

In general, there is expected to be a long-term minor to moderate beneficial impact on night sky resources through implementation of Alternative 2. This would result from the creation of the COA and the authorization and ability of NPS to work in more meaningful partnerships with private landowners within the COA; increased cooperation between NPS and its neighbors; and the implementation of the tools for resource conservation. Also, working with local government, visible night sky improvement might occur with the implementation of a lighting protocol that reduces light emissions (NPS, Night Sky Quality Monitoring Report, Prepared by Chad Moore, November 8, 2006).

Cumulative Impacts

Cumulative impacts related to the actions in Alternative 2 would be more beneficial than Alternative 1. Many local and regional planning and conservation activities would continue to result in long-term, minor to major beneficial impacts to local and regional night sky values. Without cooperation of private landowners in the COA, the overall cumulative impact of Alternative 2 could be adverse, as in Alternative 1. However, with the cooperation of private landowners, the potentially beneficial impacts associated with the resource conservation tools suggested in Alternative 2 could result in long-term, moderate, beneficial, cumulative impacts. The overall impact of these combined efforts of federal, state, and local agencies, as well as private landowners that conserve the natural lightscape resources on their land would be positive and widespread.

Conclusion

Some of the areas where there is more potential for development, and in turn, more potential for adverse impacts on natural lightscapes, are located on private property in Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). Conservation of these areas would result in long-term minor to moderate beneficial impacts to both local and NRA-wide lightscapes for NRA visitors and

residents alike. The availability of resource conservation tools to private landowners, and congressionally authorized increased efforts on the part of NPS to work in partnership with private landowners to conserve natural lightscapes within the COA, would help maintain existing night sky quality.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

NATURAL SOUNDSCAPE**Guiding Policies and Regulations**

Current laws and policies require that certain desired conditions be achieved for natural soundscapes at Curecanti National Recreation Area. Refer to the following box for details.

DESIRED CONDITIONS FOR NATURAL SOUNDSCAPE	SOURCE
In those areas of the NRA where visitors have the opportunity to experience natural quiet and solitude, recreational use is managed to preserve this condition. Noisier conditions are accepted along roads, in areas surrounding the dams and related Reclamation operations and facilities, and where motorized recreational pursuits, such as motor boating and snowmobiling are allowed.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i> - DO 47, "Sound Preservation and Noise Management"
Conserve the scenery, natural and cultural resources.	- NRA Purpose

Methodology

The analyses of impacts include lands within the NRA as well as within the larger area of proposed lands, as stated. The following impact thresholds were established to measure the relative changes in natural soundscapes as a result of the alternative actions.

Negligible: The impact would be barely detectable, would not occur in primary resource areas, or would affect few visitors.

Minor: The impact would be slight but detectable, would not occur in primary resource areas, or would affect few visitors.

Moderate: The impact would be readily apparent, would occur in primary resource areas, or would affect many visitors.

Major: The effect would be severely adverse or exceptionally beneficial, would occur in primary resource areas, or would affect the majority of visitors.

Impacts of Alternative 1 – No Action

Analysis

Except where motorized recreational vehicles and boats are authorized, and except for Reclamation's primary jurisdiction areas around the dams, natural soundscape within the NRA would continue to be conserved through management policies that limit manmade sounds in certain areas. The locations within the NRA that currently offer the best opportunities for solitude and enjoyment of natural sounds would continue to do so. Private portions of the proposed lands surrounding the NRA that remain in their current undeveloped condition would also continue to contribute to the existing high quality of the soundscape surrounding the NRA.

Coordination with neighbors and local government agencies would minimize the intrusion of excessive noise from adjacent areas and activities into quiet areas of the NRA. However, there is an increasing probability that privately owned portions of the proposed lands would experience

property development and other land uses that could interfere with natural ambient sound and overall soundscape values. Increased development would result in increased traffic and other activities that could impact the soundscape of the region. This could result in long-term minor to moderate adverse impacts to the NRA's natural soundscape depending upon factors such as decisions by landowners, county land use regulations, and population growth.

Land Units A (CO 92 COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) would be more likely to be impacted by development in the near future, and are therefore more likely to experience adverse impacts on the natural soundscape. This is due to their accessibility from US 50, CO 92, and CO 149, and local roads such as Soap Creek Road; and to the existence of other development in the vicinity.

Cumulative Impacts

Conservation and planning activities occurring throughout the proposed lands and within Gunnison and Montrose Counties could result in a variety of impacts to local and regional soundscape values. The Gunnison County Comprehensive Plan is expected to evaluate a wide range of factors in developing a strategy for growth in the Curecanti area. Efforts from the Comprehensive Plan could result in long-term beneficial impacts on soundscape resources adjacent to the NRA by considering such resources in the development and implementation of recommendations.

Long-term management plans by agencies such as the U.S. Forest Service and BLM would continue to be in place. This would result in beneficial impacts to the soundscape resource.

CDOT/FHWA highway modernization plans could influence development along the US 50 corridor, further affecting the highway corridor and its aesthetics, including the soundscape. Such development could result in long-term, localized minor to moderate adverse impacts on the area's natural soundscape.

The long-term minor to moderate adverse impacts to soundscape values that could result from potential development and land use in the proposed lands surrounding the NRA under Alternative 1, when combined with the potential adverse and beneficial impacts of other regional planning and conservation efforts, could result in cumulative long-term minor to moderate adverse impacts to natural soundscapes in the region.

Conclusion

Except where motorized recreational vehicles and boats are authorized, and except for Reclamation's primary jurisdiction areas around the dams, the soundscape within the NRA and on other adjacent federal and state lands would continue to be conserved through federal and state land management activities. Private portions of the proposed lands that remain in their current undeveloped condition would also continue to contribute to maintaining the natural soundscape in the area.

However, private portions of the proposed lands surrounding the NRA would continue to be increasingly subject to future development and other land uses in Alternative 1 that could interfere with soundscape values within the NRA. This could result in long-term, minor to moderate adverse impacts to natural soundscapes.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Analysis

As in Alternative 1, except where motorized recreational vehicles and boats are authorized, and except for Reclamation's primary jurisdiction areas around the dams, natural soundscape values within the NRA and on other adjacent federal and state lands would continue to be conserved through implementation of federal and state land management plans. Thus impacts to such resources on public lands would be the same in Alternatives 1 and 2.

On private portions of the COA, the availability of resource conservation tools to private landowners, and increased congressionally authorized efforts on the part of the National Park Service to conserve resources, would help maintain existing soundscape quality. Should landowners implement resource conservation tools such as conservation easements or fee simple acquisition, long-term minor to moderate beneficial impacts could occur, depending upon the degree of development or conservation. However, the availability of such tools would increase the likelihood that some or all of the resources within the COA would be conserved, and the natural soundscapes would be preserved or enhanced.

Some of the areas that have more potential for private development, and in turn, more potential for adverse impacts on natural soundscapes, are located in Land Units A (CO 92 COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). These areas have been identified in Alternative 1, and include areas such as Sapinero Mesa, Soap Mesa, Blue Mesa, and Cimarron.

In general, there is expected to be a long-term minor to moderate beneficial impact on soundscape resources through implementation of Alternative 2. This would result from the creation of the COA and the authorization and ability of the National Park Service to work in more meaningful partnerships with private landowners within the COA; increased cooperation between NPS

and its neighbors; and the implementation of the tools for resource conservation.

Cumulative Impacts

Cumulative impacts related to the actions in Alternative 2 would be more beneficial than Alternative 1. Many local and regional planning and conservation activities would continue to result in long-term, minor to major beneficial impacts to local and regional soundscape values. Without cooperation of private landowners in the COA, the overall cumulative impact of Alternative 2 could be adverse, as in Alternative 1. However, with the cooperation of private landowners, the potentially beneficial impacts associated with the resource conservation tools suggested in Alternative 2 could result in long-term, moderate, beneficial, cumulative impacts on the natural soundscape. The overall impact of these combined efforts of federal, state, and local agencies, as well as private landowners that conserve the natural soundscape resources on their land, would be positive and widespread.

Conclusion

Some of the areas that have more potential for development, and in turn, more potential for adverse impacts on the natural soundscape, are located on private property in Land Units

A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). Conservation of these areas would be beneficial to both local and NRA-wide soundscapes for visitors and residents alike. The availability of resource conservation tools to private landowners, and congressionally authorized increased efforts on the part of the National Park Service to work in partnership with private landowners to conserve natural soundscapes within the COA, would help maintain and/or enhance existing soundscape quality. This could result in long-term, minor to moderate beneficial impacts to natural soundscapes.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

CULTURAL RESOURCES

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for cultural resources at Curecanti National Recreation Area. Refer to the following box for details.

“Protection of Historic Properties”), impacts to cultural resources were identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that were either listed on or eligible to be listed on the National Register of Historic Places; (3) applying the criteria of adverse

DESIRED CONDITIONS FOR CULTURAL RESOURCES	SOURCE
Conserve the natural and historic objects within the NRA unimpaired for the enjoyment of future generations.	- NPS Organic Act of 1916
Preserve, conserve, and encourage the continuation of the diverse traditional prehistoric, historic, ethnic, and folk cultural traditions that underlie and are a living expression of our American heritage.	- National Historic Preservation Act
Protect and preserve for American Indians access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.	- American Indian Religious Freedom Act
Secure, for the present and future benefit of the American people, the protection of archeological resources and sites that are on public lands.	- Archeological Resources Protection Act
Accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners; and avoid adversely affecting the physical integrity of such sacred sites.	- Executive Order 13007
The National Park Service must be respectful of these ethnographic resources, and carefully consider the effects that NPS actions may have on them.	- NPS <i>Management Policies 2006</i>
Conserve the scenery, natural and cultural resources, and wildlife.	- NRA Purpose

Methodology and Assumptions

In this assessment, impacts to cultural resources (archeological resources and historic structures) are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations. These impact analyses are intended, however, to comply with the requirements of both the *National Environmental Policy Act* and Section 106 of the *National Historic Preservation Act* (NHPA). In accordance with the Advisory Council on Historic Preservation’s regulations implementing Section 106 (36 CFR 800,

effect to affected cultural resources either listed on or eligible to be listed on the National Register; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council’s regulations, a determination of either *adverse effect* or *no adverse effect* must also be made for affected, National Register eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualify it for inclusion on the National Register (e.g., diminishing the integrity of the

resource's location, design, setting, materials, workmanship, feeling, or association). Adverse effects also include reasonably foreseeable effects caused by the Proposed Action that would occur later in time, be farther removed in distance or be cumulative (36 CFR 800.5, "Assessment of Adverse Effects"). A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion on the National Register.

CEQ regulations and DO 12 also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g., reducing the intensity of an impact from major to moderate or minor). Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation only under the *National Environmental Policy Act*. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Although adverse effects under Section 106 may be mitigated, the effect remains adverse.

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such research questions. An archeological site(s) can be eligible to be listed on the National Register of Historic Places if the site(s) has yielded, or may be likely to yield, information important in prehistory or history. An archeological site(s) can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national (National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*).

For purposes of analyzing impacts to archeological resources, thresholds of change for the intensity of an impact are based upon the potential of the site(s) to yield information important in prehistory or history, as well as the probable historic context of the affected site(s):

Negligible: The impact is at the lowest level of detection or barely measurable, with no perceptible consequences, either adverse or beneficial, to archeological resources. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor Adverse Impact: The impact would affect an historic structure, site, or district, or an archeological site with the potential to yield information important in prehistory or history. The historic context of the affected site(s) would be local. For purposes of Section 106, the determination of effect would be *adverse effect*.

Minor Beneficial Impact: A site would be preserved in its natural state. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate Adverse Impact: The impact would affect an archeological site with the potential to yield information important in prehistory or history. The historic context of the affected site would be statewide. For a National Register eligible or listed historic structure, or historic district, the impact is readily apparent, and/or changes a character-defining feature(s) of the resource to the extent that its National Register eligibility is jeopardized. For purposes of Section 106, the determination of effect would be *adverse effect*.

Moderate Beneficial Impact: The site would be stabilized. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Major Adverse Impact: The impact would affect an archeological site with the potential to yield important information about human history or prehistory. The historic context of the affected site would be national. The impact is severe or of exceptional benefit for eligible or listed historic structures or historic districts. The impact changes a character-defining feature of the resource, diminishing the integrity of a National Register eligible or listed resource to the extent that it is no longer eligible or listed on the National Register. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major Beneficial Impact: Active intervention would be taken to preserve the site. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Impacts of Alternative 1 – No Action

Analysis

Under this alternative the area contained within the existing NRA would remain essentially unchanged, except for occasional future changes that Congress might authorize on a piece-by-piece basis. NPS would continue best management practices for cultural resources as agreed to with Reclamation, resulting in short and long-term direct, minor beneficial impacts. Limited technical assistance would be available from NPS to private landowners interested in conserving cultural resource values on their private properties. The potential for development on lands outside the NRA, primarily on Land Units C (Gunnison River COA) and G (West-End COA), could result in indirect short and long-term, minor to moderate adverse impacts to cultural resources within the NRA by alterations to the scene or the context of the resource.

Continuing federal protection of the lands inside the NRA would continue to reduce the potential for illegal collection or damage to cultural resources but would have no effect on those resources outside the NRA.

Cumulative Impacts

Even with the potential for continued federal protection of lands within the NRA, activities on neighboring lands would still have the potential for indirect long-term minor to moderate adverse cumulative impacts. On a cumulative basis, potential impacts from illegal collecting or damaging NRA resources that are readily accessible from neighboring lands would likely occur with the advent of development on surrounding private lands.

Conclusion

Federal actions within the NRA would result in short and long-term direct minor beneficial impacts. Potential development

on Land Units C (Gunnison River COA) and G (West-End COA) could result in indirect minor to moderate adverse impacts to cultural resources within the NRA, by altering the scene or context of the resource.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Analysis

The negotiation of conservation easements and/or the addition of lands to the NRA would have short and long-term minor beneficial impacts on cultural resources both within the NRA and on public and private lands neighboring the NRA. The same would be true of railroad features in Land Unit C (Gunnison River COA). Land Unit G (West-End COA) would realize a short and long-term minor beneficial impact, both within the NRA as well as outside, with the increased conservation of the historic town-site and the railroad resources associated with that location.

Cumulative Impacts

On a cumulative basis, implementation of Alternative 2 could result in minor beneficial impacts to those cultural resources both within and outside the proposed NRA boundary through additional federal management and access to federal assistance.

Conclusion

The direct short- and long-term minor beneficial impact resulting from federal management practices within the NRA coupled with the beneficial impacts associated

with potential conservation easements and/or additions of private land to the NRA would result in direct short- and long-term minor beneficial impacts inside and outside the proposed NRA boundary.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Section 106 Summary

This Environmental Impact Statement provides detailed descriptions of two alternatives (including a no-action alternative) and analyzes the potential impacts associated with possible implementation of each alternative.

Application of best federal land management practices to lands outside the NRA as described under Alternative 2 would improve conservation of cultural resources either by direct acquisition or landowner participation in conservation easements or other partnered arrangements. Common management practices could result in negligible to minor benefits (*no adverse effect*) for cultural resources both within and outside the proposed NRA boundary.

To help reduce impacts on cultural resources, resources would continue to be monitored on a regular basis. Vulnerable resources listed on or potentially eligible for the National Register of Historic Places would have priority for conservation measures. The NRA staff would continue to actively work with tribes to conserve ethnographic resources and privacy for traditional activities. Appropriate resource management actions could include monitoring and site stabilization; and visitor management

actions could include signing, ranger patrols, and interpretive messages.

In cases where it was determined there was a potential for adverse impacts (as defined in 36 CFR 800) to cultural resources listed on or eligible for listing on the National Register of Historic Places, the National Park Service would coordinate with the State Historic Preservation Officer of Colorado to determine the level of effect on the property, and to determine what mitigation would be needed.

The NRA staff would continue to educate visitors regarding archeological and ethnographic site etiquette to provide long-term conservation for surface artifacts, architectural features, and traditional activities. If necessary, additional mitigation measures would be developed in consultation with the state historic preservation officer and the three American Indian tribes who are most affiliated with the NRA: Northern Ute; Southern Ute; and Ute Mountain Ute. These three tribes will receive copies of this Environmental Impact Statement for review and comment. It will also be sent to the Colorado State Historic Preservation Officer and to the Advisory Council on Historic Preservation for review and comment as part of the Section 106 compliance process.

Pursuant to 36 CFR 800.5, implementing regulations of the *National Historic Preservation Act* (revised regulations effective January 2001), addressing the criteria of effect and adverse effect, the National Park Service finds that the implementation of the Proposed Action in the Curecanti Resource Protection Study, with identified mitigation measures, would be beneficial, and would not result in any new adverse effects (*no adverse effect*) to archeological or historic resources currently identified as eligible for or listed on the National Register of Historic Places.

VISITOR USE, UNDERSTANDING, AND ENJOYMENT

RECREATIONAL OPPORTUNITIES

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for recreation opportunities at Curecanti National Recreation Area. Refer to the following box for details.

access for recreational use and potential overlook sites, could occur on many land units within the proposed lands, irrespective of ownership or managing agency. The analyses of impacts include lands within the NRA and lands within the proposed lands. Cumulative impacts include effects from the alternatives to lands outside of the proposed lands, as well as effects from unrelated actions to lands within the proposed lands. Impact intensities are as follows:

Negligible: Visitors would likely be unaware of any effects associated with implementation of the

DESIRED CONDITIONS FOR RECREATIONAL OPPORTUNITIES	SOURCE
Provide outstanding recreational opportunities.	<ul style="list-style-type: none"> - NPS Organic Act of 1916 - NRA Mission
Visitors have opportunities to enjoy the NRA in ways that leave resources unimpaired for future generations.	<ul style="list-style-type: none"> - NPS Organic Act of 1916 - NPS <i>Management Policies 2006</i>
Provide public recreational facilities on lands withdrawn or acquired for the development of Colorado River Storage Project and Uncompahgre Project, and allow for recreational use and enjoyment of Reclamation lands and water areas in a manner that is consistent with the projects' purposes.	<ul style="list-style-type: none"> - Reclamation law, as supplemented and amended
Visitor facilities and services are provided for the safe and full use and enjoyment of the area for recreational purposes.	<ul style="list-style-type: none"> - Memorandum of Agreement between NPS and Reclamation, February 11, 1965
Recreational uses are promoted and regulated. Basic visitor needs are met in keeping with NRA purposes.	<ul style="list-style-type: none"> - NPS Organic Act of 1916 - Title 36, Code of Federal Regulations - NPS <i>Management Policies 2006</i>
Provide for the enjoyment of the scenery and the natural and historic objects and the wildlife therein.	<ul style="list-style-type: none"> - NPS Organic Act of 1916

Methodology

This section analyzes the impacts of alternatives on recreation opportunities, including visitor use and enjoyment within the proposed lands. All available information on potential recreation opportunities was compiled. Where possible, map locations were consulted. Analyzed activities, including

alternative. There would be no noticeable change in visitor use and experience or in any defined indicators of visitor satisfaction or behavior.

Minor: Changes in visitor use and/or enjoyment would be slight but detectable, but would not appreciably limit or enhance critical characteristics of the visitor experience. Visitor satisfaction would remain stable.

Moderate: Few critical characteristics of the desired visitor experience and enjoyment would change, and/or the number of participants engaging in an activity would be altered. The visitor would be aware of the effects associated with implementation of the alternative and would likely be able to express an opinion about changes. Visitor satisfaction would begin to either decline or increase as a direct result of the effect.

Major: Multiple critical characteristics of the desired visitor experience and enjoyment would change, and/or the number of participants engaging in an activity would be greatly reduced or increased. The visitor would be aware of the effects associated with implementation of the alternative and would likely express a strong opinion about the change. Visitor satisfaction would markedly decline or increase. The impact is severely adverse or exceptionally beneficial, and/or would affect the majority of visitors.

Short-term recreation impacts are immediate and do not occur over multiple visitor seasons. Long-term impacts persist beyond one year or visitor season.

Because this topic does not evaluate the potential impacts on natural or cultural resources contained within the NRA, impairment is not evaluated.

Impacts of Alternative 1 – No Action

Analysis

Camping and picnicking. Within the NRA, management of camping and picnicking activities would continue. Adverse impacts would include continued unmet recreation potential for certain types of camping activities. Continuation of existing management would result in no additional motorized restrictions or seasonal access to sensitive habitat areas, adversely impacting the recreational and visitor experience of some visitors and benefiting others.

Direct and indirect long-term minor to moderate adverse impacts in non-NRA portions of the proposed lands are possible

from the unrestricted motorized access by some visitors and resultant change to sensitive habitat areas.

Hiking/backpacking/sightseeing/backcountry experience/and other recreational activities. Land-based recreational activities including hiking, backpacking, other backcountry experiences, horseback riding, and cross-country skiing would continue within the NRA. In cooperation with private landowners, there is a potential to expand these activities into the COA surrounding the NRA, and perhaps continuing onto other public lands, thus providing a more comprehensive and wider range of recreational experiences. However, under Alternative 1, it is likely that certain types of development or other land uses would occur on these private lands at some time in the future that would eliminate opportunities for the expansion of these NRA land-based recreational activities. The potential loss of these opportunities would constitute a long-term minor to moderate adverse impact on recreation. This is most likely to occur in Land Unit A (CO 92 COA), where there is a moderate development potential, north and south of CO 92 and Morrow Point Reservoir, and at Black Mesa, Soap Mesa, and Soap Creek. It may also occur on Fitzpatrick Mesa, which has a low development potential.

Under Alternative 1, direct and indirect long-term minor to moderate adverse impacts would continue on COA lands outside the current NRA, due to illegal access into the NRA by visitors crossing private land, and to illegal trespassing onto private lands by recreational users of the NRA. Illegal trespass onto private lands within the COA occurs in Land Unit A, along CO 92, including Corral and Cottonwood creeks. In Land Unit D, trespass of hang-gliders landing on private property occurs in the Willow Creek area. In Land Unit E, trespass across private land occurs in the Windy Point and Hunters Point areas for access to ice climbing along the Morrow Point canyon walls. In addition, continued occasional illegal landing of hang-gliders on NRA lands would continue

under this alternative, resulting in long-term minor to moderate adverse impacts to vegetative resources, due to off-road vehicle use associated with the hang-gliding. Under Alternative 1, it is likely that legal public access to some desired activities would continue to be unavailable, adversely impacting the recreational visitor experience and enjoyment of some, and benefiting others.

Historic early season grazing would continue in the Long Gulch – Bear Trap Gulch area. Cattle would continue to cross the Crystal Trail, on their trek to the 30,000-acre USFS grazing allotment in this area. As cattle use in this area is only for a few days on a bi-annual basis, negligible to minor long-term adverse impacts on the visitor's recreational experience is expected.

In general, especially related to sightseeing, which is an integral part of all recreational activities in the area, certain types of development and land use, such as high-density housing, high-rise buildings, large parking areas, utility towers, and mining operations, on private property within the COA surrounding the NRA, could have a long-term, major adverse impact on the scenic resources of the area. This could, in turn, have a long-term, major adverse impact on visitor experience and appreciation of the NRA, and on the overall enjoyment of the area. This is especially true for all those who drive along the roads and highways that wind through the NRA along the canyons of Morrow Point Reservoir, and the shores of Blue Mesa Reservoir; and for all those who ride the waters of Blue Mesa Reservoir. County land use regulations may mitigate the impacts somewhat. However, land use regulations in and of itself would not be as effective as other tools of resource conservation being recommended by this study under Alternative 2.

Fishing and Hunting. Fishing and hunting opportunities within the NRA would continue to occur on lands that are not in conflict with other recreational use or facilities. Under Alternative 1, direct long-term minor to moderate adverse impacts would continue in private portions of the proposed lands

as a result of trespass by visitors looking for increased fishing access or hunting areas. This includes Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), and E (Sapinero/Blue Mesa COA).

Water-Based Recreation. Within the NRA, opportunities for water-based recreation including swimming, water skiing, sailing, windsurfing and watercraft use would continue. Continuation of existing management would result in no direct impacts to those visitors who participate in water-based recreation within the NRA.

Cumulative Impacts

Regionally, some recreation opportunities would experience minor to moderate short- to long-term adverse impacts from the continuation or increase in land use development, such as residential development, that would potentially result in the loss of access to new trail segments and scenic overlooks, and access to potential backcountry camping or hunting/fishing areas. When combined with the impacts of Alternative 1, these land development activities would result in moderate long-term cumulative adverse impacts.

Conclusion

Unmet potential for certain types of land-based recreation on lands in the proposed lands surrounding the NRA would result in long-term negligible to moderate adverse impacts to the NRA visitor's recreational experience and enjoyment. Long-term minor to moderate adverse impacts on the natural resources on non-NRA lands would be possible from the unrestricted motorized access by some visitors, and resultant change to sensitive habitat areas. Land Units A (CO 92 COA) and C (Gunnison River COA) would be susceptible to long-term minor to moderate adverse impacts as a result of trespass by visitors, including illegal landing of hang-gliders on NRA lands. Historic grazing would continue in Long Gulch – Bear Trap Gulch, and crossing of the Crystal Trail by cattle would result in long-term negligible to minor

adverse impacts on the visitor experience due to grazing use.

The potential for future development and other types of land use, such as high-density housing, high-rise buildings, large parking areas, utility towers, and mining operations on private lands surrounding the NRA, especially within the COA, could have a long-term major adverse impact on the scenic resources in the area. The scenic resource is considered to be a key resource for enjoyment of the NRA. Therefore, there could also be a long-term major adverse impact on the visitor enjoyment, experience, and appreciation of an otherwise nationally significant and spectacular geological and natural landscape setting.

Impacts of Alternative 2 – Proposed Action

Analysis

Under Alternative 2, a COA would be established that would encompass private lands within the proposed lands. The NRA would be congressionally authorized to partner with landowners within the COA for the purpose of resource conservation and enhancing recreational opportunity. This would increase potential for diverse appropriate resource-based recreation opportunities; especially additional land-based activities such as day use and extended use activities. Alternative 2 would also provide connection to opportunities offered on surrounding lands through participation by COA landowners in partnerships, including the potential for additional appropriate resource based commercial recreation support services. However, this would all be subject to the willingness of the private landowners to cooperate in such ventures. In addition, the Proposed Action would include a net addition of 10,040 acres to the NRA from federal and state agency transfers, for consideration of expanded land-based recreational opportunities.

Camping and picnicking. Within the NRA, management of camping and picnicking activities would continue. In Land Unit B (Blue Mesa Reservoir Agency), USFS, and BLM lands from the existing NRA (north of Sapinero Basin) to the southern edge of the West Elk Wilderness Area would be

transferred to NPS, including the Soap Creek Campground that is currently managed by the USFS. BLM has indicated a desire and expectation that the large parcel of their land in the Dillon Pinnacles area that would come under NPS management would continue to have only non-motorized access to protect wildlife, scenery, and other natural values. At this time, the National Park Service has no reason to believe otherwise. However, final determination would be made via a new general management plan or implementation plan for the area; and BLM would be invited to participate in the planning process. The management of this area by one agency rather than by three would provide long-term moderate benefits to visitors, operational benefits to the agencies, because the area would be managed under the guidelines of only one agency, and that agency would be the sole presence or contact for visitors.

- Direct and indirect long-term adverse impacts are possible due to the change in front-country campground management. Existing camping opportunities in undesignated sites would be lost because NPS would change the management of the area to designated camping only. Although management of Soap Creek campground would be transferred, NPS would permit all existing uses within the campground, including camping and use of the existing horse corrals. This would result in a long-term negligible to minor adverse impact on campground users accustomed to current undesignated camping opportunities. However, there would also be long-term minor beneficial impacts as a result of greater NPS presence, including increased law enforcement and campground maintenance.
- Transfer of lands from the USFS to NPS could also result in possible increased restrictions on motorized use, and seasonal access limitations to sensitive habitat areas in those lands. This could result in long-term minor to moderate adverse impacts on visitor experience

in formerly non-NRA public lands, depending on visitor expectations.

Hiking/backpacking/sightseeing/backcountry experience/and other recreational activities. Recreational activities including hiking, backpacking, sightseeing, other backcountry experiences, horseback riding, mountain biking, cross-country skiing, and other related activities would continue within the NRA, similar to Alternative 1. Potential acquired interests in private lands within the COA surrounding the NRA would provide opportunities to expand suitable land-based recreational opportunities and legal public access for hiking, backpacking, mountain biking, horseback riding, trails to scenic overlooks, ice climbing, and other activities.

Within Land Unit A (CO 92 COA), direct and indirect long-term minor to moderate beneficial impacts would be possible from new trail and overlook development down the Corral Creek drainage to Morrow Point Reservoir, and on Soap Mesa; expansion of a trail segment to the Blue Mesa Dam overlook; and potential development of backcountry hiking trails and backcountry camping. Management of the Dillon Pinnacles ACEC would also benefit NPS and visitors because of its important recreation opportunities on the mesa above the pinnacles, and because it is a key component of the viewshed. Because of existing NPS recreation opportunities and presence in the area, impacts to NRA visitors would most likely be beneficial with the inclusion of the Dillon Pinnacles ACEC.

In Land Units C (Gunnison River COA), D (Iola Basin COA), and E (Sapinero/Blue Mesa COA) long-term minor to moderate beneficial impacts would be possible from the potential of a new trail corridor along the south side of the Gunnison River, and new trails and scenic overlooks of Blue Mesa Reservoir and dam from Sapinero Mesa. There would also be the potential for a new hiking and cross-country ski trail to new overlook points for the Curecanti Needle, Blue Creek Canyon and Chipeta Falls, as well as access for climbers for rock and ice climbing, from the south rim of

Morrow Point canyon, within easy access of US 50. Direct and indirect short-term minor to moderate adverse impacts are also possible due to trail construction activity that could affect scenic resources and visitor experience.

In Land Unit D (Iola Basin COA), direct and indirect long-term beneficial impacts would be possible if NPS acquired an interest in approximately 40 acres in the southern portion of this area, where hang gliding currently occurs. This would provide the opportunity for hang gliders that take off from Big Mesa to land on federal property, ensuring that access to landing areas is legal. This action would require that the NRA issue a special federal regulation, or transfer the land to BLM. At present, it is not legal to land on NRA managed land according to the federal code of regulations.

In Land Unit F (Gateview), the existing campground would be transferred from NPS management to BLM management. BLM has indicated that if they were to manage the campground, they may discontinue the chlorinated drinking water system, given its daily maintenance requirement, and have visitors haul in their own water from elsewhere, as is done at other BLM campgrounds in the area. This would result in a long term negligible to minor adverse impact for visitors to the site, especially those who might be expecting potable water to be available. In any case, advanced notification would be available regarding the availability of water, or lack thereof.

In Land Unit H (West-End), historic early season grazing would continue in the Long Gulch – Bear Trap Gulch area. However, more of the land that is grazed in this allotment would remain under USFS administration. The corridor managed by NPS for the Crystal Trail would be considerably narrower than in Alternative 1, and agreements would allow for the continued use of cattle migration that use the USFS allotment. Impacts on the NRA visitor's recreational experience would be the same as described under Alternative 1, negligible to minor long-term adverse.

Land uses such as development or other activities would likely be reduced on non-NRA land within the proposed lands if landowners willingly apply resource conservation tools and join in partnerships, resulting in potential expansion and enhancement of recreational opportunities for visitors and local users. This would result in direct and indirect long-term minor to moderate beneficial impacts to visitor enjoyment.

In general, with respect to the scenic resource and its resultant effect on visitor enjoyment, there is expected to be a long-term major beneficial impact on visitor enjoyment and appreciation of the NRA, and on the overall enjoyment of the area by all who drive through the NRA, and ride the waters of Blue Mesa Reservoir, through implementation of Alternative 2. This would result from the creation of a COA, and the authorization and ability of NPS to work in more meaningful partnerships with private landowners within the COA, through the use of tools for resource conservation, to reduce or eliminate adverse impacts on scenery and other recreational resources.

Fishing and Hunting. As in Alternative 1, fishing and hunting opportunities within the NRA would continue to occur on lands that are not in conflict with other recreational use or facilities. However, under Alternative 2, for Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), and E (Sapinero/Blue Mesa COA), possible acquired interests in adjacent private lands would provide opportunities to expand public access for fishing and hunting into more isolated and backcountry areas. This would result in long-term minor to moderate beneficial impacts to both visitors and local residents, due to the increased access and opportunity for these activities, and reduction of potential trespass impacts on private land.

Water-Based Recreation. Water-based recreational activities including swimming, water skiing, sailing, windsurfing and watercraft use would continue within the

NRA, similar to Alternative 1. There would be no direct impacts to visitors participating in such activities within the NRA.

Cumulative Impacts

Public land management activities and proposed planning outside of the COR, in combination with beneficial impacts of actions proposed in Alternative 2, would result in long-term minor to moderate beneficial cumulative impacts on land-based recreational opportunities. This would be due to the implementation of tools for resource conservation, and anticipated COA private landowner participation in conservation measures, which would result in types of land use and development or non-development that would be more compatible with NRA goals for expanded and enjoyable recreation.

Conclusion

Long-term negligible to moderate beneficial impacts to recreational opportunities and visitor enjoyment are expected to result from landowners' willing participation in partnerships with NPS, and the use of tools for resource conservation. Intensity of impacts would be dependent on location, level of landowner participation, and types of tools implemented. Benefits would be greatest in those areas within the COA with the greatest potential for enhancement of trail connections, trail access to new scenic overlooks and backpacking camping areas, cross-county skiing, access to climbing areas, connectivity for mountain biking, and access to legal hang-gliding landing areas. These areas include Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), and E (Sapinero/Blue Mesa COA). In any event, the extent of new recreational opportunities within the NRA would be ultimately determined by a new general management plan or implementation plan. As part of that planning process, the need and desire for such opportunities would be assessed through input from neighbors, NRA visitors, and the general public.

As in Alternative 1, there is a potential in Alternative 2 for long-term major adverse impacts on scenic resources, and the resultant long-term major adverse impact on visitor enjoyment and appreciation of the NRA and its surroundings due to incompatible development and land use, such as high-density housing, high-rise buildings, large parking areas, utility towers, and mining operations, within the COA. This is because the actions proposed in this alternative would be on a volunteer

INTERPRETATION AND EDUCATIONAL OPPORTUNITIES

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for interpretation and educational opportunities at Curecanti National Recreation Area. Refer to the following box for details.

DESIRED CONDITIONS FOR INTERPRETATION AND EDUCATIONAL OPPORTUNITIES	SOURCE
Visitors have opportunities to enjoy the NRA in ways that leave resources unimpaired for future generations.	<ul style="list-style-type: none"> - NPS Organic Act of 1916 - NPS <i>Management Policies 2006</i>
Every park will develop an interpretive and educational program that is grounded in (1) park resources, (2) themes related to the park's legislative history and significance, and (3) park and Servicewide mission goals.	<ul style="list-style-type: none"> - NPS <i>Management Policies 2006</i>
Provide for public use, understanding, and enjoyment.	<ul style="list-style-type: none"> - NRA Purpose

or willing basis on the part of the private sector. However, if the actions proposed in Alternative 2 are implemented, and the tools and concepts of partnership, cooperation, and conservation are truly enacted, then there would be long-term major beneficial impacts on the scenic resources. This would result in a long-term major beneficial impact on visitor enjoyment, experience, and appreciation of the NRA and its surroundings.

Methodology

This section analyzes the impacts of alternatives on interpretation and educational opportunities, including existing and/or potential scenic overlooks and visitor/interpretive facilities within the proposed lands. All available information on potential interpretive and educational opportunities was compiled. Where possible, NRA programs, websites, and map locations were consulted. Analyzed activities, including access for potential overlook sites and night sky viewing could occur on many land units within the proposed lands, irrespective of ownership or managing agency. The analyses of impacts include lands within the NRA and the proposed lands. Cumulative impacts include effects from the alternatives to lands outside of the proposed lands, as well as effects from unrelated actions to lands within the proposed lands. Impact intensities are as follows:

Negligible: Visitors would likely be unaware of any effects associated with implementation of

the alternative. There would be no noticeable change in interpretive/educational programs or material, or in any defined indicators of visitor satisfaction or behavior.

Minor: Changes in interpretive/educational experience would be slight but detectable, but would not appreciably limit or enhance critical characteristics of visitor understanding and appreciation of the NRA's resources and recreational opportunities. Visitor satisfaction would remain stable.

Moderate: Few critical characteristics of visitor understanding and appreciation would change and/or the number of participants engaging in an interpretive/educational activity would be altered. The visitor would be aware of the effects associated with implementation of the alternative and would likely be able to express an opinion about changes. Visitor satisfaction would begin to either decline or increase as a direct result of the effect.

Major: Multiple critical characteristics of visitor understanding and appreciation would change and/or the number of participants engaging in an interpretive/educational activity would be greatly reduced or increased. The visitor would be aware of the effects associated with implementation of the alternative and would likely express a strong opinion about the change. Visitor satisfaction would markedly decline or increase. The impact is severely adverse or exceptionally beneficial, and/or would affect the majority of visitors.

Short-term interpretive/educational impacts are immediate and do not occur over multiple visitor seasons. Long-term impacts persist beyond one year or visitor season.

Because this topic does not evaluate the potential impacts on natural or cultural resources contained within the NRA, impairment is not evaluated.

Impacts of Alternative 1 – No Action

Analysis

Within the NRA, interpretive services and educational programs would continue as currently managed. Land Units C (Gunnison River COA) and E (Sapinero/Blue Mesa COA) have moderate to very high development potential. These lands would be most susceptible to alteration of the landscape should these areas be developed, resulting in long-term negligible to minor adverse impacts related to continued unmet potential for interpretation of historic uses and some unique natural landscapes. These land units would provide potential opportunities to interpret new resource areas; however, this would not prevent the NRA from continuing interpretation of similar viewsheds and resource areas currently within the NRA.

Cumulative Impacts

Regionally, potential interpretive and educational opportunities would experience negligible to minor short- to long-term adverse impacts from the continuation or increase in land use development, such as residential development, that would potentially result in the loss of access to new trail segments and scenic overlooks to resource areas not covered within NRA lands. When combined with the impacts of Alternative 1, these land development activities would result in negligible to minor long-term cumulative adverse impacts.

Conclusion

Within the NRA, interpretive services and educational programs would continue as currently managed. Adjacent non-NRA land units (Land Units C [Gunnison River COA] and E [Sapinero/Blue Mesa COA]) would have long-term negligible to minor adverse impacts due to their moderate to high land development potential. The NRA would not be prevented from interpretation of similar viewsheds and resource areas currently within the NRA.

Impacts of Alternative 2 – Proposed Action

Analysis

Under Alternative 2, NPS would be congressionally authorized to partner with landowners within the COA for the purpose of interpretive and educational enhancement. This would increase potential for diverse appropriate resource based interpretive opportunities; especially additional land based activities such as new visitor facilities and interpretive overlooks. Alternative 2 would also provide connection to opportunities offered on surrounding lands in the proposed lands through participation by COA landowners in partnerships, including the potential for joint-agency visitor and interpretive facilities.

Impacts to interpretive resources are detailed below. Impact intensities would vary with level of participation by landowners in resource conservation activities and the types of tools implemented (technical assistance and agreements vs. conservation easements and acquisition). In addition, the potential for development based on ease of access, existing development in the area, and watershed also factors into prediction of impact intensity. Resources within land units with highest potential for development would gain the most benefits from landowner use of resource conservation tools.

Within the NRA, interpretive services and educational programs would continue as currently managed. In Land Units A (CO 92 COA) and E (Sapinero/Blue Mesa COA), there would be the opportunity to offer interpretation of adjacent land areas and geologic formations from vantage points that are currently not accessible to visitors. This would include a potential close-up westward view of the Curecanti Needle from the south rim of Morrow Point canyon, with relatively easy trail access from U.S. 50. This would be a long-term minor to moderate beneficial impact, offering increased interpretive opportunities to visitors and local users.

Land Units B (Blue Mesa Reservoir Agency) and C (Gunnison River COA) would provide

potential for interpretive opportunities associated with a long distance trail connection to Riverway and Gunnison, along with connections to other trail segments at Cooper Ranch and Neversink. These areas along the river also provide unique interpretive and educational opportunities for Americans with Disabilities Act (ADA) access, school programs, and Night Sky viewing, resulting in long-term moderate beneficial impacts. In addition, Land Unit B, which includes Forest Service and BLM lands from the existing NRA (north of Sapinero Basin) to the southern edge of the West Elk Wilderness Area, would be transferred to NPS. The management of this area by NPS would probably provide long-term negligible to minor benefits for interpretation and educational services to visitors, by drawing upon that agency's more established and comprehensive interpretive program in the Curecanti area.

In Land Unit E, the Blue Mesa area (Hunters Point) would provide the potential opportunity for a new visitor center facility with direct access for visitors from US 50. This would increase opportunities for development of a joint-agency managed facility, centrally located for linking agency lands, as well as the ability to draw more water and land-based visitors from the highway. This would result in a long-term moderate to major benefit to visitor understanding and appreciation of the resources and recreational potential in the overall Curecanti area, and to the ability of the various government agencies in the area to relay their messages to the public.

Cumulative Impacts

Cumulative impacts for interpretation and education would be similar to Alternative 1, except land development and federal land management activities and proposed planning outside of the proposed lands, in combination with decreased impacts of Alternative 2 would result in minor to moderate beneficial cumulative impacts. These benefits would be due to COA landowner and joint-agency participation in enhanced interpretive and educational opportunities, and would depend on the types of resource conservation tools implemented.

Conclusion

Beneficial impacts to interpretive and educational opportunities would result from landowners' use of resource conservation tools and partnerships as part of the COA. Benefits would be greatest in those areas with the potential for trail access to new scenic overlooks

SCENIC RESOURCES

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved for scenic resources at Curecanti National Recreation Area. Refer to the following box for details.

DESIRED CONDITIONS FOR SCENIC RESOURCES	SOURCE
NPS will monitor land use proposals and changes to adjacent lands, and their potential impacts on NRA resources and values, engaging constructively with the broader community to encourage compatible adjacent land uses and appropriate mitigation.	- NPS <i>Management Policies 2006</i>
Conserve the scenery, natural, and cultural resources.	- NPS Organic Act of 1916 - NRA Purpose

including Land Units A (CO 92 COA) and E (Sapinero/Blue Mesa COA). This would also incorporate new or improved access to unique geologic formations such as the Curecanti Needle, resulting in long-term minor to moderate beneficial impacts. Land Units B (Blue Mesa Reservoir Agency) and C (Gunnison River COA) could provide interpretive opportunities associated with a potential long distance trail connection to Riverway and Gunnison, and opportunities for ADA access, school programs, and night sky viewing, resulting in long-term moderate beneficial impacts on understanding and appreciation.

Land Unit E (Sapinero/Blue Mesa COA) would provide opportunity for a potential joint-agency managed visitor center facility with direct access for visitors from US 50, resulting in a long-term moderate to major benefit for visitor understanding and appreciation of the area's resources.

Methodology

A computer-generated viewshed analysis (Digital Elevation Model) was created that illustrates what can be seen from US 50, CO 92, CO 149, and from the centerline of Blue Mesa Reservoir and its arms. The computer-generated analysis identified everything that can be seen in three layers defined as follows:

- Foreground (0 – 1/2 mile from the observer), where details such as plant types can be discerned, development is most apparent, and all changes are immediately perceived.
- Middle ground (1/2 – 3 miles), where different stands of trees (coniferous and deciduous) can be identified, development is noticed, and changes to forms are noticed.
- Background (3 miles and beyond), where ridgelines and horizon lines define the limit; and the visual impact of development is not as critical, except where the landscape is altered to such a magnitude as to disrupt the scene (for example, multi-home developments, and clear cutting of vegetation).

For the RPS, primarily the viewsheds up to 3 miles played a key role in the resource analysis.

Areas with exceptional scenic vistas and potential new overlook points were identified through site assessments performed by NPS staff and a Photo Assessment Workshop carried out by local resident volunteers. The Photo Assessment Workshop was conducted by 11 volunteer citizen photographers, who took nearly 300 photographs of scenic and other resources that were defined within seven categories of importance related to scenic views, conservation of critical resources, and other issues. Some of the key views that they identified are described in the Affected Environment. Potential impacts to these views identified by area residents were considered more adverse than other area views.

The following impact thresholds were established in order to measure the relative changes in scenic resources (overall, localized, short-term and long-term, cumulatively, beneficial and adverse) as a result of the alternative actions:

Negligible: An action that would introduce (adverse) or prevent (benefit) only the perception of some additional movement by cars or by people walking, on bicycles, or on horseback. The change to the viewshed would be so small or localized that it would have no measurable or perceptible consequence to the visitor's enjoyment of the view.

Minor: An action that would introduce or prevent perceptible human-made additions within the viewshed. These actions would include structures that affect a relatively small portion of the viewshed, either the foreground, middle ground, or background, and have barely perceptible visual consequences to the visitor's enjoyment of the view.

Moderate: An action that would either introduce or prevent perceptible human-made additions within the viewshed. These actions would include facilities, parking, and other human-made structures that would affect a moderate portion of the viewshed. This might include the foreground and middle ground, or the foreground and background. These actions

would not completely alter the viewshed, but would be a perceptible visual addition to the existing conditions.

Major: An action that would introduce or prevent multiple and drastic human-made additions that affect the entire or major part of the viewshed as seen by the visitor. These actions would include building architecture and site planning that does not "fit in" to the natural scene; and major facilities, such as high-density housing, high-rise buildings, utility towers, mining operations, and large parking areas, that would alter to a great extent the foreground, middle ground, and/or background of the existing viewshed.

Impacts are short-term when temporary in nature such as temporary construction or other human-made facilities that would be removed within a year of placement. Long-term impacts occur when permanent human-made additions or intrusions occur within the viewshed. Permanent change involves an intrusion that lasts for one or more years.

Impacts of Alternative 1 – No Action

Analysis

Scenic resources within the NRA and on other adjacent federal and state lands would continue to be protected through implementation of federal and state land management plans. Important scenic features, such as the Dillon Pinnacles, Curecanti Needle, areas adjacent to Blue Mesa Reservoir, Morrow Point Reservoir, and Crystal Reservoir, and other features have been identified and would remain protected, resulting in long-term, major, beneficial impacts to scenic resources on public lands. Private lands within the COA surrounding the NRA that remain in their current undeveloped condition would also continue to contribute to the existing high quality natural landscape surrounding the NRA.

However, there is an increasing probability that private lands within the COA would experience development and other land uses that are incompatible with the goals and objectives of the NRA. This could

result in long-term, major, adverse impacts to the scenic resource, depending upon factors such as decisions by landowners, county land use regulations, and population growth. The degree of impact would depend upon the type of development or land use; whether development remains localized within a few areas, or becomes increasingly widespread over time; and whether it occurs in the foreground, middle ground, and/or background of the viewer.

Land Units A (CO 92 COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) containing features such as Sapinero Mesa, Blue Mesa, the canyon walls that rim Morrow Point and Crystal Reservoirs, the Curecanti Needle, Soap Mesa, and Willow Creek, would be more likely to be impacted by development in the near future. This is due to their accessibility from US 50, CO 92, and CO 149, and local roads such as Soap Creek Road; and to the existence of other development in the vicinity. Many of these areas have been identified by local residents as natural areas that represent important scenic resources in Montrose and Gunnison Counties. In many cases, the areas are representative of the spectacular geological setting that contributes to the NRA's national significance.

Sapinero Mesa, where lands have been subdivided, are for sale, and a cell tower has been proposed; and areas along US 50 such as Cimarron, Windy Point, and Hunters Point, that provide opportunities for easy access, are the most logical candidates for development in the foreseeable future. Sapinero Mesa and the US 50 corridor are seen from a variety of locations within the NRA. The development of these areas would adversely impact natural scenic resources from numerous locations within the NRA, such as the surface of Blue Mesa Reservoir, Sapinero and Dillon Pinnacles Overlooks, Soap Creek Road, Lake Fork Campground and Marina, and Elk Creek Campground. The CO 92 corridor, Fitzpatrick Mesa, and Soap Mesa are expected to experience increased development that would impact scenic resources from NRA locations such

as a variety of overlooks along CO 92, the US 50 corridor, Ponderosa Campground, McIntyre Gulch, and the surface of Blue Mesa Reservoir.

Private lands on the eastern end of the NRA where US 50 runs along the Gunnison River through riparian areas and a small canyon before opening up onto Iola Basin on Blue Mesa Reservoir, if developed, could also result in minor to major adverse impacts to scenic resources for NRA visitors, local residents, and others driving through the area. These lands are part of Land Units C (Gunnison River COA) and D (Iola Basin COA). Visitors recreating in this area at locations such as Coopers Ranch, Neversink, and Beaver Creek, and first entering the NRA on the east, would be potentially impacted by views of new development or incompatible land uses.

The southern portion of Spring Gulch, in Land Unit G (West-End COA), would be another concern if development occurred. Although the likelihood is low in the near future, because of its proximity to drives and overlooks within the National Park, development would likely result in a minor adverse impact.

In general, development and other types of land use, such as high-density housing, high-rise buildings, utility towers, and mining operations, on private property within the COA surrounding the NRA, could have a long-term, major, adverse impact on the scenic resources of the area. This is especially true in the lands surrounding Blue Mesa Reservoir, and the eastern stretches of Morrow Point Reservoir. County zoning regulations may mitigate the impacts somewhat. However, zoning in and of itself would not be as effective as other tools of resource conservation being recommended by this study.

Cumulative Impacts

Other past, present, and reasonably foreseeable conservation and planning activities occurring throughout the proposed lands and with Gunnison and Montrose Counties could result in a variety of impacts to local and regional scenic resources.

The Gunnison County Comprehensive Plan is expected to evaluate a wide range of factors in developing a strategy to deal with growth in the Curecanti area. Efforts from the Comprehensive Plan could result in long-term beneficial impacts on scenic resources adjacent to the NRA by considering such resources in the development and implementation of recommendations, including the possibility of establishing a Special Geographic Area to recognize the unique scenic attributes of the NRA.

Long-term management plans by agencies such as the U.S. Forest Service and BLM would continue to protect important scenic vistas, such as the West Elk Mountains and the San Juan Mountains, which are visible in the background from within the NRA. This would result in beneficial impacts. Local, state, and national conservation groups and land trusts could continue to work with landowners in the vicinity, to protect conservation values via purchase or donations of conservation easements or land. This would further conserve important resources, such as scenic vistas, and result in long-term benefits.

CDOT/FHWA highway modernization plans could influence development along the US 50 corridor, further affecting the highway corridor and its aesthetics. Such development could result in long-term, localized minor to moderate adverse impacts on the scenic resource.

The long-term major adverse impacts to scenic resources that could result from Alternative 1 from potential development and land use in the COA surrounding the NRA, when combined with the potential adverse and beneficial impacts of other regional planning and conservation efforts, could result in cumulative long-term minor to major adverse impacts. However, these cumulative impacts represent more of a regional perspective. Inevitably, there would be areas encouraged for development that could substantially adversely affect local scenic resources on a cumulative basis.

Conclusion

Scenic resources within the NRA and on other adjacent federal and state lands would continue to be conserved through federal and state land management activities. Important scenic features such as the Dillon Pinnacles and Curecanti Needle would be protected, resulting in long-term major beneficial impacts on scenic resources. Private lands within the COA that remain in their current undeveloped condition would also continue to contribute to the existing high quality natural landscape in the area.

However, private lands in the COA surrounding the NRA proposed for Alternative 2 would continue to be increasingly subject to future development and other land uses in Alternative 1 that might be incompatible with NRA goals and objectives. This could result in long-term major adverse impacts to the scenic resource, depending upon factors such as decisions by landowners, county land use regulations, and population growth. The degree of impact would depend upon type of development and land use; whether development remains localized within a few areas, or becomes increasingly widespread over time; and whether it would occur in the foreground, middle ground, and/or background of the viewer.

Future development and other types of land use, such as high-density housing, high-rise buildings, large parking areas, utility towers, and mining operations on private lands in the COA could result in a long-term major adverse impact on the spectacular geological and natural landscape setting, which can be seen from the NRA, and which has been determined to be a key resource for visitor enjoyment of the NRA.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other

relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

Impacts of Alternative 2 – Proposed Action

Analysis

As in Alternative 1, scenic resources within the NRA and on other adjacent federal and state lands would continue to be protected through implementation of federal and state land management plans. Thus impacts to scenic resources on public lands would be the same in Alternatives 1 and 2.

On private lands within the COA, the availability of resource conservation tools to private landowners, and increased congressionally authorized efforts on the part of the National Park Service to conserve viewsheds and scenic features in partnership with neighbors, would help maintain existing scenic resources. Should landowners implement tools such as conservation easements or fee simple acquisition, long-term minor to major beneficial impacts could occur, depending upon the degree of development or conservation. However, the availability of such tools would increase the likelihood that some or all of the scenic resources within the COA would be conserved.

Some of the more important scenic areas and those more vulnerable to development are located in Land Units A (CO 92 COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). These areas have been identified in Alternative 1, and include areas such as Sapinero Mesa, Soap Mesa, Blue Mesa, and Cimarron.

As noted in Alternative 1, there is a high probability that Sapinero Mesa could be developed within the next 5 years, as it is currently being marketed. It is in the heart of one of the most scenic and visible areas of the NRA --- Sapinero Basin on Blue Mesa Reservoir. It can be seen from US 50, from the NRA lands on the northern side of Blue Mesa Reservoir, from the surface of the

reservoir, from Soap Creek Road, from a number of overlooks within the NRA, and from potential overlooks within the COA. Should a conservation easement or acquisition for conservation purposes be applied to this area, a long-term moderate to major beneficial impact would be achieved. Conservation of areas such as the Sapinero parcel is important to maintaining a high degree of visitor enjoyment.

Another area that would benefit from conservation is Land Unit C (Gunnison River COA) on the eastern edge of the NRA. This area borders the Gunnison River and US 50 and contributes to the initial NRA entry experience for visitors and residents alike. The cottonwoods, meandering river, and local agrarian scene, if conserved, would continue to provide a long-term moderate to major beneficial impact to the scenic resource for NRA visitors, local residents, and all others who drive along US 50. Another important riparian area is along Willow Creek in Land Unit D (Iola Basin COA). If conserved, it could benefit the scenic resources along the CO 149 corridor leading into the NRA from the south.

During the course of the RPS, a variety of potential overlooks were identified within the COA that would provide spectacular views of the NRA, and other area resources and scenic features. These potential overlooks would be located in the following land units:

- Land Unit A, along CO 92, where visitors could view Crystal and Morrow Point Reservoirs
- Land Unit A, on top of Soap Mesa, where visitors could view Blue Mesa Reservoir and its environs, and the Uncompahgre Plateau to the south
- Land Unit E, on top of Sapinero Mesa, that would provide views of Blue Mesa Reservoir and its environs, Soap Mesa, the West Elk Mountains, the Sawatch Range, and the Continental Divide
- Land Unit E, near Windy Point, where visitors could view the Curecanti Needle from a location in relatively

close proximity to US 50, the primary transportation corridor.

If landowners were willing, and some form of easement or fee simple acquisition could be established, the opportunity to provide spectacular overlooks offering new perspectives would result in long-term moderate to major beneficial impacts to visitor enjoyment and appreciation of the NRA and its surroundings. If the areas are not conserved and/or acquired, the opportunity would be lost.

In general, there is expected to be a long-term major beneficial impact on scenic resources through implementation of Alternative 2. This would result from the creation of a COA and the authorization and ability of the National Park Service to work in more meaningful partnerships with private landowners within the COA; increased cooperation between NPS and its neighbors; and the implementation of the tools for resource conservation.

Cumulative Impacts

Cumulative impacts related to the actions in Alternative 2 would be more beneficial than Alternative 1. Many local and regional planning and conservation activities would continue to result in long-term, minor to major beneficial impacts to local and regional scenic resources. Without cooperation of private landowners in the COA, the overall cumulative impact of Alternative 2 could be adverse, as in Alternative 1. However, with the cooperation of private landowners, these regional scenic impacts, when combined with the potentially beneficial impacts associated with the resource conservation tools suggested in Alternative 2, could result in long-term, major, beneficial, cumulative impacts. The overall impact of these combined efforts of federal, state, and local agencies, as well as private landowners that conserve the scenic resources on their land, would be beneficial and widespread.

Conclusion

Some of the more important scenic areas, and those more prone to be adversely impacted

by potential development, are located on private property in Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). Conservation of these areas would be beneficial to both local and NRA-wide viewsheds and individual scenic features, for visitors and residents alike. The availability of resource conservation tools to private landowners, and congressionally authorized increased efforts on the part of the National Park Service to work in partnership with private landowners to conserve viewsheds and scenic resources within the COA, would help maintain existing scenic resources. The degree to which viewsheds and individual scenic features on private lands within the COA would be conserved is highly dependent upon the willingness and cooperation of landowners. Should landowners implement resource conservation tools such as conservation easements or fee simple acquisition, long-term major beneficial impacts to the scenic resources would occur.

As in Alternative 1, there is a potential in Alternative 2 for adverse impacts on scenic resources, due to certain types of development and land use, such as high-density housing, high-rise buildings, large parking areas, utility towers, and mining operations within the COA surrounding the NRA. This would occur if private landowners choose not to take advantage of the tools for resource conservation that are available, and if they choose to develop, or otherwise use their lands for purposes that are incompatible with NRA goals and objectives. This is because the actions proposed in Alternative 2 would be on a volunteer or willing basis on the part of the private sector. However, if the actions proposed in Alternative 2 are implemented, and the tools and concepts of partnership, cooperation, and conservation are truly enacted on behalf of both NPS and private landowners, then the spectacular natural open scenery in the area could be conserved, and perhaps enhanced. This would result in long-term major beneficial impacts on the scenic resource, the preservation of which is essential to the enjoyment of the NRA by visitors and residents alike.

Because there would be no major, adverse impacts to a resource or value contained within the NRA, whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for Curecanti NRA; (2) key to the natural or cultural integrity of the NRA, or to opportunities for enjoyment of the NRA; or (3) identified as a goal in the NRA's general management plan or other relevant NPS planning documents, as a result of activities undertaken by NPS, visitors, or concessioners, contractors, or others operating within the NRA, there would be no impairment of the NRA's resources or values.

REGIONAL ECONOMIC AND SOCIAL CHARACTERISTICS

ECONOMICS

Guiding Policies and Regulations

Current laws and policies require that certain desired conditions be achieved related to economics at Curecanti National Recreation Area. Refer to the following box for details.

Methodology

The potential impact to economic and social characteristics of the towns and counties of Gunnison and Montrose were considered in this analysis. Concerns covered by this section include effects on local economic conditions such as employment, county revenues, and quality of life. Because of the range of potential actions in the RPS, most of which are dependent on individual landowner desires, a qualitative approach was undertaken. Impacts were determined via discussions with county officials during agency workshops and through research on the potential effects of preservation of open space, and resource conservation mechanisms, such as conservation easements, on the local economy of rural mountain communities.

The area of analysis is within the counties of Gunnison and Montrose. Slightly more emphasis is placed on Gunnison County because most of the NRA and surrounding proposed lands occurs within Gunnison County.

Impact thresholds that measure the change in social and economic conditions within the counties as a result of each alternative are as follows.

DESIRED CONDITIONS FOR ECONOMICS	SOURCE
Curecanti National Recreation Area is managed as part of a greater ecological, social, economic, and cultural system.	- NPS <i>Management Policies 2006</i>
The National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts; to conserve NRA resources; and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, affiliated tribes, neighboring landowners, and all other concerned parties.	- NPS <i>Management Policies 2006</i>
Curecanti National Recreation Area increases its managerial resources through initiatives and support from other agencies, organizations, and individuals.	- NRA Mission Goal

Negligible: Effects to socioeconomic conditions would be below or at the level of detection. No noticeable change in any defined socioeconomic indicators would occur.

Minor: Effects to socioeconomic conditions would be slight but somewhat noticeable or detectable by county/city government or residents.

Moderate: Effects to socioeconomic conditions would be readily apparent by county/city government and residents and result in changes to socioeconomic conditions on a local scale.

Major: Effects to socioeconomic conditions would be readily apparent by county/city governments and residents, resulting in demonstrable changes to socioeconomic conditions in the region.

Short-term effects would be less than one year in duration – for example, occurring during one tourist season. Long-term effects would be more than one year in duration.

Because this topic evaluates the potential impact to social and economic conditions within the counties and does not involve resources within the NRA, impairment is not evaluated.

Impacts of Alternative 1 – No Action

Analysis

In Alternative 1, it is assumed for purposes of analysis that existing private lands remain in their current condition or are developed. Because funding and authorization would not be available through NPS for implementation of resource conservation tools, conservation on private property in the COA surrounding the NRA (as described for Alternative 2) is expected to be minimal.

Economic Conditions. Existing economic conditions and trends would most likely continue assuming private lands remained in their current state. Employment in existing industrial sectors such as Wholesale/Retail and Services would continue to be major contributors to regional economic health. The portion of total personal income attributable

to non-labor income would remain at 30 to 40%, or potentially increase based on past trends. Negligible beneficial impacts would result because employees, businesses, and county governments are already achieving these economic conditions.

In contrast, if lands were developed by private landowners in areas such as Sapinero and Blue Mesa, some new stimulus could be provided within sectors such as Wholesale/Retail, Services, and Construction through expenditures and employment associated with construction-related activity and new residents. Over the next 5 to 10 years, this stimulus would be limited, resulting in short-term minor to long-term negligible beneficial impacts within the local Gunnison economy.

Such development could also provide additional opportunities for those individuals with non-labor income such as retirees to purchase a home or business resulting in some additional beneficial impacts.

NRA Contribution to Regional Economy.

The NRA would continue to beneficially impact the local economy through visitor expenditures, as well as through expenditures related to NRA operations and employees living within the community. Visitation could be adversely impacted if private lands identified within the proposed lands were developed and began to affect the values that visitors relied upon for a positive visitor experience, such as high-quality scenic vistas. Depending upon the degree of development that occurred in the near future, the long-term adverse impact could be negligible to minor over the life of this plan, but could be substantially greater if development trends continued into the future.

Payments In Lieu of Taxes (PILT) and Other Impacts to Regional Revenues. NPS would acquire no private lands through fee simple acquisition in the proposed lands, resulting in no impact to PILT payments. PILT payments would be dependent upon congressional funding of the program, but would most likely remain at current levels or increase slightly each year depending upon the Consumer Price Index and other factors.

County revenues could increase if existing private lands that are currently subdivided and for sale were purchased and developed in the near future. Such purchases would result in additional property taxes to the county and would be dependent upon the assessed value of the land. Residential or commercial development of lands within areas such as Land Unit E, containing Sapinero Mesa, US 50, Hunters Point and Windy Point, would most likely result in long-term negligible to minor beneficial impacts to county revenues, depending upon the amount of development. Offsetting some of the beneficial gains in property taxes could be increased costs related to county infrastructure, such as water, utilities, road maintenance, and schools.

Quality of Life. Quality of life would be maintained if private lands within the proposed lands remained within their current condition. However, if lands were subdivided and some development ensued in the near future, values related to natural vistas and open space that Gunnison County residents identified as important could begin to erode resulting in long-term, negligible to minor adverse impacts on residents. These could substantially increase if development trends continue into the future.

Cumulative Impacts

Other past, present, and reasonably foreseeable planning and resource conservation activities occurring throughout the proposed lands and with Gunnison and Montrose Counties could result in a variety of economic impacts. The Gunnison County Comprehensive Plan could result in long-term minor to moderate beneficial impacts on the regional economy by limiting development to areas that would not impact regional environmental and scenic resources.

Local, state, and national conservation groups and land trusts could continue to acquire conservation easements or private lands within Gunnison and Montrose Counties, further conserving important resource values such as wildlife habitat, and preserving quality of life attributes, but also adversely impacting county revenues. Similarly, future acquisitions

of private lands by other agencies such as USFS and BLM could decrease regional revenue from property taxes. These activities could result in long-term negligible to minor adverse impacts on county revenues and long-term minor beneficial impacts on quality of life.

CDOT/FHWA highway modernization plans could further encourage development along the US 50 corridor, encouraging local economic development. These plans could result in long-term negligible to minor beneficial economic impacts.

The long-term impacts, both beneficial and adverse, that would result from Alternative 1 when combined with the economic impacts of other planning and conservation efforts such as the Gunnison County Comprehensive Plan and other land preservation activities would result in negligible to minor beneficial cumulative impacts in the long-term. Many of the potential cumulative adverse impacts to the regional tax base would most likely be offset by the beneficial cumulative impacts associated with increased visitation and visitor spending and enhanced quality of life for area residents.

Conclusion

Economic conditions within the county would remain unchanged assuming private lands within the proposed lands remained in existing conditions and all other factors such as NRA visitation, visitor expenditures, and payments-in-lieu-of-taxes (PILT) remained at current levels.

If private lands were developed, expenditures and employment associated with construction-related activity and new residents could result in short-term minor to long-term negligible beneficial impacts within the local economy. Increased development would also result in long-term negligible to minor beneficial impacts to county revenues through increased property taxes, although associated infrastructure costs could offset some of this benefit.

Conversely, development that eroded scenic or other key resource values could create long-term negligible to minor adverse impacts to

visitation in the NRA and to the quality of life currently enjoyed by area residents. Overall, the long-term beneficial impacts associated with localized development could be offset or exceeded by the adverse impacts that could result from increased development in sensitive resource areas.

Impacts of Alternative 2 – Proposed Action

Analysis

Economic Conditions. The predominant two industries in both Gunnison and Montrose Counties are wholesale/retail, and services, with approximately 50% to 55% of employees in both counties working in these sectors. Growth in these industries over the past several decades, particularly in Gunnison County, has been largely associated with increasing recreation and tourism (Wilderness Society 1999). The Government and Construction sectors are also important with a combined total of approximately 20% of employees. Thus, services to visitors are an important part of the economy, as are jobs associated with federal land management agencies.

Retirees and households with investment income (non-income labor) account for approximately 30% to 40% of total personal income within the Gunnison and Montrose Counties and have contributed to substantial income growth (greater than 25%) in both counties since 1970. In contrast, extractive industries such as Agricultural Services, Forestry, Fishing and Other only accounted for approximately 0.4% and 1.1% of new total personal income over the same period. Self-employed individuals also grew by 292% and 150% between 1970 and 1997 in Gunnison and Montrose Counties, respectively, and represented approximately 25% of total jobs in 1997 (Wilderness Society 1999). For retirees, households with investment income, and the self-employed, the choice of a community is based on quality of life indicators such as scenic resources and recreational amenities. There are some areas in the private sector along the US 50 corridor through the NRA that are outside the COA, such as near the Lake Fork bridge, where

sensitive development that could provide an economic stimulus would also be compatible with the NRA's goals and objectives of resource conservation.

As indicated in the “Scenic Resources” section of the Affected Environment chapter, the National Park Service determined via a visitor survey conducted at the NRA in the summer of 1998, that visitors consider scenic resources to be very important to their sense of enjoyment of the NRA. Research also indicates that communities near natural areas receive positive economic effects as a result of their proximity to the environmental attributes that areas, such as the Curecanti area, contain. A study of 113 rural counties in the western United States discovered that the presence of natural areas was positively correlated with growth in population, income, and employment. From 1969 to 1996, positive and significant correlation was discovered among employment, per capita income, and population growth rates and the percentage of land designated as wilderness. When the land designation was expanded to include designated wilderness, national parks and monuments, and wilderness study areas, the correlation between amenities and measures of growth was even stronger (Loomis and Richardson 2002).

Based on the previous evidence, the preservation of natural, cultural, recreational, and scenic resources through implementation of conservation tools would most likely contribute to maintaining or increasing regional economic health from sustaining or encouraging further growth in Retail and Service industries and in non-labor income in both counties. Improving regional economic conditions would result in long-term minor to moderate beneficial impacts to the local economy, depending upon the degree of resource conservation.

NRA Contribution to Regional Economy. NRA-induced factors that affect the local economy include visitor numbers, visitor spending, and employee and operational expenditures. The potential for conservation of key resource values in areas surrounding

the NRA could maintain existing levels or encourage additional visitation by providing new recreational opportunities and maintaining the relatively untouched and undeveloped appearance of the Curecanti area in comparison to other national and state parks and recreation areas. Increased visitation would result in additional spending within the local economy that would range between \$36.74 per day for a local day user, to \$172.48 per day for visiting parties staying in a motel outside the NRA. This would increase sales and tax revenues, as well as jobs, within the counties. Additional visitor spending would result in long-term negligible to minor beneficial impacts on the regional economy.

Under Alternative 2, hunting and fishing would continue within the NRA, and the number of acres supporting public hunting could potentially expand. Beneficial impacts associated with conservation of fish and wildlife habitat are substantial. CDOW estimates that non-resident hunters and anglers contribute 30% of all hunting and fishing activity days in Colorado. In 2002, all hunters and anglers spent \$23 million in Gunnison County, and created another \$17.6 million in secondary spending. Total economic contribution in Gunnison County supported about 540 jobs. In Montrose County, the figures were \$13.4 million and \$10.2 million, respectively, with 310 jobs supported (Colorado Division of Wildlife 2004). The addition of an employee to the NPS staff to implement and sustain the Proposed Action's recommendations would provide an additional salary of approximately \$80,000 per year, resulting in some increased local spending. A second additional full time equivalent employee (FTE) would eventually be needed for resource and visitor management and protection, interpretation, construction and maintenance, and administration associated with newly acquired interests in land. This translates to a salary of approximately \$80,000 per year, resulting in additional local spending. This would provide stimulus within the local economy, resulting in long-term negligible to minor beneficial impacts.

Payments In Lieu of Taxes and Other Impacts to Regional Revenues. The degree

of impact upon county revenues from the implementation of the resource conservation program of Alternative 2 would depend upon the number of acres that were conserved by each type of tool. The two tools with the greatest potential for adverse impacts on revenues are fee simple acquisition and conservation easements. They are the focus of discussion within this section. A more definitive assessment of the impacts on county revenues will be made at the time a land protection plan is prepared.

Fee Simple Acquisition – There would be a loss of revenue related to property taxes on lands purchased by NPS within the authorized COA. This loss of revenue would be partially mitigated by an increased “Payments in Lieu of Taxes (PILT)” from the federal government to the counties involved. When the government acquires a fee interest in land, two payments are made to the county that received the tax payments while the land was in private ownership to compensate for the loss:

- One (1) % of the fair market value of the property acquired, but not greater than the previous year's real estate tax payment. This payment continues for the first five years; and,
- An entitlement payment that was based on \$1.99 per acre of eligible land in 2002. This payment is made indefinitely from the time the title is transferred to the government. The figure can change from year to year, as it is adjusted for inflationary changes in the Consumer Price Index (NPS 2002c).

Research on the effects of federal land acquisition and PILT payments on the regional economy indicates a variety of outcomes. Some researchers indicate that the impact of federal land ownership on the local tax base is a complicated issue that requires the evaluation of multiple factors. No universal conclusions may be drawn because of these factors (Bodine and Koontz 2003). Other researchers indicate that, because of the way PILT payments are calculated, a county's PILT payment would not necessarily increase if federal land ownership within a county

also increases. Counties with low population densities and large acreages of federally owned land may not realize increases in PILT, particularly if they are already at the payment ceiling (Espy and Owusu-Edusei 2002).

Because PILT payments may not fully compensate for the lost property tax revenue, long-term, negligible to moderate adverse impacts to the regional economy could occur. However, property tax revenue losses could be offset over time by an increase in tourism associated with expansion of the NRA (Espy and Owusu-Edusei 2002; Seidl and Weiler 2001) and decreased infrastructure costs (TPL 1999). Open space typically generates more local tax revenue than the cost of public services it requires. Residential development requires services, such as water, sewer, schools, and other types of infrastructure that is not required with preserved public lands.

Those landowners receiving payments for their properties would provide some stimulus within the local economy through additional purchases resulting in some additional short-term beneficial impacts.

Conservation Easements – Most conservation easements conserve open space and protect land from development and from activities that may damage important resource attributes such as wildlife habitat, riparian areas, and scenic values. The degree to which a conservation easement affects property taxes is variable and depends upon the classification of the land and the restrictions that are imposed through the conservation easement. If a property is valued as agricultural land, it would continue to be valued as agricultural upon creation of a conservation easement. For a conservation easement on vacant land, the assessor's office closely examines the restrictions placed on the property before determining the value. Generally, a conservation easement that allows limited development on a small parcel may not noticeably reduce the taxable value of the land. However, a conservation easement that prohibits any development on a parcel that would otherwise be highly developable may substantially reduce the assessed value (TPL 1999).

Conservation easements within the proposed lands would most likely have a long-term negligible to minor adverse impact on regional revenues, because much of the private property, particularly on the north side in Land Units A (CO 92 COA) and G (West-End COA), is agricultural or vacant. Conservation easements would potentially have less of an effect on these types of properties. More developable areas, such as Sapinero Mesa, could add conservation easements to preserve important resource or scenic areas, while permitting development that is compatible with NRA goals and objectives in areas that are unobtrusive, allowing the county to continue to receive some tax revenues.

Quality of Life. The preservation of important resource values through resource conservation tools would continue to support the quality of life important to many of the residents within the two counties, particularly Gunnison, resulting in long-term negligible to moderate benefits depending upon the areas and acres conserved. Ecosystem service values - those things provided by nature that man would otherwise need to provide for himself- such as air and water filtration, climate regulation, maintenance of biodiversity, scenic beauty, and other benefits would also continue to be maintained and increased, resulting in further long-term benefits (Wilderness Society 2002).

In contrast, some residents could be concerned that increasing conservation activities could attract too many people and change the rural character of the counties. Increasing local population could result in some long-term minor adverse impacts that could slowly change the character of the two counties. However, comprehensive planning activities being undertaken by Gunnison County might minimize or control some of these potential effects.

Cumulative Impacts

Cumulative impacts would generally be the same as Alternative 1, except the actions of Alternative 2 in combination with other planning and land conservation activities would result in minor to moderate beneficial cumulative impacts in the long-term. The

combination of resource conservation efforts in Alternative 2 with other area conservation efforts, such as work done by land trusts and conservation agencies, would result in greater cumulative conservation of key resource values, and associated economic benefits.

Conclusion

The implementation of resource conservation tools would most likely maintain or improve regional economic health by encouraging growth in the retail and service industries, in non-labor total personal income, and in visitor spending resulting in long-term minor to moderate beneficial impacts. If land is acquired, or conserved via conservation easements, long-term negligible to moderate adverse impacts to county revenues could occur, depending upon the conservation method and the land

classification of the property. Any losses in tax revenue could be offset by the spending of long-term residents, and by the decreased need for provision of infrastructure associated with preserved open space.

PRIVATE LAND USE WITHIN THE NATIONAL RECREATION AREA

Guiding Policies and Regulations

Current laws and policies encourage NPS to work cooperatively with owners of oil, gas, and/or other mineral rights within the NRA in order to help achieve desired conditions related to private land use within the NRA boundary. Refer to the following box for details.

DESIRED CONDITIONS FOR PRIVATE LAND USE WITHIN THE NRA	SOURCE
Requests from owners to extract oil, gas, and/or mineral rights are reviewed and permitted according to requirements specified in warranty or other legal deeds, such as the requirement that such activity not interfere with the construction, operation and maintenance of Reclamation works.	<ul style="list-style-type: none"> - Reclamation law, as supplemented and amended - Legal documents, such as warranty deeds and mineral leases, authorizing the right to extract oil, gas, and/or minerals.
Requests from owners to extract oil, gas, and/or mineral rights are reviewed, and permitted or denied, according to law and NPS policy. If denied, and if the owner is willing, NPS will seek to acquire the mineral interest. If permitted, NPS will require such measures as will mitigate impacts to NRA resources.	<ul style="list-style-type: none"> - <i>NPS Management Policies 2006</i> - 36 CFR Part 9, Subpart B (for nonfederal oil and gas) - 36 CFR Part 5 and 36 CFR 1.6 (for other nonfederal mineral interests)
Good relations are maintained with owners of oil, gas, and/or other mineral rights within the NRA. The NRA is managed proactively to resolve external issues and concerns and to ensure that NRA values are not compromised.	<ul style="list-style-type: none"> - <i>NPS Management Policies 2006</i>
The National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts; to conserve NRA resources; and address mutual interests in the quality of life for community residents.	<ul style="list-style-type: none"> - <i>NPS Management Policies 2006</i>

Methodology

This section analyzes the impacts of the alternatives on owners of oil, gas, and/or other mineral rights within the NRA. All of the surface lands and waters within the NRA are owned by the federal government. However, throughout the NRA, there exist retained oil, gas, and/or other sub-surface mineral rights on land that has been acquired by the government. This situation, where one party owns the surface of the land and another party owns the subsurface minerals is known as a “split estate.” All available information on land that has mineral rights held by a party other than the federal government within the NRA was collected.

Actions described in both Alternatives 1 and 2 relate primarily to lands, both private and public, outside the existing NRA, rather than to lands within the NRA. Therefore, neither alternative would have very much impact on owners of mineral rights within the NRA. However, any such impact would be measured by the following thresholds.

Negligible: The impact is barely detectable and would affect few private owners of mineral rights.

Minor: The impact is slight, but detectable, and would affect a minority of private owners of mineral rights.

Moderate: The impact is readily apparent and would affect many private owners of mineral rights.

Major: The impact is severely adverse or exceptionally beneficial and would affect the majority of private owners of mineral rights.

Short-term effects would be less than one year in duration. Long-term effects would be more than one year in duration.

Because this topic evaluates the potential impact to owners of mineral rights, and does not assess impacts on resources within the NRA, impairment is not evaluated.

Impacts of Alternative 1 – No Action

Analysis

Of the roughly 60 mineral interests reserved within the boundaries of the NRA, only one is in operation. The Dickerson Pit is a privately owned mineral materials site that has existed since 1927. The current operator of the site, Gunnison Gravel and Earthmoving, mines and removes decomposed granite and related materials from an area west of US 50, the primary access road through the NRA, east of Blue Mesa Reservoir along the Gunnison River. A Plan of Operations, with an accompanying environmental assessment, was complete by the NRA resulting in the issuance of a special use permit allowing an expansion of the site to a maximum 33.16 acres, subject to the exclusion of a portion of the area that contains significant cultural resources.

In the event that owners of any of the other interests reserved areas choose to conduct mineral development within the NRA, they would do so in conformance with applicable laws and guidelines.

Under Alternative 1, there would be no change to existing land use policy and guidelines regarding reserved mineral rights. NPS would continue to work cooperatively with owners of such rights through a permitting process to allow the owner to exercise those rights while minimizing adverse impacts on NRA resources or visitor enjoyment. Therefore, there would be no impact on people or groups holding mineral rights within the NRA.

Cumulative Impacts

Over the present and reasonably foreseeable future there are no known projects that would affect the opportunity for owners of mineral rights on acquired land within the NRA. Long-term NRA activities, combined with regional activities, would result in long-term negligible minor impacts to owners of mineral rights.

Conclusion

Because private owners of oil, gas, and/or other mineral rights on government-acquired lands would be able to continue to exercise

their rights as provided for under law and policy, there would be no adverse impacts to the control they have over their mineral rights.

Impacts of Alternative 2 – Proposed Action

Analysis

In Alternative 2, the analysis of the situation regarding owners of mineral rights within the NRA is the same as for Alternative 1. As with Alternative 1, there would be no change to existing land use policy and guidelines regarding reserved mineral rights under Alternative 2. NPS would continue to work cooperatively with owners of such rights through a permitting process to allow the owner to exercise those rights while minimizing adverse impacts on NRA resources or visitor enjoyment. However, under Alternative 2, there would be more programmatic funding and authorization to pursue greater incentives for resource conservation that might provide a greater opportunity for financial benefit to the owner of the mineral rights, while more closely meeting NPS resource conservation goals and objectives. Thus, Alternative 2 could provide a minor long term beneficial impact for the owner of the mineral rights.

Cumulative Impacts

Cumulative impacts to owners of mineral rights within the NRA would be similar to those described in Alternative 1. However, due to greater potential for the availability of resource conservation incentives in working with NPS under Alternative 2, cumulative impacts have the potential to be more beneficial to the owner of those rights than under Alternative 1.

Conclusion

As with Alternative 1, because owners of oil, gas, and/or other mineral rights on acquired lands would be able to continue to exercise their rights as provided for under law and policy, there would be no adverse impacts to the control they have over their mineral rights. However, with the potential for NPS to provide more resource conservation incentives under Alternative 2, it would be more beneficial to the owner of mineral rights than Alternative 1.

NEIGHBORING PRIVATE LANDS AND LANDOWNERS WITHIN THE PROPOSED LANDS

Guiding Policies and Regulations

Current laws and policies encourage NPS to work cooperatively with neighbors and local governments in order to help achieve desired conditions and identify mutual interests. Refer to the following box for details.

of action despite which RPS alternative is implemented. Thus, this analysis focuses on some of the perceived or subjective effects that landowners identified during the landowner workshops and that were identified by the National Park Service during agency and public workshops. It also addresses potential changes to land use patterns and property values, should landowners make decisions to develop or conserve properties. Another aspect evaluated was the potential resolution of issues related to private encroachment onto

DESIRED CONDITIONS FOR NEIGHBORING PRIVATE LANDS AND LANDOWNERS WITHIN THE PROPOSED LANDS	SOURCE
Good relations are maintained with adjacent landowners, surrounding communities, and private and public groups that affect, and are affected by, Curecanti National Recreation Area. The NRA is managed proactively to resolve external issues and concerns and to ensure that NRA values are not compromised.	- NPS <i>Management Policies 2006</i>
The National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts; to conserve NRA resources; and, address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, affiliated tribes, neighboring landowners, and all other concerned parties.	- NPS <i>Management Policies 2006</i>
Curecanti National Recreation Area increases its managerial resources through initiatives and support from other agencies, organizations, and individuals.	- NRA Mission Goal

Methodology

Concerns identified by private landowners within the proposed lands were considered in this analysis. Potential effects on private landowners in both alternatives would be the direct result of individual landowner decisions to accomplish one of the following scenarios: (1) maintain their property in its existing condition; (2) conserve resource attributes through a method available from a private conservation organization or an agency, such as the National Park Service; or (3) develop all, or portions of, their property subject to county land use regulations. Essentially, landowners have the freedom to choose their own course

government land, most commonly caused by inadvertent actions or an incorrect survey.

Impact thresholds that measure the intensity of impacts on owners of private land within the COA from actions in the two alternatives are as follows:

Negligible: The impact is barely detectable and would affect few private landowners and/or other non-governmental neighbors.

Minor: The impact is slight, but detectable, and would affect a minority of private landowners and/or other non-governmental neighbors.

Moderate: The impact is readily apparent and would affect many private landowners or other non-governmental neighbors.

Major: The impact is severely adverse or exceptionally beneficial and would affect the majority of private landowners and/or other non-governmental neighbors.

Short-term effects would be less than one year in duration. Long-term effects would be more than one year in duration.

Because this topic evaluates the potential impact to landowners and does not involve resources within the NRA, impairment is not evaluated.

Impacts of Alternative 1 – No Action

Analysis

In this alternative, the private lands within the proposed lands would not be identified as a COA, and the ability of NPS to work with landowners to conserve important resource attributes would consist only of limited technical assistance. Private lands within the proposed lands would most likely remain in their current condition, unless a landowner chose to develop the property or pursue a conservation easement with a private organization. Because landowners would continue to have the freedom to manage their properties, within the limits of Gunnison and Montrose County land use regulations, there would be no impact to private property owners from the NRA.

The ability of the National Park Service to assist landowners in preserving important resources would be limited, as the NRA would have no available funding to purchase conservation easements or pursue fee simple acquisition, and would have limited funds to partner on projects with adjacent landowners. NPS would have to make requests to Congress to acquire easements or lands, and to make additions to the NRA on a case-by-case basis. This process would result in long-term moderate to major adverse impacts to landowners who were interested in pursuing

some form of land conservation with the National Park Service.

Some changes in land use and property values within the proposed lands would most likely occur over the next 5 to 10 years as some lands are sold, subdivided, and developed. Areas most likely to face increasing pressure from residential and/or commercial development include areas along US 50, such as Sapinero Mesa, Hunters Point, Windy Point, and Cimarron (Land Units E and G) because of easy accessibility, existing development in the area, and potential landowner interest in selling their property. Although property values may increase, there is no assurance of that, as other factors can affect property values (consider the oil shale bust of the 1980's, for example). As noted in the Affected Environment, the assessed value of properties in mountain communities such as Gunnison County has increased annually. These changes in land use and property values could be either adverse or beneficial to landowners depending upon the preferences of each landowner and the location of the property.

Under Alternative 1, there would be no change to existing grazing allotments. Therefore, there would be no impact on people who hold grazing permits.

Under Alternative 1, NPS would rely on the authorities and the assistance of Reclamation to correct boundary issues, such as those where encroachment exists or where problems have been caused by previous inaccurate or incorrect surveys. Also, in conjunction with Reclamation, NPS would seek to acquire, preferably in fee simple interest, and include within the NRA, that portion of the Iola Basin high pool in Blue Mesa Reservoir that now lies outside the NRA.”

Cumulative Impacts

Other past, present, and reasonably foreseeable non-NPS planning and resource conservation activities occurring throughout the proposed lands, and with Gunnison and Montrose Counties, could result in a variety of impacts to area landowners. The Gunnison County Comprehensive Plan could result in impacts

to landowners by limiting development to areas that could either adversely or beneficially impact private land values in the proposed lands. In general, planning activities in both Gunnison and Montrose Counties would result in long-term adverse to beneficial cumulative impacts on landowners, depending upon the effects of planning efforts on location of development and resulting land values, as well as the preferences of landowners for open space vs. development.

Local, state, and national conservation groups and land trusts could continue to negotiate for acquisition of conservation easements and private lands within Gunnison and Montrose Counties, providing additional opportunities for landowners to negotiate the most suitable agreement, while maintaining their private property rights. These opportunities would result in long-term minor to major beneficial impacts to landowners.

With respect to NPS activities, the relatively limited resource conservation opportunities afforded by Alternative 1, when combined with the impacts of other land preservation activities, would result in long-term negligible to minor beneficial cumulative impacts on landowners.

Conclusion

Because landowners would continue to have the freedom to manage their properties within the limits of county land use regulations, there would be no adverse impacts to the control they have over their property due to NPS actions. However, the NRA's ability to assist landowners to conserve important resources would be limited, since funding would be unavailable to purchase conservation easements or to pursue fee simple acquisition without congressional approval and appropriation. This would result in moderate to major adverse impacts to landowners who are interested in working in partnership with NPS towards enhanced resource conservation. Changes in land use and property values would most likely occur, but would range from adverse to beneficial, depending on landowner preferences.

Impacts of Alternative 2 – Proposed Action

Analysis

This alternative identifies a COA consisting of private lands adjacent to the proposed NRA boundary, in which NPS would be authorized to negotiate resource conservation mechanisms with landowners. It is anticipated that some funding would be appropriated to implement these mechanisms after legislation authorizes establishment of the NRA under Alternative 2. Landowners with private property within the COA would be under no obligation to partner or negotiate with NPS, nor would NPS have any authority to utilize condemnation or other measures not in partnership and cooperation with landowners. Because landowners would continue to have full private property rights, there would be no impacts from Alternative 2 on property rights of landowners.

Some landowners would benefit from the availability of resource conservation tools and NPS funding to conserve resource characteristics on their property. With congressional authorization, and subject to competing demands from other NPS units, there would be more opportunity for funds to be made available for acquisition of fee title or conservation easements from willing landowners in the COA. Depending upon the type of agreement, easement or purchase negotiated between a landowner and the National Park Service, a variety of benefits could accrue to landowners. When landowners place conservation easements on their properties, they voluntarily limit their ability, as well as that of subsequent owners, to develop all, or portions of, their properties. They thereby permanently preserve open space, agricultural, scenic, or other resource values. A landowner may become eligible for certain tax benefits by donating these relinquished rights and by meeting specific conditions outlined in the Internal Revenue Code (IRC). These benefits include reductions in federal and state income taxes and estate and inheritance taxes. Landowners could also negotiate fee simple acquisition with NPS, whereby NPS would purchase a landowner's property for the appraised

value. The availability of these conservation opportunities, tax benefits, and purchase options could result in long-term minor to major benefits to interested landowners, depending upon the tool employed, negotiated specifics, and the number of landowners that choose to participate.

Other landowners believe that the creation of the COA could impede their private property rights simply due to its existence and the stated interest of NPS in the resources on their lands. Some landowners perceive that the COA would be a target area for acquisition and that a future administration could authorize condemnation despite landowner sentiment.

Land use patterns and property values would most likely remain similar to Alternative 1, although there would be a greater likelihood that conservation values on private properties would be preserved via resource conservation mechanisms, and less development would occur. Private property values would most likely continue to increase. Similar to Alternative 1, the impact on landowners would range from adverse to beneficial depending upon landowner preferences and the location of their property relative to conserved areas and development.

Grazing on private lands within the COA would be unaffected by Alternative 2. Grazing permits for allotments that include federal land within the NRA would continue to be renewed at the request of the permit holder.

Under Alternative 2, NPS would utilize its own authority to make minor adjustments to the proposed boundary, or may request clarification of such authority through legislation. This would enable NPS to work with landowners to correct boundary and encroachment issues now known to exist, or that may be identified in the future, due to factors such as previous inaccurate or incorrect surveys. Also, in conjunction with Reclamation, NPS would seek to acquire, preferably in fee simple interest, and include within the NRA, that portion of the Iola Basin high pool in Blue Mesa Reservoir that now lies outside the NRA.

Cumulative Impacts

Other past, present and reasonably foreseeable non-NPS planning and resource conservation activities occurring throughout the proposed lands and with Gunnison and Montrose Counties could result in a variety of impacts to area landowners. The Gunnison County Comprehensive Plan could result in impacts to landowners by limiting development to areas that could either adversely or beneficially impact private land values in the proposed lands. In general, planning activities in both Gunnison and Montrose Counties would result in long-term adverse to beneficial cumulative impacts on landowners, depending upon the effects of planning efforts on location of development and resulting land values, as well as the preferences of landowners for open space vs. development.

Local, state, and national conservation groups and land trusts could continue to negotiate for acquisition of conservation easements and private lands within Gunnison and Montrose Counties, providing additional opportunities for landowners to negotiate the most suitable agreement, while maintaining their private property rights. These opportunities would result in long-term minor to major beneficial impacts to landowners.

With respect to NPS activities, resource conservation opportunities afforded by Alternative 2, when combined with the impacts of other land preservation activities, would result in long-term moderate to major beneficial cumulative impacts on landowners.

Conclusion

Landowners would be under no obligation to negotiate with NPS, nor would NPS have any condemnation or other authority to take private lands within the COA without full consent of and compensation to the landowner. Because landowners would continue to have full private property rights within the limits of county land use regulations, there would be no adverse impacts to the control they have over their property as a result of NPS actions.

However, the availability of a full range of resource conservation opportunities and tax benefits could result in long-term minor to major benefits to interested landowners. Changes in land use and property values would most likely occur, but would range from adverse to beneficial depending upon landowner preferences.

NATIONAL PARK SERVICE, RECLAMATION, AND OTHER NEIGHBORING AGENCY MANAGEMENT AND OPERATIONS

Guiding Policies and Regulations

Current laws and policies encourage NPS to work cooperatively with neighboring agencies in order to help achieve desired conditions related to management and operation issues. Refer to the following box for details.

Methodology

NPS, Reclamation, and Other Neighboring Agency Management and Operations, for the purpose of this analysis, refers to all administrative management and operations considerations, and the adequacy of staffing levels and operational budgets, in order to adequately manage the agency's lands and accomplish its mandated goals within the proposed lands. Workshops were held with representatives from each of the federal, state, and county agencies with land management responsibilities within the overall proposed lands. More specifically, each land unit was discussed in detail, including existing operations and potential operational and management impacts, if the Proposed Action alternative were implemented.

The area of analysis was two-fold: regional, encompassing the overall proposed lands; and site-specific by individual land unit. For impacts on NPS management and operations, both agency transfer lands and the potential addition of private lands to the NRA were considered. For impacts on neighboring federal and state agency management and operations, only the

DESIRED CONDITIONS FOR NPS, RECLAMATION, AND OTHER NEIGHBORING AGENCY MANAGEMENT AND OPERATIONS	SOURCE
In the spirit of partnership, the National Park Service seeks opportunities for cooperative management agreements with federal, state, and local agencies that would allow for more effective and efficient management of Curecanti National Recreation Area.	<ul style="list-style-type: none"> - <i>NPS Management Policies 2006</i> - National Parks Omnibus Management Act of 1998, Section 802
Possible conflicts between alternatives and land use plans, policies, or controls for the area concerned (including those of federal, state, and local governments, and Indian tribes) and the extent to which the NRA would reconcile the conflict are identified in environmental documents.	<ul style="list-style-type: none"> - National Environmental Policy Act
NPS works cooperatively with others to anticipate, avoid, and resolve potential conflicts; to conserve NRA resources; and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, affiliated tribes, neighboring landowners, and all other concerned parties.	<ul style="list-style-type: none"> - <i>NPS Management Policies 2006</i>
Manage the area as a part of the greater riverine ecosystem, coordinating with other land management agencies.	<ul style="list-style-type: none"> - NRA Mission

federal and state land transfers were assessed. Private lands acquired for the NRA would not have management and operational impacts on the neighboring agencies.

Impact thresholds that measure the relative change in agency operations as a result of each alternative are as follows.

Negligible: NRA, or other agency operations, would not be affected, or the action would not have a noticeable or appreciable effect on operations.

Minor: Effects would be noticeable, but would be of a magnitude that would not result in an appreciable or measurable change to NRA or other agency operations.

Moderate: Effects would be readily apparent and would result in a substantial change in NRA, or other, agency operations that would be noticeable to staff and the public.

Major: Effects would be readily apparent and would result in a substantial change in NRA, or other, agency operations that would be noticeable to staff and the public, and would be markedly different from existing operations.

Short-term effects would only occur during one operating year. Long-term effects would persist beyond the initial transfer of lands between agencies or beyond one operating year.

Because this topic does not evaluate the potential impacts on natural or cultural resources contained within the NRA, impairment is not evaluated.

Impacts of Alternative 1 – No Action

Analysis

NPS, and other agency operations, would remain the same as described in the Affected Environment. No federal land transfers would occur. The management responsibilities and maintenance operations of each individual agency would be executed with existing staff and budget. However, ongoing management and staff labor costs would be

incurred by NPS to address public requests for information related to the toolbox for resource conservation. Potential development of private lands in the vicinity of the NRA, such as in Land Units A (CO 92 COA), E (Sapinero/Blue Mesa COA), and G (West-End COA), where private lands are adjacent to US 50, could also result in additional staff time if commercial development congregated visitors in areas throughout the NRA or along the roadway. This would probably result in resource issues that would have to be resolved, and additional maintenance costs. Additional staff needs could result in long-term, minor adverse impacts to the NRA operating budget.

The Bureau of Reclamation and Western Area Power Administration would continue their responsibilities within and adjacent to the national recreation area, including construction, operations, maintenance, replacement, and additions, consistent with Reclamation law, and other applicable laws and regulations. Reclamation, Western, and the National Park Service would consult with each other as necessary and appropriate. Thus, there would be no adverse impacts to Reclamation and Western responsibilities under Alternative 1.

Existing permits, such as grazing, would continue in their current state. Grazing within the NRA would continue to be administered in cooperation with the current administering agency (BLM or USFS).

Areas where the boundary between the NRA and other agency lands is difficult to identify would continue to cause some ongoing confusion for agencies and the public, resulting in a long-term, negligible adverse impact. One example of such an area is in Land Unit B, where the boundary is irregular, bending around BLM and CDOW lands in a number of locations. Another example is at Dry Creek, where NPS facilities occur on CDOW land under an agreement.

The existing condition requires Reclamation to develop, negotiate, implement, and maintain local agreements with at least two land management agencies (NPS and BLM) for its lands within and adjacent to the NRA.

This activity and the associated personnel and costs for coordinating management on these lands create a minor long-term expense for all three agencies.

Cumulative Impacts

Cumulative impacts to agency operations would not result from implementation of Alternative 1.

Conclusion

The ongoing requests for information related to resource conservation on adjacent private lands and potential resource and visitor use impacts associated with potential development of private lands adjacent to the NRA would result in long-term minor adverse impacts to NRA operations.

Impacts of Alternative 2 – Proposed Action

Analysis

National Park Service. It is expected that implementation of Alternative 2 would occur over a number of years into the future. It would require the following additional efforts of NRA staff:

- Perform as NRA liaison with private landowners, adjacent land management agencies, county planners and officials, and other neighbors and stakeholders
- Write and implement a land protection plan
- Work with private landowners to implement the tools of resource conservation, including negotiations leading to acquiring interests in land
- Coordinate land appraisals and environmental assessments
- Implement boundary surveys, marking and posting, and fencing
- Write grant proposals
- Monitor conservation easements
- Provide and/or coordinate technical assistance to neighboring private

landowners in the areas of natural, historical, and archeological resource conservation and enhancement, especially preserving and improving natural habitat, and conserving water quality; planning, siting, and design considerations for development; and protecting life and property from wildfire

- Coordinate the Joint Agency Management Effort
- Coordinate the development and execution of an implementation plan for new lands.

In addition, as more interests in land are acquired over time, there would be an increasing requirement for NRA staff in the following areas of operations.

- To monitor and conserve the natural and cultural resources on those lands
- To administer grazing permits that exist on lands transferred to the NRA
- To provide for additional recreational and interpretive opportunities, and the safety of visitors
- To construct and maintain the necessary and appropriate facilities for resource conservation and visitor use, such as fencing and trails
- To provide administrative support for technical assistance to neighbors.

If funding is not provided for additional staff to perform the above duties, Alternative 2 would have a long-term, major, adverse impact on NPS operations. However, if additional staff is available to perform these duties, there is expected to be a long-term moderate beneficial impact to NPS operations, due to enhanced cooperation from landowners and other neighbors in the realm of resource conservation. It is for these reasons that this study recommends an increase in the NRA's base funding to hire additional employees to accomplish these tasks. Ultimately, two additional full-time equivalent employees (FTE) would be needed to fully implement the proposed action. This is discussed in more

detail in the section on “Estimated Costs, Staffing Requirements, and Implementation Strategy” for Alternative 2 in the Alternatives, Including the Proposed Action chapter.

A potential of 10,040 net acres of land from other federal and state land management agencies would be transferred by Congress to NPS in Land Units B (Blue Mesa Reservoir Agency), F (Gateview Agency), and H (West-End Agency) for inclusion in the NRA upon approval of the Proposed Action. Into the near and distant future, up to 24,300 additional acres in private land within the COA could be potentially acquired or managed via conservation easements or other conservation tools if private landowners were willing to sell their lands or execute such agreements. The most likely scenario is that a relatively small percentage of these lands would be so managed. Current thinking is that approximately one tenth (2,400 acres) would eventually be acquired in fee simple, and included within the NRA; and approximately one third (8,100 acres) would eventually come under conservation easements. One reason is that to the greatest extent possible, NPS would pursue tools of a partnership nature with willing landowners, conservation organizations, land trusts, and other agencies, that would result in the least amount of cost to the government, while still satisfying resource conservation goals and objectives, as well as landowner goals and objectives. The potential impacts on the National Park Service of federal and state land transfers and the inclusion of private lands within the COA are discussed in two separate sections below.

1. Federal and State Land Transfers - Land transfers between other agencies and NPS would simplify existing boundaries between agencies and improve NPS operations in site-specific areas, resulting in long-term negligible to minor beneficial impacts. Additions of federally owned lands or facilities could result in long-term adverse negligible to minor impacts to site-specific NPS operations and staffing, unless additional staff was authorized. The potential transfer of the Gateview facilities (recommended for BLM administration) would, in part, offset

this workload. Still, it is expected that some staff would be needed to perform additional maintenance services, visitor and resource protection, and resource management duties due to the addition of lands.

- Land Unit B: Blue Mesa Reservoir Agency
 - USFS and BLM lands from the existing NRA (north of Sapinero Basin) to the southern edge of the West Elk Wilderness Area would be transferred to the National Park Service, including the Soap Creek Campground that is currently managed by the USFS. The management of the area by one agency rather than by three would provide long-term, moderate benefits to visitors, because the area would be managed under the guidelines of only one agency, and that agency would be the sole presence or contact for visitors. Furthermore, management by one agency rather than by three would provide for overall operational efficiencies.
 - Because of the NPS existing presence along the Soap Creek Arm and Soap Creek Road, the National Park Service would be able to easily manage this area, including the road, the Soap Creek campground, and area resources, with only long-term, negligible to minor impacts to NRA operations. Existing concession operations and permits in the area (campground maintenance and outfitters) would need to be transferred to the National Park Service or terminated. If terminated, it would result in some adverse impacts to existing concessionaires.
 - Haystack Cave, an archeological site now managed by BLM, but adjacent to NPS facilities and headquarters at Elk Creek, would receive a heightened level of protection and scientific activity,

- because NPS rangers and resources staff work in the vicinity more frequently than BLM personnel.
- Some USFS land now being managed within the NRA would be excluded from the NRA. These consist of two parcels (shown as Tract 8 and Tract 9 on the Alternative 2 map) that sit west of the Soap Creek Road. By letting USFS administer these parcels, the road in this vicinity would become the proposed boundary between NPS and USFS, which would provide some efficiency for both agencies in administering the land.
 - BLM lands in the eastern portion of this land unit would remain in their current, undeveloped condition and would continue to be managed for critical winter range and other wildlife habitat values.
 - Under Alternative 2, the National Park Service would receive authorization to facilitate land exchanges with CDOW that would improve operations and management efficiencies for both organizations. All such transfers would be subject to CDOW approval. These lands would continue to be managed for critical winter range and other wildlife habitat values. CDOW would benefit by consolidating lands in the Centennial State Wildlife Area and/or Sapinero State Wildlife Area. NPS would benefit by including what are now CDOW isolated parcels within the proposed NRA boundary. This includes land in Dry Creek, East Elk Creek, and Beaver Creek. Currently, NPS facilities exist under agreement on the Dry Creek CDOW parcel, and East Elk Creek facilities are accessed via a road that crosses CDOW land. Simplification of the northern NRA boundary in this land unit for easy recognition by agency personnel and the public would also contribute to this beneficial impact.
- Land Unit F: Gateview Agency
 - Because the Gateview Campground and historic resources in the area are a distance from other facilities within the NRA, the transfer of these facilities to BLM would result in a long-term beneficial impact to NRA operations. Minor beneficial effects related to maintenance costs would occur in this area because the water system would no longer be maintained and tested, nor the restroom facilities cleaned by NPS staff on a regular basis. These functions would be transferred to BLM. The National Park Service would continue to pump the pit toilets at the campground and maintain the road to the area under an agreement with BLM.
 - Land Unit H: West-End Agency
 - Although the transfer of lands from BLM and USFS to NPS that is proposed throughout this land unit would result in some operational and administrative efficiencies for the National Park Service, the net result would be long-term minor adverse impacts on NPS operations, if the recommended additional staff were not provided to accommodate the additional management responsibilities that would ensue. There would be more land to patrol, and more wildlife and grazing to manage. Furthermore, although the BLM lands to be transferred are contiguous with the existing NRA, some are isolated parcels with difficult access.
 - Some of the transferred lands, upon Reclamation revocation, could be available for future NPS land exchanges that would help conserve

the viewshed in the vicinity of
Morrow Point or Crystal Reservoirs.

- All Agency Land Units (B, F and H)

- Grazing

- USFS lands proposed for transfer to the National Park Service along CO 92 include acreage in the vicinity of the Long Gulch – Bear Trap Gulch area. Due to the large 30,000 acre grazing allotment in this location, the proposed COA was adjusted from an earlier proposal to ensure that the vast majority of the grazing allotment remains outside the NRA. NPS also reduced the width of the Crystal Trail corridor to minimize this impact. USFS would continue to manage the grazing allotment, and NPS and USFS would enter into a new agreement to reflect the new situation. Thus, negligible impacts would occur to USFS grazing allotment permittees, as the USFS would continue to manage this large, early season grazing allotment on those lands lying outside the NRA.
 - BLM grazing allotments would be administered via agreement with the involved agencies. The likely scenario for most grazing is that allotments would consist of land outside and within the NRA. Grazing would be allowed to continue where authorized under existing permits, unless the permittee requests a voluntary termination. Arrangements for managing grazing would be worked out on a case-by-case basis, and documented in an agreement with the involved agencies. In cases where an allotment still contains a significant amount of BLM land, it is expected

that the BLM would continue managing that allotment; and in cases where little or no BLM land is in the allotment, NPS would likely manage the allotment, or through agreement, contract with the BLM to manage the allotment. Refer to Table 15, which appears later in this section, for a listing of identified allotments, and potential management scenarios. This activity would result in negligible to minor, long-term adverse impacts to NPS from additional management responsibilities, if the recommended additional staff were not provided. As noted earlier, there would be no impact to grazing permittees.

- Mining Activity

- There are no known, active mineral claims or leases on the lands proposed for transfer to NPS.
 - Transferred federal and acquired state lands added to the NRA would be administered under the laws, regulations, and policies for units of the national park system. However, for clarity, it is recommended that when Congress introduces legislation to establish the NRA, that language be included to, except for valid existing rights, withdraw all such lands from all forms of entry, appropriation, or disposal under the public land laws; location, entry, and patent under the mining laws; and from disposition under all laws relating to mineral and geothermal leasing, and all amendments thereto.
 - In the event a parcel contains a “split estate,” whereas the surface would be transferred

to NPS, but the mineral estate would remain in private ownership, NPS will manage such mineral estates according to NPS *Management Policies 2006*: “The Park Service may approve operations associated with nonfederal oil and gas interests under the standards and procedures in 36 CFR Part 9, Subpart B. If an operator’s plan fails to meet the approved standards of these regulations, the Park Service generally has authority to deny the operation and may initiate acquisition. Operations associated with nonfederal mineral interests, other than oil and gas, are subject to the requirements of 36 CFR Part 5, “Commercial and Private Operations,” and 36 CFR 1.6. The Service must determine that operations associated with these mineral interests would not adversely impact “public health and safety, environmental or scenic values, natural or cultural resources, scientific research, implementation or management responsibilities, proper allocation and use of facilities, or the avoidance of conflict among visitor use activities ...” If the impacts from the operation on the resource cannot be sufficiently mitigated to meet this standard, the Park Service may seek to acquire the mineral interest.”

2. *Private Lands within the COA* – Private lands within the COA occur in Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA) and G (West-End COA). If a land-owner were willing, and funding is available from Congress, resources on any private parcel within these units could be conserved with various tools, such as general agreements, conservation easements, and fee simple acquisition.

Impacts on NPS management and operations from the implementation of the available conservation tools would depend upon considerations such as the interest that the National Park Service acquired in a piece of property, whether NPS would assume some degree of management responsibility, and the location of the property relative to existing access. Many of these types of issues would be evaluated in a suitability and feasibility analysis, as required by the NPS boundary adjustment criteria, prior to the completion of any agreement between a landowner and NPS (see the discussion of boundary adjustment criteria in the Alternatives chapter, in the section on Development of Alternatives). Conservation easements and land acquisition would result in added responsibilities to NRA staff of resource monitoring, resource management, and/or visitor protection. Depending on the extent and location of the land involved, this would result in long-term minor to major adverse impacts on NPS field operations, if additional funding were not provided. However, if additional staff is available to perform these duties, there is expected to be a long-term moderate beneficial impact to NPS operations. This is why Alternative 2 recommends hiring additional staff.

Under Alternative 2, if land within the COA is acquired, NPS could adjust the proposed NRA boundary to include the acquisition without additional congressional action, resulting in reduced staff work, and short-term minor to moderate beneficial impacts to NPS operations. New NRA legislation, a revised agreement between Reclamation and NPS, and streamlining, or potential elimination, of other agreements among various agencies, would provide a long-term, minor, beneficial impact to agency operations, by reducing associated personnel and costs for managing the lands and agreements.

There would be a long-term minor to moderate beneficial impact on NPS ability to meet its mission, due to appropriately worded legislation for the NRA, improved wording in a new MOA with Reclamation, and increased consultation and cooperation between NPS

and other agencies, including Reclamation. This improvement in consultation and cooperation among the agencies is already happening, through the Joint Agency Management Effort, which is integral to the RPS.

Bureau of Reclamation. As with Alternative 1, the Bureau of Reclamation and Western Area Power Administration would continue their responsibilities within and adjacent to the national recreation area, including construction, operations, maintenance, replacement, and additions, consistent with Reclamation law, and other applicable laws and regulations. Formal establishment of the NRA would not amend or supplement existing Reclamation law applicable to the Aspinall Unit or the Uncompahgre Project. Reclamation, Western, and the National Park Service would consult with each other as necessary and appropriate. Thus, there would be no adverse impacts to Reclamation and Western responsibilities under Alternative 2.

Reclamation would continue to hold underlying administrative jurisdiction on 41,860 acres within the proposed NRA boundary. The National Park Service would cooperate with Reclamation as a continuing partner of the Aspinall Unit, overseeing recreation, resource management, recreation facility construction and maintenance, interpretation, education, and resource and visitor protection. At the same time, Reclamation would continue to operate the dams, power plants, reservoir flow operations, and have access to the same, unimpeded by NPS operations. As a result, there would be no impact to Reclamation operations from NPS activities, or from conservation activities within the adjacent COA.

Although the National Park Service manages recreation and certain other resources on Reclamation lands and land interests within the NRA in accordance with the 1965 Memorandum of Agreement with Reclamation, new interests acquired by NPS in private lands would not fall under this agreement, with one exception. If private lands near Willow Creek (Land Unit D) were acquired, the land area within and adjacent to the high pool of

Blue Mesa Reservoir would be managed for Reclamation and NPS purposes.

It is anticipated that additional work would be required to redraft the 1965 Memorandum of Agreement to restate and update information pertinent to legislation that might be passed to formally establish the NRA. Also, Reclamation may conduct future reviews of land it administers to determine which parcels, if any, it would recommend for revocation of withdrawal. Upon agreement with the National Park Service, NPS would assume full administrative authority over any lands (within the Alternative 2 proposed boundary) so revoked. This workload is expected to result in a negligible to minor adverse impact to Reclamation, as this work would likely occur in any case.

Bureau of Land Management. A total of 5,840 acres of BLM land would be transferred to the National Park Service in Land Units B (Blue Mesa Reservoir Agency), F (Gateview Agency), and H (West-End Agency), resulting in long-term negligible to minor beneficial impacts to BLM operations in site-specific areas because of fewer maintenance and other operational obligations.

- **Land Unit B (Blue Mesa Reservoir Agency).** The impact of transferring the Dillon Pinnacles ACEC and portions of the West Antelope ACEC to NPS would be negligible to minor beneficial because NPS would manage the area with similar emphasis on recreation and wildlife habitat, and the BLM currently has limited presence in the area. BLM would also receive minor operational benefits from rescinding some of its responsibility for managing local cultural resources, as well as for some of the BLM lands north of the Dickerson gravel pit. A defined NRA boundary and presence could prevent some existing trespass issues.
- **Land Unit D (Iola Basin COA).** The potential acquisition of private properties in the vicinity of Willow Creek could result in additional long-term, negligible to minor adverse

operational impacts to BLM, if the land were transferred to allow BLM to manage local hang gliding activities. NPS could sustain similar impacts if the lands were acquired and remained in NPS management.

- **Land Unit F (Gateview Agency).** Actions at Gateview will depend upon determination by Reclamation as to whether to revoke, or not, the withdrawal on 120 acres of land in the Gateview area. Should the revocation be approved, this study would recommend that Tract 10 be excluded from the NRA and transferred to BLM for administration and management. In the interim, NPS could seek to enter into an agreement with BLM to allow BLM to manage that portion of the NRA. Since BLM already has a presence in the area, this would result in only a long-term, negligible adverse impact to BLM operations. Maintenance of existing facilities within the campground, such as the pit toilets, would be added to the existing BLM maintenance schedule. However, under BLM management, the potable water system would probably be discontinued, given its daily maintenance requirement; and visitors would be asked to haul in their own water from elsewhere, just as they do in BLM's other campgrounds in the area. NPS would most likely continue to pump toilets and maintain the road to the campground. However, should those commitments be relinquished, operational impacts to the BLM could increase.
- **Land Unit H (West-End Agency).** Actions pertaining to Tract 1 will depend upon determination by Reclamation as to whether to revoke, or not, the withdrawal on 680 acres of land west of Cimarron. Should the revocation be approved, this study would recommend that Tract 1 be excluded from the NRA and transferred to BLM for administration and management. In the interim, NPS could seek to enter into an agreement with BLM to allow BLM to manage that portion of the NRA.

Negligible beneficial impacts to BLM would occur with transfer of lands on the western end of the proposed lands because existing management costs are minimal. Much of the area is inaccessible and in rugged terrain.

- **Grazing.** Several of the parcels of land proposed for transfer from BLM to the NRA contain grazing allotments. In some cases, the allotments already occur on existing parcels within the NRA. In most cases, the result of the transfer of land from BLM to the NRA would result in a particular allotment containing land both within and outside the NRA. Grazing would be allowed to continue where authorized under existing permits, unless the permittee requests a voluntary termination. Arrangements for managing grazing would be worked out on a case-by-case basis, and documented in an agreement with the involved agencies. In cases where an allotment still contains a significant amount of BLM land, it is expected that BLM would continue managing that allotment; and in cases where little or no BLM land is in the allotment, NPS would likely manage the allotment, or through agreement, contract with BLM to manage the allotment. Refer to Table 15, which follows, for a listing of identified allotments, and potential management scenarios. This activity would result in negligible to minor, long-term adverse impacts to NPS operations from additional management responsibilities, if the recommended additional staff were not provided. As noted earlier, there would be no impact to grazing permittees.

Colorado Department of Transportation / Federal Highway Administration. The National Park Service would continue to cooperate and coordinate with CDOT/FHWA regarding maintenance and construction activities and traveler enhancements that occur on and along US 50, CO 92, and CO 149. NPS would likely seek to enter into an agreement with CDOT/FHWA in order to

TABLE 15: BUREAU OF LAND MANAGEMENT GRAZING ALLOTMENTS WITHIN THE CURRENT AND PROPOSED NATIONAL RECREATION AREA

Allotment Name	General Location	Allotment Composition and Management under Alternative 1 (No Action) ¹				Allotment Composition and Management under Alternative 2 (the Proposed Action) ²			
		BLM	NPS	Private	Managed by	BLM	NPS	Private	Managed by
Beaver Creek	N of Gunnison River Canyon	98% ³	2%	0%	BLM	97% ³	3%	0%	BLM
Big Willow	W of Gateview	40%	2%	58%	BLM	40%	2%	58%	BLM
Blue Creek	W of Blue Creek	6%	13%	81%	BLM	2%	17%	81%	NPS
Dead Horse	N of Crystal Dam	17%	12%	71%	BLM	14%	15%	71%	BLM
Fitzpatrick Mesa	S of Morrow Pt. Reservoir	36%	0%	64%	BLM	0%	36%	64%	NPS
Highway	S of Morrow Pt. Reservoir	78%	0%	22%	BLM	0%	78%	22%	NPS
Iola	Iola and Kezar Basins	82%	5%	13%	BLM	82%	5%	13%	BLM
North Cimarron	N of Morrow Pt. Reservoir	0%	6%	94%	BLM	0%	6%	94%	NPS
Pine Mesa	S of Blue Mesa Dam	0%	90%	10%	BLM	0%	90%	10%	NPS
Rawhide / Coffee Pot	W of Crystal Reservoir	28%	20%	52%	BLM	27%	21%	52%	BLM
Round Corral Crk	S of Morrow Pt. Reservoir	36%	9%	55%	BLM	0%	45%	55%	NPS
Round Corral Sprg	S of Morrow Pt. Reservoir	9%	18%	73%	BLM	0%	27%	73%	NPS
Sapinero Mesa	S of Sapinero Basin	42%	26%	32%	BLM	42%	26%	32%	BLM
Spring Gulch	NE of Crystal Dam	5%	42%	53%	BLM	2%	45%	53%	NPS
Steuben Creek	N of Lake City Bridge	90%	1%	9%	BLM	90%	1%	9%	BLM
Stevens Creek	N of Iola Basin	97% ³	3%	0%	BLM	95% ³	4%	0%	BLM
Ten Mile Springs	E of Gateview	88%	2%	10%	BLM	87%	3%	10%	BLM
Windy Point	E of Blue Creek	0%	31%	69%	BLM	0%	32%	68%	NPS
¹ Under Alternative 1, all allotments continue to be managed by BLM under interagency agreement.									
² The proposed management under Alternative 2 is a likely scenario, subject to a new interagency agreement.									
³ Allotment includes state (CDOW) lands.									

identify operation and waste and fill storage issues that could be mutually agreed upon to minimize the impact of highway maintenance and construction operations on Curecanti resources and the visitor experience.

In the vicinity of the East Cimarron day-use area, NPS would seek to remedy a boundary issue where some of the NPS facilities lie outside the NRA boundary within the CDOT right-of-way. The National Park Service would either enter into an agreement with CDOT to recognize the issue and address how future maintenance of the facilities outside the NRA would occur, or would work with CDOT to accomplish a mutually agreed upon adjustment of the proposed boundary, so that it includes all NPS facilities at East Cimarron.

Potential conservation projects, such as conservation easements, would provide benefits to travelers on the West Elk Loop Scenic and Historic Byway, especially along CO 92 above Morrow Point and Crystal Reservoirs. Resource conservation objectives identified in the byway's corridor management plan would more likely be achieved with the establishment of the COA.

Colorado Division of Wildlife. The northern boundary of the NRA in Land Unit B (Blue Mesa Reservoir Agency) would be simplified in the vicinity of Dry Gulch Campground and East Elk Group Campsite by the inclusion of 140 acres of CDOW property, resulting in negligible to minor beneficial impacts to CDOW because of increased administrative efficiency. After authorization, NPS would work with CDOW and BLM to identify lands that could be exchanged for the land to be included in the NRA. Such an exchange would need to meet the requirements of the Pittman-Robertson Act of 1937, and other laws and policies of the federal and state agencies involved. The National Park Service would not modify the manner in which the land to be included is presently managed. The land received in exchange would help CDOW consolidate ownership within the State Wildlife Areas adjacent to the NRA, where now some federal public lands are interspersed within the CDOW land. This would result in administrative efficiencies for NPS, BLM, and CDOW, and a

clearer understanding by the public of where the proposed NRA boundary is located.

U.S. Forest Service. A net of 2,885 acres of Forest Service land would be transferred to NPS in Land Units B and H, resulting in long-term minor to moderate beneficial impacts to Forest Service operations in site-specific areas because of fewer maintenance and other operational obligations.

- Land Unit B: Blue Mesa Reservoir.** As noted earlier in the NPS section, the transfer to the National Park Service of Forest Service land and the Soap Creek Campground in the vicinity of Soap Creek and West Elk Creek Arms would result in long-term, moderate beneficial impacts to both the Forest Service and NPS from consolidation of operations. Forest Service would no longer maintain the campground or Soap Creek Road, beneficially impacting their operational budget. NPS would assume responsibility for road maintenance, in cooperation with USFS and Gunnison County. The road would become the proposed boundary between NPS and USFS land in this vicinity, clarifying responsibilities for staff, and understanding of the location of Forest Service lands and NRA lands for the public.
- Land Unit H: West-End.** Lands long managed by NPS under an agreement with USFS would be transferred to NPS in the vicinity the Long Gulch / Bear Trap area, and would include the strip of land containing the Crystal Trail. Additional lands, primarily consisting of drainages and cliffs into the canyon, would also be included, as mutually agreed upon by NPS, USFS, and members of the grazing pool for that grazing allotment. As in the past, NPS would manage the trails and recreational opportunities. NPS and USFS would still need an agreement pertaining to grazing within the NRA, but the situation would remain very similar to the current situation. Thus, negligible impacts would occur to grazing allotment permittees, as the

Forest Service would continue to manage this large early season grazing allotment on those lands lying outside the NRA, and the cattle would still have access to cross the trail corridor as they have done in the past. This action would result in long-term negligible to minor beneficial operational and administrative efficiencies for the National Park Service.

As both national park system and national forest system units have boundaries that are generally legislatively established, it would be necessary, through legislation, to modify the boundary of the Gunnison National Forest, for those areas affected, should Alternative 2 actions pertaining to land transfers be implemented.

Western Area Power Administration.

Western would continue to have uninterrupted access to transmission lines, access roads, and related facilities for the purposes of reconstruction, repair, maintenance, and operation activities. Resource conservation activities proposed within Alternative 2 would not impede the replacement of poles, structures, or conductors, preclude vegetation management, or prevent road maintenance and improvements. Western's easements across lands within the COA would be unaffected. Therefore, there would be no impacts to Western's operations by implementation of this alternative.

Cumulative Impacts

Other federal planning and management activities within or adjacent to the NRA have involved agency land transfers and other operational commitments in the past and could require additional transfers and operational commitments in the future. Some of these actions include the recent designation and expansion of the Black Canyon of the Gunnison National Park, the expansion of the Gunnison Gorge National Conservation Area, additions of wilderness in Black Canyon and Gunnison Gorge, potential expansion of the West Elk Wilderness Area into the administrative areas of three different agencies, and ongoing acquisition of conservation

easements by private trusts and public agencies. Such transfers or acquisitions can result in minor adverse impacts to agency operations budgets in the short and long-term. When combined with the negligible to minor adverse impacts associated with actions proposed in Alternative 2 of the Curecanti RPS, long-term minor to moderate adverse impacts could occur to federal agency budgets, such as that of the National Park Service, if additional operational funds are not provided to meet management needs created by acquisitions and transfers.

Conclusion

If funding is not provided to hire the necessary staff that would be needed to perform the additional office and field duties that would be required to implement Alternative 2, there would be a long-term major adverse impact on NPS operations. If additional staff is available to perform these duties, there is expected to be a long-term moderate beneficial impact to NPS operations, due to enhanced cooperation from landowners and other neighbors in the realm of resource conservation. It is for these reasons that this study recommends an increase in the NRA's base funding to hire a sufficient number of full-time-equivalent (FTE) employees to accomplish these tasks, and to make Alternative 2 become a reality.

Land transfers between the National Park Service and other agencies would simplify existing boundaries between agencies and improve NPS operations in site-specific areas, resulting in long-term negligible to minor beneficial impacts to NPS.

Other agencies, such as USFS, BLM, and CDOW would experience negligible to moderate beneficial impacts to operations, depending upon the location and change in agency responsibility associated with the land transfer. In some locations, long-term negligible adverse impacts could occur to existing maintenance schedules, where an agency would assume new responsibilities. Reclamation and Western responsibilities would continue to be a priority within the NRA; therefore, there would be no impacts to their operations.

All agencies should realize a long-term minor to moderate beneficial impact to operations due to appropriate wording in new NRA legislation; improved wording in a new MOA between Reclamation and NPS; and increased consultation and cooperation among all agencies through the Joint Agency Management Effort, which is integral to the RPS.

UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are impacts that cannot be avoided and cannot be mitigated, and therefore would remain throughout the duration of the action. The following list describes potential adverse impacts related to the alternatives being considered.

Private lands within the COA would continue to be subject to future development and other land uses that might be incompatible with NRA goals and objectives. As described under Alternative 1, the following resources could experience adverse cumulative impacts: wildlife, natural lightscape, natural soundscape, cultural, and scenic. Alternative 1 could also compromise recreational, economic, interpretation, and educational opportunities.

Both Alternative 1 and 2 could result in disturbance and degradation to geological and paleontological resources. These impacts would, in the long term, decrease under Alternative 2 with landowner participation in resource conservation activities.

Displacement of native vegetation communities by noxious weeds would be minimized under Alternative 2 with additional emphasis on the Joint Agency Management Effort (JAME) and landowner conservation partnerships.

LOSS IN LONG-TERM AVAILABILITY OR PRODUCTIVITY TO ACHIEVE SHORT-TERM GAIN

As noted above, some resources would be degraded, to some extent, through implementation of Alternatives 1 and 2. All

resources identified above would experience potential long-term loss under Alternative 1. Where landowners participate in the implementation of resource conservation tools and partnerships under Alternative 2, intensity of adverse impacts would be lessened, and beneficial impacts would be increased.

IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible commitments of resources are those that cannot be reversed, except perhaps in the extreme long term. This would include, for example, the consumption or destruction of nonrenewable resources such as minerals or the extinction of a species.

Irretrievable commitments of resources are those that are lost for a period of time, as a resource is devoted to a use that simultaneously precludes other uses. For example, if facilities are developed in a forest, the timber productivity of the developed land is lost for as long as the facilities remain.

By extension, some soils, vegetation, wildlife habitat, scenic resources, and cultural resources would be permanently damaged within the NRA by development of the private lands within the COA. This would be an irreversible commitment of such resources because it is unlikely that development would later be abandoned and reclaimed.

Construction activities that might eventually result from approval of the Proposed Action, such as the construction of new trails, would require fossil fuels, labor, and construction materials such as wood, aggregate, and bituminous materials. These materials are not in short supply, and their use would not have an adverse effect on the continued availability of these resources. Resultant construction would also require an irreversible commitment, or expenditure, of funds.