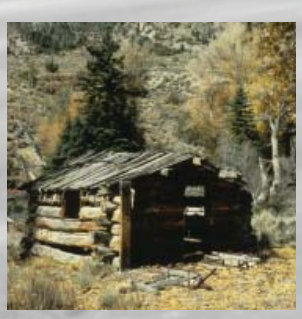
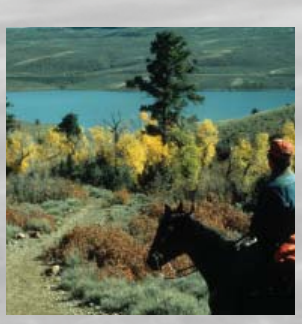
Chapter 3: Affected Environment





AFFECTED ENVIRONMENT

Introduction

PRIMARY ELEMENTS OF THE ENVIRONMENT AFFECTED BY ACTIONS

The purpose of the Affected Environment chapter is to describe the primary elements of the environment that would be affected by the actions proposed in either or both Alternative 1 and Alternative 2. These elements are called "impact topics", and are summarized in the Purpose and Need chapter under "Impact Topics Considered." As shown in the table of Impact Topics Retained or Dismissed in that chapter, some of the topics that the study team initially thought might be affected were ultimately dismissed from detailed assessment. Those topics that were retained are described in further detail in this Affected Environment chapter, and addressed in the Environmental Consequences chapter, where the impacts of the alternative actions on those topics are assessed in detail.

Four of the elements of the environment that are assessed in detail 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.

LAND UNITS

Throughout this chapter, reference is made to "land units," which were defined earlier in the Alternatives, Including the Proposed Action chapter, under "Development of Alternatives." They were created for purposes of analysis during the development of alternatives. They consist of the public and private lands outside the National Recreation Area (NRA), but within the larger study area, that were considered most critical for conservation.

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, identified by the letters A through H, are shown on the Alternative 2 map; and are referenced throughout the Resource Protection Study/ Environmental Impact Statement (RPS/ EIS). They consist of two types of land: (1) privately-owned land within the Conservation Opportunity Area (COA) of Alternative 2, defined as 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, defined as Land Units B, F, and H. For ease of reference, the land units are again listed here:

> Land Unit A (CO 92 COA): private lands north and south of Colorado State Highway 92 (CO 92) and Morrow Point

Soap Mesa – a portion of Land Unit A

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 lands recommended for inclusion in a COA (the private lands).

The criteria that were used to establish each land unit are shown in Table 2. This table first appeared in the Alternatives, including the Proposed Action chapter under "Development of Alternatives," and appears again 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 in Alternative 2. More detailed descriptions of specific resources, including their significance in the Curecanti region, are provided later in this chapter.

Natural Resources

TOPOGRAPHY AND CLIMATE

The climate of the Curecanti region is influenced by the surrounding topography. Extremely cold winters are common, due to cold mountain air settling in the basin. The January record low is -44.86° F. Average low and high temperatures vary from -10° to 30° F in winter and 36° to 80° F in summer. Air in this region is also very dry, and precipitation averages only 11 to 12 inches per year. These characteristics contribute to the unique composition of plant communities at Curecanti NRA and the surrounding area, including sagebrush dominated vegetation at elevations where pinyon-juniper forests would otherwise be expected to dominate (Emslie 2003).

WATER RESOURCES

Within the boundaries of Curecanti NRA, the Gunnison River is dammed at three locations to form Blue Mesa Reservoir, Morrow Point Reservoir, and Crystal Reservoir. These reservoirs and infrastructure make up the Wayne N. Aspinall Storage Unit, one of four storage units in the Bureau of Reclamation's (Reclamation) Colorado River Storage Project (CRSP). The Aspinall Unit produces electricity, regulates the flow of the Gunnison River, and controls floods, in addition to providing water storage for the Upper Colorado River Basin (NPS 2003). Also, within the NRA downstream of Crystal Dam are a diversion dam and tunnel and associated facilities that are part of Reclamation's Uncompahgre Project. The diversion dam and tunnel transport irrigation water to the Uncompahgre Valley.

Above the reservoirs, the Gunnison River flows freely through a floodplain of mature

Table 2: Factors Considered in Establishing Land Units

Criteria	Land Unit A – CO 92 COA	B – Blue Mesa Reservoir Agency	C – Gunnison River COA	D – Iola Basin COA	E – Sapinero /Blue Mesa COA	F – Gateview Agency	G – West-End COA	H – 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.

narrowleaf cottonwoods and then into a narrow canyon before entering Blue Mesa Reservoir. Blue Mesa is the largest of the three impoundments, and is the largest body of water in Colorado, consisting of 96 miles of shoreline, and extending over 20 miles in length. The purposes of Blue Mesa Reservoir include, among others, water storage and hydropower production (NPS 2003).

Morrow Point Dam, located 12 miles below Blue Mesa Dam, creates a deep, narrow reservoir between the steep walls of the Black Canyon. The primary function of Morrow Point Dam is the production of hydroelectricity. With two generators, its power capacity is almost twice the power capacity of Blue Mesa's power plant.

Crystal Dam is located 6 miles below Morrow Point Dam. Crystal Dam stabilizes the flow of water in the Gunnison River and produces hydroelectricity (NPS 2003). Together, the three dams produce enough electricity to support a community of 240,000 persons.

Downstream of Crystal Dam near the eastern boundary of Black Canyon of the Gunnison National Park (BLCA) is the Gunnison Diversion Dam and East Portal of the Gunnison Tunnel; both features of the Uncompahgre Project. The diversion dam and tunnel divert water from the Gunnison River to the Uncompahgre Valley for irrigation. Below the diversion dam the Gunnison River once again runs free through the national park towards Grand Junction and its eventual confluence with the Colorado River.

Major tributaries to the reservoir system include Cebolla Creek, Lake Fork of the Gunnison River, and the Cimarron River. At least 17 smaller tributaries flow into the NRA from the north and south. Threats to future water quality include urban housing and resort development in canyons and along drainages, and other associated changes from historic land-use practices. Because the NRA has a relatively long history of water quality and quantity monitoring (ca. 1980), NRA personnel have been able to clearly identify present water resource issues.

The NRA is currently monitoring 21 reservoir and adjacent tributary sites in an effort to assess current and minimize future impacts to water quality from internal and external sources. This effort is combined with similar efforts at BLCA and is focused on complying with National Park Service Policy and the Government Performance and Review Act (GPRA), as well as following the Clean Water Act and applicable State regulations. Credible water quality data is required to accurately characterize the water quality within the NRA. Most of the sites demonstrate water quality that is considerably better than State standards, and NPS policy encourages the preservation of this high quality.

Colorado Water Quality Standards — Classification of Waters

Water quality standards for the Gunnison River Basin have been established as part of Regulation No. 35 drafted by the Colorado Department of Public Health and Environment's (CDPHE) Water Quality Control Commission (CDPHE 2002). Under these regulations, water bodies are designated for specific uses. Blue Mesa, Morrow Point, and Crystal Reservoirs are designated to be suitable for class 1, Cold Water Aquatic Life; class 1a, Recreation (Primary Contact); Water Supply; and Agriculture, as defined below:

- Waters designated as class 1, Cold Water Aquatic Life, are defined as waters capable of sustaining a wide-variety of cold-water biota, including sensitive species. Waters with this designation are considered capable of sustaining such biota where physical habitat, water flows or levels, and water quality conditions result in no substantial impairment of the abundance and diversity of species.
- Waters designated as class 1a, Recreation (Existing Primary Contact), are defined as waters that are suitable for recreational activities in or on the water when the ingestion of small quantities of water is likely to occur.

- The Water Supply designation applies to surface waters that are suitable for potable water supplies. After receiving standard treatment these waters would meet Colorado drinking water regulations.
- The Agriculture designation applies to surface waters suitable for irrigation of crops usually grown in Colorado, and that are not hazardous as drinking water for livestock, and can be classified for agricultural use.

Resource Significance

In an otherwise arid habitat, the reservoirs and stream systems of the area are important resources. These systems support riparian communities and wildlife and fisheries habitat and provide water for human development activities. Streams and reservoirs within the proposed lands also provide recreational opportunities.

GEOLOGY AND PALEONTOLOGY

The landforms and scenery of the Curecanti area are formed by the underlying geology, which has been sculpted by over 2 million years of erosive activity by the Gunnison River. Precambrian-aged granitic and metamorphic basement rocks, some greater than 1.7 billion years old, form much of the landscape in the eastern portion of the national recreation area. Sedimentary rocks such as sandstone, limestones, and shales laid down by ancient water bodies are also found in the hills surrounding the Blue Mesa Reservoir. Red and green colored shales along the lakeshore are part of the fossil-rich Jurassic-age Morrison Formation. In some places, these rocks are overlain by sandstones of the Dakota Formation, which in turn is overlain by the Mancos Formation, both of Cretaceous age.

The older rocks are capped by Tertiary volcanic rocks, the result of past volcanic activity from the West Elk Mountains. An impressive example of eroded volcanic material in the area is the Dillon Pinnacles, northeast of Blue Mesa Dam. This assortment of strangely shaped spires and towers is formed from rock known as West Elk Breccia. It consists of cemented lava, rock, and mud spewed from the West Elks about 30 million years ago. Ash erupted from the San Juan Mountains a few million years later and rimmed the breccia with zones of tuff (ash flow). The tuff caps the mesas that surround Curecanti NRA. When the tuff weathers away, formations like the Dillon Pinnacles are created by erosion.

The volcanic activity and resulting landforms also dictated the course of the Gunnison River and its eventual carving of Black Canyon through the Gunnison Uplift and underlying rocks over a billion years old. Black Canyon extends for nearly 50 miles, beginning just below Blue Mesa Dam and continuing to the confluence with the North Fork. The canyon is dramatically steep, formed of gneisses, schists, and granites, as can be seen on the walls enclosing Morrow Point and Crystal Reservoirs and at the downstream end of the NRA at East Portal.

The Dillon Pinnacles

The region's geologic trademark is the Curecanti Needle, a quartz monzonite formation that rises 700 feet from the waters of Morrow Point Reservoir. It is visible from the reservoir surface or from the overlook at Pioneer Point along CO 92. Back in the heyday of railroad travel, the Denver and Rio Grande Railroad highlighted the unique pyramidal shape of the Curecanti Needle by featuring it on their logo for the "Scenic Line of the World."

During the Jurassic Period, there was an abundance of life in the area surrounding Curecanti NRA. Rocks deposited during this time, such as the Morrison Formation, can be rich in fossils, including those of dinosaurs. During a study of the Morrison ecosystem that transects North America from Canada into New Mexico, an apatosaur dinosaur was discovered along the shoreline of Blue Mesa Reservoir. The discovery was unique for the area, and yielded the southernmost specimen of the 140 million-year-old Allosaurus (Fiorillo et al. 1996; Landis 2000). In addition, the find revealed a previously unknown resource of significance. Detailed study of the Morrison Formation in Curecanti NRA and the surrounding area has and would likely continue to yield insights into the rock unit (Fiorillo et al. 1996). More fossils are likely to be imbedded in the rock formations surrounding Curecanti NRA, especially in the famous Morrison Formation.

Land units A (CO 92 COA), B (Blue Mesa Reservoir Agency), E (Sapinero/Blue Mesa COA), and H (West-End Agency) are known to include fossil resources and/or to have a high potential for future discoveries. These include the areas north and south of CO 92 and Morrow Point Reservoir, north of Blue Mesa Reservoir, Sapinero Mesa, Blue Mesa, and areas west of Fitzpatrick Mesa.

Resource Significance

The fossil-rich formations of the NRA offer the potential for preservation and/or future discovery and study of fossils of various species. The formations also provide an opportunity for interpretation, to provide visitors with a better understanding of the resources.

VEGETATION AND WILDLIFE

Vegetation, Including Wetlands

The majority of the Curecanti landscape is best classified as semiarid shrubland. In most areas within the NRA, the upland plant community is dominated by three subspecies of big sagebrush, black sagebrush, and native grasses. Slight differences in elevation, moisture, or soil structure can result in visible differences in vegetation community composition. The immediate area is often characterized by narrow canyons with steep rocky walls that support little vegetation. Tall cottonwood trees and lush undergrowth are associated with riparian areas found mostly at the eastern end of the NRA near the Gunnison River and the many side drainages that feed into the reservoirs. In these areas, the narrowleaf cottonwood with its deep roots helps stabilize the riverbank while retaining nutrients and moisture for understory plant growth. Intermittent drainages support juniper, Gamble oak, and shrubs including serviceberry and wild rose. Higher elevation and shady, cooler areas are characterized by scattered stands of ponderosa pine, Douglas fir, and spruce trees. The landscape east of the NRA has been altered by humans and is characterized by pastureland used primarily for cattle grazing and hay production.

Important vegetation resources in the Curecanti region include riparian and wetland communities associated with the Gunnison River and tributaries. Specific land units with valuable riparian communities include units C (Gunnison River COA), D (Iola Basin COA), and E (Sapinero/Blue Mesa COA). Some specific wetland areas have been mapped, and many others are likely to be found scattered throughout the same locations as riparian communities (Gunnison County Wetland Survey, CNHP 2002; and National Wetlands Inventory, USFWS). These maps are available through NPS, Gunnison County, and the USFWS National Wetlands Inventory Program.

Some of these wetland communities, including those associated with the Gunnison River and tributaries, are under jurisdiction of the

U.S. Army Corps of Engineers (the Corps). Filling of these 'jurisdictional' wetlands is regulated by the Corps under Section 404 of the Clean Water Act. These wetlands are also protected by County regulations. Non-jurisdictional wetlands are often isolated from perennial drainage systems and are not protected by federal, state, or local laws. However, federal land agencies such as NPS, USFS, and BLM have policies that address management of both jurisdictional and non-jurisdictional wetlands that occur on their lands as mandated by Executive Order 11990. In addition, the Colorado Division of Wildlife recognizes wetlands as areas of high habitat value for wildlife, and manages these resources accordingly. There are no official regulations for non-jurisdictional wetlands on private lands. Future cooperative conservation actions with private landowners would include more detailed assessment of impacts to wetlands on such lands.

Exotic or noxious plant species present a threat to native vegetation communities. The NRA and other federal lands are often managed for control of noxious weed invasion. However, federal funding is not always available for such efforts, and privately-owned lands in the proposed lands might not have organized weed control efforts in place. Noxious weed management is one of the tasks being undertaken by the Joint Agency Management Effort (JAME), a program to facilitate cooperation in dealing with resource issues that cross agency and private land boundaries.

Wildlife

Mammalian inventories were conducted in 2001 and 2002 at select National Park Service areas in the Northern Colorado Plateau Network, including Curecanti NRA. Of 60 species that researchers thought were likely to occur within the NRA, 36 species in 2001 and 48 species in 2002 were observed. Common mammals observed during inventories include mule deer, coyote, mountain lion, bobcat, raccoon, least chipmunk, various bats, Colorado chipmunk, deer mouse, bushy-tailed woodrat, several voles, and the western jumping mouse (USGS 2003).

Big Game—Important habitat for big game species is located in portions of Curecanti NRA and surrounding areas. Severe winter range for American elk and mule deer, winter range for pronghorn, and overall range for bighorn sheep exist in the area as shown in Table 6 and discussed below.

Table 6: Big Game Habitat in Proposed Lands

Species	Habitat Type	Acres within NRA	Acres by Land Unit	
American Elk	Severe Winter Range	18,000	A =	4,800
			B =	150
			D =	130
			E =	2,720
			G =	240
			Total =	**8,040**
Mule Deer	Severe Winter Range	16,000	A =	7,300
			B =	150
			D =	130
			E =	890
			G =	100
			Total =	**8,570**
Bighorn Sheep	Overall Range	14,600	B =	2,000
Pronghorn	Winter Range	260	B =	80
			D =	1,125
			Total =	**1,205**

Habitat for American elk consists of semi-open forests or forest edges adjacent to meadows and alpine tundra. Elk are both grazers and browsers with a diet that consists of shrubs, forbs, and grasses (Fitzgerald et al. 1994). In the Rocky Mountain region, elk typically migrate between high elevation areas in spring and summer to lower, warmer areas in the fall and winter. In the Upper Gunnison Basin region, summer range for elk is widespread and includes Curecanti NRA and the surrounding area. Summer concentration areas are located at higher elevations north of the NRA. Winter concentration areas and severe winter range is located within and adjacent Curecanti NRA. Within the NRA, approximately 18,000 acres of severe winter elk range are protected. Outside of the NRA, the proposed lands encompass approximately 8,000 acres of severe winter range for elk, found in Land Units A (CO 92 COA), B (Blue Mesa Reservoir Agency), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) (Table 6). This habitat is extremely important during unusually harsh winters when survival of elk can be threatened by lack of accessible food supply.

Mule deer occupy all ecosystems in Colorado from grasslands to alpine tundra. They reach their greatest densities in shrublands on rough, broken terrain, with abundant browse and cover. Winter diets of mule deer consist of browse from a variety of trees and shrubs (74%) and forbs (15%). Summer diets are 50% browse, and forb consumption increases to 46% (NDIS). As with elk, winter habitats are often at lower elevations, and winter concentration and severe winter range are located within and adjacent to Curecanti NRA. Within the NRA, approximately 16,000 acres of severe winter mule deer range is protected, while Land Units A (CO 92 COA), B (Blue Mesa Reservoir Agency), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) include a total of 8,600 acres of such habitat.

Suitable habitat (overall range) for bighorn sheep is widespread in the area, including 14,600 acres within Curecanti NRA and 2,000 acres in Land Unit B (Blue Mesa Reservoir Agency). Historically, bighorn sheep ranged throughout the canyons of the Gunnison River and the surrounding mountainous regions. However, populations declined throughout the 1900s due to habitat conversion, competition, and disease. Beginning in the 1970s, and as recent as 1995, CDOW reestablished a bighorn population in the area through transplanting animals. Sheep have been transplanted into various areas including Dillon Mesa, Lake Fork, and the Gunnison Gorge. Area herds did well until a particularly severe winter in 1978 resulted in high mortality. Since 1978, the total local population count has fluctuated between 25 and 35 animals (CPCESU 2002).

Pronghorn habitat consists of grasslands and semi-desert shrublands in areas with topography that supports good visibility. They are most abundant in shortgrass or midgrass prairies and least common in xeric habitats, such as those surrounding Curecanti NRA. Pronghorn diet consists of a variety of forbs and grasses, and they sometimes consume and tolerate species that are hazardous to livestock. Winter range for pronghorn exists primarily in the Kezar Basin, which is south of Iola Basin of Blue Mesa Reservoir. It occurs on 260 acres of NRA land; on 80 acres of land unit B (Blue Mesa Reservoir Agency), which is currently managed by the Bureau of Land Management (BLM); and on 1,125 acres of private land in land unit D (Iola Basin COA).

Birds—There are approximately 225 species of birds documented in the area of Curecanti NRA (Hyde and Cook 1980). Common birds include the horned lark, black-capped chickadee, white-breasted nuthatch, dipper, American robin, mountain bluebird, hermit thrush, warbling vireo, western meadowlark, red-winged blackbird, pine siskin, black-billed magpie, common raven, and various jays, warblers, juncos, sparrows, finches, woodpeckers, and towhees.

Many species of waterfowl and shorebirds migrate through the Gunnison Basin region or remain as summer residents. Common water and shorebirds found at Curecanti NRA include the spotted sandpiper, ring-billed

gull, and green-winged teal. Nesting areas are more likely to be found in inland areas and in the narrow portions of the reservoir arms where habitat is more suitable and water-based recreation activity is restricted. Waterfowl and shorebirds that nest in these areas include killdeer, common snipe, mallard and common merganser. In addition, great blue herons wade along the shoreline in these narrow reservoir arm areas. A heron rookery is located in the Cooper Ranch/Neversink area in the eastern portion of the NRA and in Land Unit C (Gunnison River COA).

Common raptors at Curecanti NRA include red-tailed hawk, Swainson's hawk, golden eagle, bald eagle, and American kestrel. Great horned owls nest in the area and are common year-round, and flammulated owls are common in the summer months.

Of the birds recorded in the NRA, four are federally or state listed as regionally threatened, endangered, or candidate species, including bald eagle, whooping crane, and yellow-billed cuckoo. The Gunnison Sage-grouse, a unique species native to the region and prevalent in the sagebrush communities within the NRA, was designated as a federal candidate species for listing under the Endangered Species Act on December 28, 2000. On April 18, 2006, the U.S. Fish and Wildlife Service (USFWS), the agency responsible for the determination of the bird's status, decided not to list it as endangered or threatened, and has removed it from the candidate species list. However, NPS still considers the Gunnison Sage-grouse to be a NRA sensitive species.

Gunnison Sage-grouse

In addition to the federal status mentioned above, the Sandhill crane, peregrine falcon, Gunnison Sage-grouse, and long-billed curlew are listed as state special concern species. Special status species are discussed later in this chapter.

Fisheries—Construction of the dams along the Gunnison River has altered the fisheries of the area through inundation of riparian areas, alteration of flows and water temperatures, and alteration of spawning habitat. However, Curecanti NRA provides one of the best cold-water fishing opportunities in the nation partly due to the spawning run of kokanee salmon in the Gunnison River above Blue Mesa Reservoir. Other game fish common to Curecanti NRA include lake trout (Mackinaw trout), brook trout, rainbow trout, and brown trout. The Colorado Division of Wildlife (CDOW) maintains populations of game species through stocking. Due to seasonal water fluctuations, there is a lack of development of aquatic plant or invertebrate communities to provide concentrated shoreline feeding areas for fish (CDOW 2002b). Instead, zooplankton in interior surface waters is the main food source for sport fish in Blue Mesa Reservoir.

Amphibians and Snakes—Snakes common to Curecanti NRA include the smooth green snake, Great Basin gopher snake, garter snake, and striped whipsnake. A variety of lizards and salamanders are also found here. Breeding areas for lizards are generally in upland areas away from the shoreline, while primary habitat for amphibians would be in the narrow portions of reservoir arms and along the shoreline.

Resource Significance

The lack of development and the uniquely pristine nature of the wildlife habitat within and surrounding the NRA contribute to the significance of the wildlife resources and their importance to regional populations. This is especially true for big game species, including American elk, mule deer, bighorn sheep, and pronghorn that rely on range in the area. In addition, the proposed lands provide important raptor habitat and fisheries resources.

Riparian communities are underrepresented within the NRA. Riparian vegetation provides valuable habitat for wildlife. Threats to the health of riparian communities include

streamside development, grazing, pollution, exotic plants, and changes to the flood regime. These activities have taken a large toll, especially when considering the original inundation and loss of riparian habitat caused by the filling of the three reservoirs.

SPECIAL STATUS SPECIES

Species listed by both the U.S. Fish and Wildlife Service (USFWS) and the Colorado Wildlife Commission, and those of special concern to the NRA, all of which could potentially be impacted by the actions in Alternatives 1 and 2, are listed in Table 7, and described in more detail in this section. Species protected by the Endangered Species Act are listed by USFWS as federally threatened or endangered. In addition, USFWS lists candidate species that are considered for listing at a later date. While not protected under the Endangered Species Act, candidate species are also considered when analyzing impacts of actions that may potentially affect them.

A letter was sent by Curecanti NRA staff to the Grand Junction office of USFWS on May 21, 2001 requesting a list of federally threatened and endangered species in the vicinity of the NRA. USFWS responded on June 28, 2001 and subsequently updated this response on March 17, 2005, with a list of the following species: seven federally endangered species—the black-footed ferret, bonytail, Colorado pikeminnow, humpback chub, razorback sucker, Uncompahgre fritillary butterfly, and clay-loving wild-buckwheat; four federally threatened species—bald eagle, Canada lynx, Mexican spotted owl, and Uinta Basin hookless cactus; and three candidate species—Boreal toad, Gunnison Sage-grouse, and yellow-billed cuckoo. Subsequent to this latest update, USFWS decided not to list the Boreal toad and the Gunnison Sage-grouse as endangered or threatened, and has removed them from the candidate species list. However, the state of Colorado and Curecanti NRA still consider the Gunnison Sage-grouse to be a special status species. No critical habitat for federal special status species was identified in the proposed lands.

The Colorado Wildlife Commission maintains a list of special status species including state-listed threatened, endangered, or special concern species. The federally-listed species mentioned above are also given special status by the state. Other state listed species that may potentially be affected by the actions at Curecanti NRA include the American peregrine falcon, Colorado River cutthroat trout, greater Sandhill crane, Gunnison Sage-grouse, and long-billed curlew. These species are listed as special concern species and do not have protected status. However, they have been determined by the Colorado Wildlife Commission to be at risk of eventual threatened or endangered status.

The NRA considers all federally- and state-listed species to be special status. Other species of concern that the NRA considers to be special status, which may potentially occur in the proposed lands, include bighorn sheep, Great blue heron, Gunnison's prairie dog, Adobe thistle, Black Canyon gilia, Colorado desert parsley, Gunnison milkvetch, hanging garden sullivantia, and skiff milkvetch (Table 7).

Federal Species

Suitable foraging habitat for bald eagle exists along the entire length of Curecanti NRA, as the reservoirs provide an ample food source for bald eagles in the area. Winter eagle activity is concentrated around the Gunnison River and the reservoir shorelines. Nesting generally occurs in large trees that occur along the Gunnison River (such as the Neversink / Cooper Ranch area) and along tributaries (both within and outside the current NRA). Foraging individuals are likely to be active throughout the remainder of the NRA.

The black-footed ferret once ranged throughout grasslands and mountain basins of North America, but is now extirpated from the majority of its range including southern Colorado. The occurrence of the black-footed ferret in the proposed lands is extremely unlikely and the species is not evaluated further in this document.

Table 7: Special Status Species in the Vicinity of Curecanti National Recreation Area

Common Name	Scientific Name	Status	Applicable Land Units
Federal Special Status Wildlife Species			
Bald eagle	*Haliaeetus leucocephalus*	FT ST	All
Black-footed ferret	*Mustela nigripes*	FE SE	N/A
Bonytail	*Gila elagans*	FE SE	N/A
Canada lynx	*Lynx Canadensis*	FT SE	A, B, E, F, H
Colorado pikeminnow	*Ptychocheilus lucius*	FE ST	N/A
Humpback chub	*Gila cypha*	FE ST	N/A
Mexican spotted owl	*Strix occidentalis lucida*	FT ST	N/A
Razorback sucker	*Xyrauchen texanus*	FE SE	N/A
Uncompahgre fritillary butterfly	*Boloria acrocnema*	FE	N/A
Yellow-billed cuckoo	*Coccyzus americanus*	FC SSC	N/A
State Special Status Wildlife Species			
American peregrine falcon	*Falco peregrinus anatum*	SSC	A, E, G, H
Colorado River cutthroat trout	*Oncorhynchus clarki pleuriticus*	SSC	A, B (potential reintroduction sites)
Greater Sandhill crane	*Grus Canadensis tabida*	SSC	C
Gunnison Sage-grouse	*Centrocercus minimus*	SSC	B, C, D, E
Long-billed curlew	*Numenius americanus*	SSC	All
NRA Sensitive Wildlife Species			
Bighorn sheep	*Ovis canadensis*	PS	B
Great blue heron	*Ardea heodias*	PS	C
Gunnison's prairie dog	*Cynomys gunnisoni*	PS	B
Federal Special Status Plants Species			
Clay-loving wild-buckwheat	*Eriogonum pelinophilum*	FE	N/A
Uinta Basin hookless cactus	*Sclerocactus glaucus*	FT	N/A
NRA Sensitive Plants Species			
Adobe thistle	*Cirsium perplexans*	G2 S2	Near: G, H
Black Canyon gilia	*Gilia pentstemonoides*	G3 S3	A, E, H
Colorado desert parsley	*Lomatium concinnum*	G2 S2	G
Gunnison milkvetch	*Astragalus anisus*	G3 S2	C, D
Hanging garden sullivantia	*Sullivantia hapemanii*	G3, T3, S3	A, B, E
Skiff milkvetch	*Astragalus microcymbus*	G1 S1	B, C, D

Status Key

FC = Federal Candidate Species
FE = Federal Endangered Species
FT = Federal Threatened Species
PS = NRA Sensitive Species
SE = State Endangered Species
SSC = State Special Concern Species
ST = State Threatened Species
S1 = Critically Imperiled in Colorado
S2 = Imperiled in Colorado
S3 = Vulnerable in Colorado
G1 = Globally Critically Imperiled
G2 = Globally Imperiled
G3 = Globally Vulnerable
T3 = Globally vulnerable at infraspecific level

Source: USFWS Ecological Services, Grand Junction, 2001; Colorado Division of Wildlife, 2000

The bonytail, Colorado pikeminnow, and humpback chub are all members of the minnow family that are endemic to the Colorado River Basin. The Razorback sucker is a large sucker that is also endemic to the Colorado River system. The alteration of the river system by damming and water development activities has changed the flow regime, temperature, and sedimentation qualities of the river system, making much of the former range of these species uninhabitable. In addition, the introduction of many non-native fish and other aquatic animals, plants, pathogens, parasites, and chemical contaminants have affected the river system's ecosystem (Mueller and Marsh 2003). Of these species, only the Colorado pikeminnow and razorback sucker (stocked) are known to inhabit the Gunnison River, though not within the proposed lands. None of these fish are analyzed further in this document.

Canada lynx occur at elevations of 9,000 to 14,500 feet in forests, meadow, or tundra environments. Northern coniferous forests are the preferred habitat of the lynx (NDIS). Snowshoe hare is the primary prey of lynx. Other prey includes squirrels, beavers, muskrats, deer, caribou, and moose (Fitzgerald et al. 1994). Lynx potentially could occupy higher elevation areas surrounding Curecanti NRA. According to the Colorado Division of Wildlife's Natural Diversity Information Source (NDIS), overall lynx range encompasses western portions of the Curecanti region. A recent project which used CDOW data along with vegetation cover type data to map potential lynx habitat on BLM managed lands (Baker - CNHP, CDOW), found Land Units A (CO 92 COA), B (Blue Mesa Reservoir Agency), E (Sapinero/Blue Mesa COA), F (Gateview Agency), and H (West-End Agency) to contain potential habitat for the species. However, at this time, the lynx is not known to reside within the proposed lands and is not analyzed further.

The Mexican spotted owl nests in closed canopy forests and narrow rocky canyons in remaining habitat in the southwestern United States. Although potential habitat may occur in the area, the species is not known to exist within the proposed lands. The Mexican spotted owl is not analyzed further in this document.

The federally endangered Uncompahgre fritillary butterfly lives in patches of snow willow at high elevations, and has very limited habitat, a small population size, and low genetic variability, which may affect long-term population stability (USGS 2005). The species is susceptible to trampling by recreationists and grazing animals. Though known to occur in alpine meadows in Gunnison County, due to lack of suitable habitat, the Uncompahgre fritillary is not expected to occur within the proposed lands and is not analyzed further in this document.

In the western United States, yellow-billed cuckoo habitat consists of old growth riparian woodlands with dense understories, while in other portions of the country more open woodlands are adequate (Kingery 1998). In the proposed lands, the locations of potential occurrence for this species would be in the riparian corridors such as those along the Gunnison River or its tributaries. The yellow-billed cuckoo is designated as a non-game species within Colorado. As that designation applies, it is not legal to take, harass, or threaten the species. There have been historical infrequent summer records of non-breeding yellow-billed cuckoo occurrences within the NRA (Andrews and Righter 1992; Hyde and Cook 1980), but there is no evidence of breeding by the species in Gunnison County (Kingery 1998). There are no known recent sightings within the NRA or proposed lands, and the species is not analyzed further in this document.

Clay-loving wild buckwheat is a federally endangered plant found in Mancos shale badlands, in salt desert shrub communities. Populations are known to exist in west-central Montrose County, but are not expected to occur within the proposed lands. This species is not evaluated further in this document.

The Uinta Basin hookless cactus is a federally threatened plant found on hills and mesas in the Colorado and Gunnison river valleys on gravelly soils (CNPS 1997). It is known to occur in north-central Montrose County, well

west of the proposed lands (CNHP). This species is not expected to occur within the proposed lands, and is not analyzed further in this document.

State Listed Species

The American peregrine falcon has been federally delisted, but remains a state species of concern. The falcon occupies a variety of habitats at elevations of 3,000 to 10,000 feet and usually nests in high cliff ledges. Peregrines are known to occur nearby in the Black Canyon of the Gunnison National Park, especially near the Painted Wall area. They also regularly nest within the NRA, but have the most potential for occurrence in the proposed lands in Land Units A (CO 92 COA), E (Sapinero/Blue Mesa COA), G (West-End COA), and H (West-End Agency) (Andrews and Righter 1992; Hyde and Cook 1980).

Colorado River cutthroat trout historically occupied portions of the Colorado River drainage in Wyoming, Colorado, Utah, Arizona, and New Mexico (GMUG MIS Assessment). Populations of the species have dramatically declined due to land management practices and hybridization with non-native salmonids, and current populations of the species occur primarily in headwater streams and lakes (CRCT Task Force 2001; GMUG MIS). The Colorado River cutthroat trout is known to occur in the Gunnison River below Crystal Reservoir (incidental occurrence through occasional stocking), Antelope Creek (a tributary to North Beaver Creek), Road Beaver Creek (a tributary to Cebolla Creek), as well as in the national park (Kowalski, pers. comm. 11/27/2007). Potential cutthroat trout reintroduction sites within the proposed lands include West Elk Creek, Curecanti Creek, and East Elk Creek, in Land Unit A (CO 92 COA) and B (Blue Mesa Reservoir Agency).

The greater Sandhill crane occupies a variety of habitats including crops, grasslands, mudflats, and riparian areas at 3,000 to 10,000 feet in elevation. The area along Curecanti NRA and the Gunnison River is considered to be suitable habitat for the species during migration, primarily in spring, but is not a known breeding area for the species (Kingery 1998; Andrews and Righter 1992). Sandhill cranes are most likely to occur in riparian communities or in agricultural areas surrounding the NRA. Land Unit C (Gunnison River COA), along the Gunnison River, supports potential habitat for the greater Sandhill crane.

The Gunnison Sage-grouse has been dropped as a candidate for federal listing, but remains a state species of concern. The bird has important habitat located within Curecanti NRA and surrounding areas. The NRA is currently engaged in monitoring programs for the Gunnison Sage-grouse lek (breeding) sites in cooperation with the Colorado Division of Wildlife. This native to the Gunnison Basin was recognized in 2000 to have different coloration and mating rituals from the Northern Sage-grouse. The breeding population size is small, totaling only 4,000 individuals, with up to 3,000 of those believed to reside in Saguache or Gunnison counties, Colorado (BLM 2001). The birds nest in big sagebrush-dominated communities from April to July. Within the NRA, a historic Gunnison Sage-grouse lek occurs near the shoreline at the Stevens Creek campground.

Threats to Gunnison Sage-grouse include degradation of habitat, habitat loss or fragmentation, and physical disturbance, especially during critical mating, nesting, or brooding periods. Habitat degradation or loss has resulted from land treatments that convert sagebrush landscapes to developed or fragmented areas. Roads, utility and energy development, urban, or agricultural development are examples of activities that can threaten Gunnison Sage-grouse habitat. Physical disturbance to the species may occur through off-highway vehicle use, harassment by scientific studies or bird watching, gaining access to fishing spots, and hunting other animals. Hunting of Gunnison Sage-grouse was discontinued a number of years ago. Land unit E (Sapinero/Blue Mesa COA) contains critical winter range, while units B (Blue Mesa Reservoir Agency), C (Gunnison River COA), and D (Iola Basin COA) contain severe winter range for Gunnison Sage-grouse. Sage-grouse

nesting areas are found within units B (Blue Mesa Reservoir Agency) and D (Iola Basin COA), while a brood area is located in Land Unit C (Gunnison River COA).

Habitat of the long-billed curlew includes croplands, grasslands, shrublands, and wetland and riparian areas at elevations of 3,000 to 5,000 feet. They are known to occur as springtime migrants throughout Gunnison County, including the vicinity of Curecanti NRA (Andrews and Righter 1992). However, there is no evidence that they breed throughout most of western Colorado, including within Gunnison County (Kingery 1998). In Colorado, the long-billed curlew is primarily an eastern plains species.

NRA Sensitive Species

Curecanti NRA contains a variety of species that the staff considers to be native species of concern. These include bighorn sheep (discussed with big game species), great blue heron, Gunnison Sage-grouse (previously discussed under State Listed Species), and Gunnison's prairie dog. The NRA has not yet completed a comprehensive identification and evaluation of all native species of concern.

The great blue heron is a summer resident of Curecanti NRA. Nesting locations are located within the NRA and on adjacent lands. The Gunnison River supports important habitat and this nesting location is one of only two heronries in Gunnison County (Bio-Environs 2001). Great blue heron nesting occurs in mature narrowleaf cottonwoods in the Neversink / Cooper Ranch area within the NRA, as well as in Land Unit C (Gunnison River COA). The nesting colony is an important resource, and monitoring has taken place since 1987. Management for maintenance and establishment of future generations of riparian vegetation community is important to the success of the colony.

The Gunnison's prairie dog lives in short- to medium-height grass prairies and plateaus at moderate to high elevations. Gunnison's prairie dogs are restricted to southwestern and south-central Colorado. They range in elevation from 6,000 to 12,000 feet. As with all prairie dog species, populations are much smaller than they were historically due to eradication, habitat loss, and disease. In Curecanti NRA, Gunnison's prairie dogs inhabit the sagebrush grassland communities.

Adobe thistle (Rocky Mountain thistle) is found in Mesa, Montrose, Delta, Eagle, and Ouray counties on barren gray shale slopes and adobe hills in open areas and disturbed sites in mixed shrublands and pinyon juniper woodlands (CNHP 2002). It is found within the Curecanti NRA in the vicinity of Morrow Point Reservoir. Other areas of concern for the species include Land Units G (West-End COA) and H (West-End Agency).

Black Canyon gilia is a Colorado endemic that grows in cracks in vertical walls, on narrow ledges, and cliff rims at elevations of 6,800 to 9,000 feet in Gunnison, Montrose, Ouray, Hinsdale, and Mineral counties in 13 known populations (CNPS 1997). Within the proposed lands, the species may potentially occur or be of concern in or near Land Units A (CO 92 COA), E (Sapinero/Blue Mesa COA), and H (West-End Agency) (NPS Map - tes_63.rtl).

Colorado desert parsley grows on adobe hills and plains in rocky soils derived from Mancos Formation shale. It is associated with arid shrub communities, typically saltbush (CNPS 1997). A portion of Land Unit G (West-End COA) is within an area of concern for the species (NPS Map - species_rank_eo.rtl 3/22/01).

Two sensitive milkvetch species that occur in the NRA, Gunnison milkvetch and skiff milkvetch, are listed by the Colorado Natural Heritage Program (CNHP) as globally and state critically imperiled and globally and state imperiled, respectively. The Gunnison milkvetch and the skiff milkvetch occur in dry upland sagebrush areas at elevations of approximately 7,500 to 8,500 feet (CNHP 2002).

Gunnison milkvetch has been found occasionally on the sagebrush floor of the Gunnison Basin, and is a concern in Land Units B (Blue Mesa Reservoir Agency) and C (Gunnison River COA) (CNPS 1997, NPS Map - tes_63.rtl). Skiff milkvetch is known only

from locations in and near the South Beaver Creek drainage (CNPS 1997). Land units known to contain occurrences or potential habitat for skiff milkvetch include Land Units B (Blue Mesa Reservoir Agency), C (Gunnison River COA), and D (Iola Basin COA) (NPS Map - tes_63.rtl).

The skiff milkvetch occurs in its highest abundance on property just southeast of the Curecanti NRA boundary in the South Beaver Creek drainage on BLM property, which is an Area of Critical Environmental Concern (ACEC). A portion of the ACEC that encompasses the best and largest population of skiff milkvetch was designated as a Colorado Natural Area in 1997. This status provides additional monitoring and protection for the rare plant species. Colorado Natural Areas Program (CNAP) is a state agency which preserves some of the finest examples of Colorado's original and unique landscapes for the benefit of present and future generations. CNAP works in partnership with local, state, and federal agencies and private citizens to recognize and protect areas which represent exceptional examples of Colorado's diverse ecosystems. The CNAP designation is approved by the Natural Areas Council, signed by the Governor of Colorado, and when enacted, protects elements of statewide importance.

Hanging garden sullivantia is the only species in this genus found in Colorado. Found in hanging gardens and wet cliffs of various geology including limestone, shale, and quartzite (CNHP 1999). It is known to occur at the bottom of the Black Canyon of the Gunnison (NPS 1997). Exact locations within the proposed lands are unknown, but habitat that could support the species is found in Land Units A (CO 92 COA), and E (Sapinero/ Blue Mesa COA) (Dangoule Bockus, pers. comm. 04/05/2005).

Resource Significance

The proposed lands contain habitat that is important for the conservation of special status wildlife and plant species that are significant resources of the NRA and the entire nation. Continued and increased conservation of important habitat offers unique opportunities to contribute to the preservation of such species. Special status species that are significant in the area include American peregrine falcon, bald eagle, bighorn sheep, Colorado River cutthroat trout, great blue heron, greater Sandhill crane, Gunnison Sage-grouse, Gunnison's prairie dog, long-billed curlew, Adobe thistle, Black Canyon gilia, Colorado desert parsley, Gunnison milkvetch, hanging garden sullivantia, and skiff milkvetch.

NATURAL LIGHTSCAPE (NIGHT SKY)

NPS areas protect resources so that they may be shared with visitors for generations to come. These include the dark star-lit skies of night. However, each year new light sources eat away at this vanishing resource. Forty percent of Americans live under night skies so bright that their eyes no longer have to adjust to night vision. Two-thirds of the U.S. population cannot see the Milky Way, and more than half of today's young people have never seen it at all.

NPS areas have no authority to require that neighboring landowners and cities lessen glare. The 1916 Organic Act, which created the national park system, calls for conserving scenery and other resources for future generations. It does not specifically mention light.

Light by light, we are losing sight of the unknown. The universe awash in stars — a source of wonder and inquiry since civilization began — is being obliterated by mega-wattage spilling into the sky from every corner: malls, airports, ballparks, theme parks, billboards, car dealerships, miniature golf courses, and the neighbor's driveway.

NPS launched the Night Sky Team after a 1999 study of 189 NPS areas found two-thirds reporting light pollution. Beginning in 2004, the NPS Night Sky Team partnered with the Northern Colorado Plateau Network to expand night sky inventories at NPS areas in the Colorado Plateau. The goal was to capture night

Dark nights provide stargazing opportunities

sky brightness approximating the twentieth percentile atmospheric clarity (as estimated by Bext or atmospheric extinction) to establish a baseline of light pollution. Additionally, light pollution sources were to be identified and relative contributions established.

Field visits were made to Black Canyon and Curecanti in 2004 to evaluate night sky. The night sky quality monitoring report completed in 2006 indicates that on a clear night most light pollution is restricted to the near horizon leaving the majority of the sky in the vicinity of the park in good condition. Within the immediate vicinity, the communities of Grand Junction, Fruita, Delta, and Montrose are equally bright. Increasing amounts of night light present a threat to the quality of the NRA's night sky programs and the visitor experience and enjoyment, but also presents a threat to the quality of life of local residents.

Resource Significance

One of the significant resources now available to NRA visitors is the night sky. It is a resource worthy of attention and conservation, and offers opportunities for lay persons and astronomers to ponder the universe.

NATURAL SOUNDSCAPE

"Soundscape" refers to the total ambient acoustic environment, which is made up of both natural sounds and human-made sounds. Part of the NPS mission is to protect soundscapes as a vital component of the visitor's enjoyment of a site. Both the sounds of the wild and the sounds meaningful in historic settings are protected in the National Park System.

Though human-made sounds can be heard within the NRA from sources such as traffic from surrounding highways, overhead aircraft, and motorized watercraft use within the reservoirs, overall, the soundscape of much of the NRA appears to be well preserved, as certain portions of the NRA offer a sense of serene solitude. NRA backcountry trails give visitors opportunities to hear natural sounds. Pine Creek, Curecanti Creek, Mesa Creek, and Crystal Creek Trails are examples of excellent places to listen to natural sounds, and if conditions are favorable, to experience serenity and quiet.

Additional data on ambient soundscape environments and noise intrusions would be needed to more fully evaluate the present condition within the NRA. However, it should be recognized that noise intrusions internal to the NRA (such as NPS and concession construction activities, new recreational technologies, etc.) and external to it (private development construction, mowing of lawns, increased local traffic, etc.) could serve to degrade the present condition.

Resource Significance

One of the significant resources now available to NRA visitors is the soundscape. It is a resource worthy of attention and conservation, and offers opportunities for visitors to enjoy a reprieve from the often bustling sounds of their everyday lives.

Cultural Resources

HISTORICAL BACKGROUND

As early as 10,000 years ago, this area appears to have supported a series of human adaptations to desert, plateau, and mountain conditions. Paleo-Indian tradition dated from pre-9000 B.C. and 5000 B.C. In about 6500 B.C. there was a dual emphasis with the addition of gathering plant foods. This coupling of food gathering and hunting successfully continued in the Upper Gunnison Basin until American Indian and Euro-American contact (NPS 1994).

The Archaic period with its hunting adaptation is represented in the NRA's archeological record from approximately 4000 B.P. through A.D. 1. There also appears to be considerable evidence of aboriginal occupation dating from approximately A.D. 400–1600. The first evidence of an Indian group in the Upper Gunnison Basin, which was recognized and named by Euro-Americans, is that of the Utes who migrated to the Colorado area from the Great Basin in A.D. 1200–1300 (NPS 1994).

Artifacts and radiocarbon dates collected from the area of the NRA range from 8000 B.C. until about A.D. 1500 and appear to document essentially continuous intermittent use of the Upper Gunnison Basin since the end of the Pleistocene. The historic period for American Indians in western Colorado begins with first written account of contact with Ute groups and ends in approximately 1881 with their movement to reservations. The NRA also contains many unrecorded sites reflecting late nineteenth century Euro-American activity including small-scale ranching, mining, and logging as well as construction camps that supported expansion of the railroad (NPS 1994).

The Denver and Rio Grande Railroad (D&RG), later renamed the Denver and Rio Grande Western Railroad (D&RGW), was the most successful narrow gauge railroad to cross the Rocky Mountains. The tracks connected the Front Range cities of Denver, Colorado Springs, and Pueblo with Salida. The main line ran from Salida over Marshall Pass to Gunnison, through the Black Canyon to Cimarron, and over Cerro Summit to Montrose, on to Grand Junction, and into Utah. From the Gunnison area, branch lines ran to Lake City and mining areas at Crested Butte. Built in 1881–1882, the D&RGW operated passenger service until 1940 and freight trains until 1949. Given the rugged terrain in some areas, narrow gauge (3 feet between the rails rather than the standard 4 feet 8-½- inch gauge) was used to save on construction costs and to negotiate tighter curves. Thus, the D&RGW narrow gauge was an active railroad through the Black Canyon above Cimarron for nearly 70 years, until the line was abandoned in 1949.

Cimarron Canyon rail exhibit

The construction of the Gunnison Diversion Tunnel (1905–1909) was an engineering marvel for its day. One of the first projects of the Reclamation Service, now known as the Bureau of Reclamation, it was one of the largest tunnel projects to be attempted at the time, 11 feet wide by 12 feet high, stretching almost six miles through hard rock, clay, sand,

and shale. The construction itself was very treacherous work, and the average stay of men working on the tunnel was about 2 weeks. The tunnel was steamy because of hot water seepages, underground streams often flooded the tunnel, and there were many other dangers to face. The tunnel is still in use today, as it diverts water from the Gunnison River at East Portal for irrigating the otherwise desert-like Uncompahgre Valley. The Gunnison Tunnel is on the National Register of Historic Places, and is a National Historic Civil Engineering Landmark.

Above the Diversion Tunnel, Reclamation also constructed three large dams on the Gunnison River, together known as the Wayne N. Aspinall Storage Unit, between 1962 and 1976. The Aspinall Unit is one of the four main units of the Upper Colorado River Storage Project (UCRSP). The three dams in the Aspinall Unit work as a system to store water, produce electricity, and regulate water flow. There is no question the dams have altered the natural environment. However, they have provided a variety of benefits to communities and citizens, especially in the area of agriculture.

ARCHEOLOGICAL RESOURCES

Cultural resources help us answer questions about our past

Sporadic archeological research in the Curecanti area began as early as the 1930s, but the first formal research was prompted in 1962 by Reclamation plans to construct the three dams along the Gunnison River. Surveys in the area of Blue Mesa Reservoir identified 10 sites with 8 below the proposed high water line behind the Blue Mesa Dam that were believed to reflect short-term occupations by nomadic Indian groups. Under Executive Order 11593, surveys were undertaken in 1976 with the University of Colorado that identified another 130 archeological sites, most within the vicinity of Blue Mesa Reservoir. Examinations in the late 1970s with both University of Colorado and NPS staff from the Midwest Archeological Center (MWAC) uncovered additional features including the remains of an isolated hearth that generated a radiocarbon date of approximately 8,000 B.C. In 1984, the Curecanti Archeological District was listed on the National Register of Historic Places. Between 1980 and 1984, MWAC undertook five seasons of construction-related research. Construction-related research projects were undertaken between 1991 and 1992 by MWAC, as well as by Powers Elevation Company and Alpine Archeological Consultants. A mix of new sites, isolated finds, and previously recorded sites were inventoried. Two formerly unrecorded sites were added to the Curecanti Archeological District nomination (NPS 1994).

Within Land Unit B (Blue Mesa Reservoir Agency), north of Blue Mesa Reservoir, important cultural material, including archeological resources, has been documented. Areas on the northeastern edge of the land unit, near North Beaver Creek, also contain cultural resources eligible for listing on the National Register of Historic Places.

HISTORIC STRUCTURES AND RESOURCES

Five structures are currently listed on the fiscal year (FY) 1999 NPS List of Classified Structures (LCS) for Curecanti NRA. One structure, the Gunnison Diversion Tunnel, is additionally listed as a National Historic Civil Engineering Landmark.

Important railroad features occur in Land Units C (Gunnison River COA), F (Gateview Agency), and G (West-End COA), and include encampments, foundations, ovens, and railroad grade features, as well as archeological resources.

Cimarron is home to a display of historic railroad cars that includes Locomotive No. 278, its coal tender, a boxcar, and caboose, which resides on the D&RG truss (also know as trestle) in the Cimarron River Canyon near the town of Cimarron. Built by Baldwin Locomotive Works in Philadelphia in 1882,

Locomotive No. 278 served as a mainline freight and helper engine on the Crested Butte Branch and this section of the D&RG's main line for over 70 years. The city of Montrose leased the locomotive, tender, and caboose to NPS in 1989 for 99 years. The truss or steel deck span bridge was installed in 1891, and was listed on the National Register of Historic Places in 1976 as the last remaining structure representing the narrow gauge railroad (NPS nd-b).

Other historic resources occur within the proposed lands, such as an old school house at Sapinero and the U.S. Forest Service (USFS) Sapinero Guard Station (Land Units E [Sapinero/Blue Mesa COA] and A [CO 92 COA]).

The Old Spanish Trail was designated as a National Historic Trail, a component of the National Trails System, by Public Law 107-325, on December 4, 2002. The trail was a trading and traveling route that connected Santa Fe with Los Angeles, and was used between 1829 and approximately 1847. The northern route passed through what is now the eastern end of Curecanti NRA and Land Unit C (Gunnison River COA), and possibly skirted Land Unit D (Iola Basin COA), although the exact location of the trail has yet to be located in this area (NPS nd-c).

RESOURCE SIGNIFICANCE

The prehistoric and historic stories of human culture in the Curecanti area are recorded in the traces and tracks left by American Indians, miners, railroaders, and ranchers. These signs document not only human struggles to survive but also how changing human value systems, economics, social, and technological changes, and the importance of water have shaped the use and character of the land and its people. Cultural history contains archeological examples of some of the oldest villages found in North America, predating the pyramids of Egypt. The narrow-gauge railroad exhibited in Cimarron graphically portrays the story of technology's effects of shaping people and using land. It is likely that the proposed lands contain additional significant cultural resources that are associated with archeological and historic resources found within the NRA.

Visitor Use, Understanding, and Enjoyment

RECREATIONAL OPPORTUNITIES

Curecanti NRA is located in a sparsely populated area of Colorado. The nearest cities, including population and distance to NRA headquarters at Elk Creek, include: Gunnison (16 miles, population 5,400); Montrose (50 miles, population 12,300); and Grand Junction (111 miles, population 42,000). The nearest large metropolitan area is Denver (200 miles, population 555,000). The Front Range of Colorado (stretching from Pueblo in the south to Fort Collins in the north) is home to 3.5 million people; 462,000 people live in the Western Slope region of Colorado, and 147,000 in the Central Mountain Region.

Approximately 1 million visitors use the NRA's facilities annually. The peak season is from Memorial Day to Labor Day, with activities focusing on water-based recreation and camping. However, there is potential to expand land-based recreational opportunities through the implementation of Alternative 2 (the Proposed Action). While the NRA is open year-round, due to its high altitude setting, approximately half of the visits occur in June, July, and August.

Annual Visitor Use

Annual recreation visitor data for 1996 to 2005 indicate that visitation has varied slightly (see Table 8). Annual visitor numbers first reached over 1 million in 1983, and except for a drop in visitor numbers in 2002, have been between 879,000 and 1,145,000 yearly since then. The impacts of higher gas prices, low reservoir levels due to drought, wildfire occurrence, and lower fishing success during some years are believed to have had an impact on the number of visits.

Table 8: Annual Visitation at Curecanti National Recreation Area, 1996–2005

Year	Number of Visitors	Percentage Change from Previous Year
1996	1,017,256	+2.4%
1997	966,680	-5.0%
1998	973,652	+0.7%
1999	1,044,523	+7.3%
2000	1,022,320	-2.1%
2001	879,776	-13.9%
2002	732,713	-16.7%
2003	1,008,810	+37.7%
2004	1,006,102	-0.3%
2005	882,768	-12.3%
10-Year Average	953,460	--

(NPS Public Use Statistics Office)

The recreation area is situated adjacent to Black Canyon of the Gunnison National Park, and is en route for many people who tour other national parks in the region (e.g., Rocky Mountain, Mesa Verde, Arches, and Canyonlands). Based on ranger observation, most visitors to the NRA are from Colorado (NPS 2002b).

Based on the available data, no dramatic increase in NRA visitation is anticipated over the next 10 years. However, general population trends in Colorado suggest an annual increase of 2% per year, and an increase in population could mean an increase in visitor numbers (CDOLA 2002). Gunnison County has a large number of summer residents and second home owners who visit the NRA on a regular basis.

Monthly Visitor Use

Based on the 10-year average, 54% of the annual visitation occurs during June, July, and August. Based on monthly visitor statistics, an average of 5,619 people visit the recreation area each day in June, July, and August (NPS Public Use Statistics Office).

Visitor Activities

Curecanti NRA is a relatively narrow strip of land and water stretching eastward approximately 40 miles from the eastern border of the Black Canyon of the Gunnison National Park along the Gunnison River corridor. It is surrounded by hundreds of thousands of mostly undeveloped acres of Reclamation, BLM, USFS, and Colorado Division of Wildlife lands, and private property that in some areas is being developed. The predominant

A variety of recreational boating opportunities are already available on Curecanti reservoirs, arms, and inlets. Alternative 2 would expand the opportunities for land-based recreation.

setting provides a rural character with a spattering of developed sites, mostly along U.S. Highway 50 (US 50). The construction of three CRSP dams along the Gunnison River between 1962 and 1976 transformed this locale into a water-based recreation destination. There are three reservoirs along the Gunnison River within the NRA; Crystal Reservoir, Morrow Point Reservoir, and Blue Mesa Reservoir. Because Crystal and Morrow Point Reservoirs lie deep within the canyon of the Gunnison River, boating there is limited by horsepower restrictions.

Blue Mesa Reservoir is approximately 20 miles long at full pool and has 96 miles of shoreline. It is divided into three basins: Iola, Cebolla, and Sapinero—all suitable for water-based recreation. Full reservoir pool sits at 7,519.4 feet above sea level. Water temperatures remain quite cold year- round, which somewhat restricts water-based recreation activities to the warmer summer months. Water related activities include the use of powerboats, canoes, sailboats, sailboards, and kayaks. Other recreational activities include sightseeing, photography, wildlife watching, fishing, hunting, swimming, hiking, backpacking, developed and backcountry camping, and picnicking. In winter, the NRA supports a variety of activities, including snowshoeing, Nordic skiing, ice skating, ice fishing, and snowmobiling.

Scenic US 50 stretches east-west along the recreation area. Therefore, Curecanti NRA is experienced by many "accidental visitors" who get out of their vehicles to walk along the shore and beaches, sightsee, find solitude, or take photographs. Developed marinas, picnic areas, campgrounds, and boat ramps are accessible from the highway, and there are numerous undeveloped pullouts and overlooks.

Curecanti NRA's recreation is currently mostly water-based, because the area was established primarily to include and immediately surround the reservoirs created for the water storage project. Therefore, a relatively small amount of adjacent land was included within the original NRA. However, surrounding the current NRA, are a variety of land-based recreational opportunities on public lands administered by other agencies, including BLM, CDOW, and USFS. And potential opportunities for enhanced resource understanding and additional resource-based recreation exist on surrounding lands that are currently under private ownership. These existing and potential opportunities are appropriate to the purpose and mission of the NRA. The National Park Service is therefore consulting with neighboring agencies and communicating with neighboring private landowners to explore ways of enhancing the enjoyment, and the recreational and educational experience of visitors to the NRA.

The following is a list of recreational opportunities (existing and potential), within and surrounding the NRA, as identified at workshops and open houses with the public and with the staff. It is not within the scope of this study to identify which of these opportunities would or would not be provided within the NRA. That would be done during a future planning process relating to a new general management plan, implementation plan, or other planning effort. It would be based on a number of factors, such as appropriateness to the resource, compatibility with each other, and impacts on resources and visitor enjoyment.

- Aerial activities (cliff diving, float planes, hang gliding, hot-air ballooning, model airplanes, parasailing)
- Artistic experiences (creative)
- Backpacking
- Biking (frontcountry, mountain)
- Boating (ice-boating, motorized, non-motorized, river kayaking, and sailing)
- Camping, designated
- Cross-country skiing
- Dog sledding
- Facility-based activities (attending conferences, dining, lodging)
- Fishing (including ice-fishing)

- Hiking (interpretive, backcountry, single or multi-day experience)
- Horseback riding
- Hunting (archery and firearms)
- Ice climbing
- Ice skating
- Interpretation and education (attending interpretive programs, educational day camp, educational residential camp, educational seminars, exploring cultural resources, exploring visitor centers and exhibits, learning about the resource, research, and touring the dams)
- Jogging and trail running
- Night sky viewing
- Observation (bird watching and other wildlife)
- Off-road vehicle use
- Photography
- Picnicking
- Rock climbing
- Scuba diving and snorkeling
- Sightseeing (motorized and non-motorized)
- Snowmobiling
- Snowshoeing
- Swimming

Hikers on Curecanti Creek Trail

- Water skiing (towed, or self-propelled), wake boarding, and tubing
- White-water rodeo
- Windsurfing

The most popular existing visitor activities and potential recreational uses are discussed below in more detail.

Camping and Picnicking—There are 10 developed campgrounds with about 390 campsites, and 21 backcountry/boat-in campsites within the NRA. There are 19 picnic areas within the recreation area, with many of these located adjacent to campgrounds or other developed facilities. Record high numbers of campers (including tent and RV camping) occurred in the late 1980s, with 120,000 overnight stays per year. The 10-year average for annual overnight stays is 63,780, which includes tent campers, RV campers, and backcountry campers (NPS Public Use Statistics Office).

Hiking, Backpacking, Sightseeing, Wilderness-Like Experience, and Other Recreational Activities—There are designated hiking trails along the northern side of the reservoirs including the Crystal Creek Trail, Mesa Creek Trail, Hermits Rest Trail, Curecanti Creek Trail, and Dillon Pinnacles Trail. The pinnacles are the dominant geologic feature along Blue Mesa Reservoir. The Dillon Pinnacles Trail is very popular, offering spectacular views of the reservoir, the distant San Juan Mountain peaks, and the interestingly eroded volcanic pinnacles.

Two trails to the reservoirs are reached from US 50. The Mesa Creek Trailhead, which is on the north side of Crystal Reservoir just below Morrow Point Dam, is accessed from the south side of the reservoir by crossing a footbridge over to the northern shoreline. Parking for the trailhead is reached via the road leading from Cimarron to the dam. The Pine Creek Trail, which runs along the south shore of Morrow Point Reservoir just below Blue Mesa Dam, is accessible from a trailhead just off US 50.

Backcountry areas that offer opportunities for solitude occur within the current NRA primarily on Crystal and Morrow Point Reservoirs. However, access can be difficult. Some of the arms on Blue Mesa Reservoir offer similar opportunities. However, boat and vehicle noise may be clearly audible. Greater potential exists on proposed lands for such solitude opportunities, especially Land Units A (CO 92 COA), B (Blue Mesa Reservoir Agency), and H (West-End Agency). An example of a potential extended backcountry opportunity is a continuous trail along the north rim above the Gunnison River, linking Gunnison Gorge National Conservation Area, Black Canyon of the Gunnison National Park, and Curecanti National Recreation Area.

Backcountry/boat-in camping opportunities exist on all the reservoirs. Due to the narrowness of reservoir arms and creek outlets, the visitor is more in touch with the surrounding landscape and geology. Though the NRA offers multiple opportunities for backcountry camping on the reservoirs, there is limited opportunity for backpacking experiences elsewhere in the NRA. However, potential exists within the proposed lands for backpacking, especially in Land Units A (CO 92 COA), B (Blue Mesa Reservoir Agency), and H (West-End Agency).

Boat-in camping offers backcountry experiences

Horseback riding is currently an approved activity in some areas, such as the Dillon Pinnacles Trail to access the West Elk Wilderness north of Curecanti NRA. Horse corrals are located at Dry Gulch and Ponderosa campgrounds and outside the NRA at Soap Creek Campground (USFS).

Equestrian opportunities may be expanded under Alternative 2

Mountain biking is a popular activity in Gunnison County. Several trails exist on public lands east of the NRA, and bicyclists also enjoy riding paved and unpaved roads. US 50 raises a safety concern due to vehicle speed; however, much of US 50 has been widened to include 8-foot paved shoulders. There is a potential to designate bicycle trails in the NRA, and a desire on the part of the local trails commission to find a trail to connect the NRA to the City of Gunnison. The potential to connect trails elsewhere is greatly enhanced by using existing roads and trails within the proposed lands, such as in Land Units C (Gunnison River COA) and D (Iola Basin COA). For example, an east-west bicycle trail might be appropriate south of Blue Mesa Reservoir.

For cross-country skiing enthusiasts, there are several areas that offer good skiing to those who enjoy the challenge of breaking trail

or following informally established routes; however, there are no groomed ski trails. Skiers can ski the frozen, snowy surface of Blue Mesa Reservoir, ski the level road to the East Elk Creek Campground, or beyond to the Sapinero Wildlife Area for a round-trip distance of 4 miles.

Cross-country skiing opportunities at Curecanti NRA would expand under Alternative 2.

Cross-country skiing is highly dependent on sufficient snow accumulation, which has varied greatly over the years. Skiing within the NRA is popular on the frozen surface of Blue Mesa Reservoir. However, skiing within the NRA at higher elevations is greatly restricted, because the NRA does not currently include higher elevations. Areas north of Blue Mesa Reservoir are generally closed to conserve severe winter deer and elk range. However, some land units would offer additional potential for cross-country skiing at higher elevations, particularly Land Units A (CO 92 COA) and E (Sapinero/Blue Mesa COA).

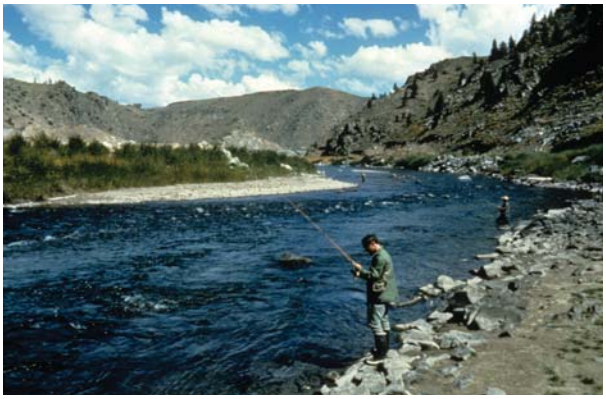
Ice climbing is an appropriate activity. However, there are limited locations where sufficient ice flows accumulate, and some of these locations have difficult or no public access. The potential to improve and/or open up such access occurs in Land Units A (CO 92 COA) and E (Sapinero/Blue Mesa COA).

Sightseeing is an important aspect of all recreational activities, as well as an end in itself, for NRA visitors and highway travelers. The natural open spaces and the spectacular geological and mountainous setting for streams, lakes, and canyons are key contributors to visitor enjoyment of the

Fall sightseeing opportunities along the West Elk Loop Scenic and Historic Byway (CO 92)

NRA. More detailed information about scenic resources can be found later in this chapter.

Fishing and Hunting—Fishing and hunting are permitted within the NRA in accordance with federal and Colorado state regulations. Colorado Division of Wildlife (CDOW) has concurrent jurisdiction in the management of fish and wildlife in the NRA, and federal regulation adopts non-conflicting state statutes that deal with harvesting of fish and wildlife. Under both Alternatives 1 and 2, NPS would continue to cooperate with CDOW on related matters. Therefore, there would be no change in the way fishing and hunting are managed under either alternative.



Fishing is a primary draw to the rivers and reservoirs of Curecanti NRA

Fishing is generally permitted in units of the national park system unless specifically prohibited. There is no regulation prohibiting fishing within Curecanti NRA. Fishing is one of the primary activities at the NRA, as the area provides some of the best cold-water fishing opportunities in the nation. Federal

and state fish hatcheries stock over 3 million fish in Curecanti's reservoirs each year. Brook trout are found in local tributaries, while brown, rainbow, and Mackinaw (lake trout) are common fish in Curecanti's reservoirs. Blue Mesa is also well known for its nationally significant kokanee salmon fishery. Fishing from both boats and the shoreline are popular at Blue Mesa Reservoir, and from hand-carried watercraft at Crystal and Morrow Point Reservoirs.

Hunting is permitted in units of the national park system when authorized by specific statute or regulation, and not subsequently prohibited by regulation. Hunting is authorized within Curecanti NRA by Title 36, Code of Federal Regulations, §7.51. For purposes of public safety and wildlife management, the Superintendent's Compendium can and does close specific locations to hunting (for example, no hunting within 100 yards of developed areas). Under the Proposed Action, some minor changes could occur to the total acreage open to hunting. For example, if a private parcel is acquired from a willing seller, additional land may become available for hunting that is not now open to the public. Under Alternative 2, land proposed to be transferred to the NRA from other agencies would continue to support hunting if hunting is currently permitted on such land.

Sailboats capture the stiff afternoon breeze across Blue Mesa Reservoir

Land units of private property within the COA provide a potential to expand fishing and/or hunting opportunities into areas not now publicly accessible, subject to future acquisitions from willing landowners (such as through exchange, purchase of fee simple interest, obtaining a right-of-way or easement) or landowner agreement. Public comment suggested a need to seek greater fishing opportunities along Curecanti Creek by CO 92 (Land Unit A), to improve fishing access along the south shore of Blue Mesa Reservoir east of the Middle Bridge (Land Unit E), and along the Gunnison River (Land Unit C).

Fishing from boats, one of the most popular activities on Blue Mesa Reservoir

Water-Based Recreation—Some swimming occurs at Blue Mesa Reservoir, despite its cold waters (average surface temperature is 65° F in summer). There are no designated swimming beaches. However, Bay of Chickens, Dry Creek, and Old Highway 50 beach are sometimes used, because they are less steep and rocky, and have designated "no wake" zones. Water skiing occurs in July and August when waters are at their warmest.

Elk Creek, one of two marinas on Blue Mesa Reservoir

Watercraft use has occurred on Blue Mesa Reservoir since the reservoir was created in 1965. Fishing and recreational boating are the main activities.

Based on angler surveys conducted by the Colorado Division of Wildlife in 2001, approximately 14,635 boats used Blue Mesa Reservoir during the May to October season. The largest group of motorized watercraft using the reservoir is fishing boats. In 2002, 1,160 annual boating permits were issued for Curecanti NRA, and 4,137 2-day to 2-week permits were issued. All motorboats are required to have permits displayed on them. During a holiday weekend, such as Fourth of July, there can be up to 200 boats on the reservoir.

Kayakers, canoeists, and sailors also visit the recreation area, but make up a small percentage of reservoir users. Due to the cold temperature of the water and the common high afternoon winds, canoeing and kayaking is concentrated along shorelines and in the narrower arms of the reservoir and east of the Lake City Bridge. Windsurfing on Blue Mesa Reservoir has been a popular activity in the past. Recent years have seen some decline; yet windsurfing still occurs, primarily in Iola Basin.

Boat dock and slip rentals at Elk Creek Marina

There are designated, paved launch ramps on Blue Mesa Reservoir at Lake Fork Marina, Elk Creek Marina, Ponderosa, Stevens Creek, and Iola. When reservoir levels are low, some of these designated ramps are not usable.

There are two marinas operated by concession on Blue Mesa Reservoir: at Elk Creek and at Lake Fork. Services include showers, groceries, fishing supplies, slip rentals, boat rentals (aluminum fishing boats, pontoon boats, and speed boats), gas sales, boat repairs, and dry boat storage. The concession offers guided fishing on Morrow Point Reservoir. A restaurant is located at Elk Creek near the marina.

Resource Significance

Recreational opportunities in the NRA related to hiking and trail access, scenic overlook development, wildlife viewing, backcountry camping, increased hunting and fishing access, and other low impact recreational activities are currently limited to a few key sites. In addition, the majority of recreational opportunities currently available within the NRA are found along US 50 in the more developed frontcountry area of Blue Mesa Reservoir and continuing east along the Gunnison River.

Much of the land surrounding the existing NRA is ideally suited to provide more of the popular recreational activities that are currently available on a somewhat limited basis within the NRA. Alternative 2 (the Proposed Action) of the study, would provide the potential to greatly expand these land-based recreational opportunities for NRA visitors.

INTERPRETATION AND EDUCATIONAL OPPORTUNITIES

Visitors to Curecanti can use NRA and other information resources to plan their visits. An NPS website provides information about camping and other activities. The public information office can mail pre-visit materials to those requesting them by phone or mail.

Curecanti NRA offers outreach and educational programs that are designed to increase awareness and foster an appreciation for the NPS mission and the natural, cultural, and recreational resources of the NRA.

Personal service programs are provided for over 10,000 pre-school, K–12, college/university students, and lifelong learners in 11 communities, 6 school districts, and colleges and universities across the nation. Undergraduate and graduate level courses are offered annually for teachers.

Interpretive Facilities

Elk Creek Visitor Center, the NRA's principal visitor center is located 16 miles west of Gunnison on US 50. This visitor center provides information on visitor activities, and has a wide-variety of interpretive publications for sale. Evening programs are offered on some summer evenings at the nearby Elk Creek Campground Amphitheater.

Visitor trends at the Elk Creek Visitor Center suggest this facility is currently underused, with as few as 200 visits per day during the peak summer months. In comparison, the visitor center located at the nearby Black Canyon of the Gunnison National Park receives 2,000 visits per day in summer. Visitor use and trends suggest that a different location for the principal visitor center would serve the public more effectively. Lands surrounding the NRA that are being examined in this study might provide such an opportunity. For example, other more ideal locations might be just east of Sapinero, or at Hunters Point. Both locations would have easy access to and from US 50. The consideration of a specific location would be addressed in a new general management plan, or implementation plan for the NRA, should the Proposed Action of this RPS be implemented.

A second visitor center is located at Lake Fork. Located off US 50 near the Blue Mesa Dam, this visitor center provides a photo display related to history and resources of Curecanti and a sales outlet. Due to staff and funding shortages, the Lake Fork facility was not open in the 2005–2006 seasons.

A third visitor center is located at Cimarron, on US 50 approximately 45 miles west of Gunnison and 20 miles east of Montrose. It provides exhibits on the Denver and Rio Grande Railroad that operated its narrow gauge line in this area from 1881 until 1949. A sales outlet for interpretive materials, with an emphasis on railroad history, is located at the Cimarron visitor center.

Parking turnouts along the highways within the proposed lands provide opportunities for enhanced interpretive and educational activities that support the NRA's purpose. Areas such as Land Units A (CO 92 COA) and E (Sapinero/Blue Mesa COA) offer views of geological formations such as the Dillon Pinnacles, as do other locations in the NRA. North and South Beaver Creek (Land Units B [Blue Mesa Reservoir Agency] and C [Gunnison River COA]) could provide a variety of interpretive opportunities. Areas along US 50, particularly through Land Unit E (Sapinero/Blue Mesa COA), could provide an opportunity for new opportunities to capture visitors and other highway users to interpret Blue Mesa Reservoir and other area resources.

Resource Significance

Interpretation and educational opportunities are essential for sharing the importance of the resources at the NRA with visitors and students of all ages. Continued outreach education is an essential component of the program; such efforts help instill a sense of reverence for the land, and encourage recreational uses that are compatible with, yet do not degrade the resources.

Sapinero Basin on Blue Mesa Reservoir

Opportunities for visitor facilities and interpretive activities would be enhanced by Alternative 2 (the Proposed Action). Potential locations for both occur in some areas of the proposed lands, especially within Land Unit E (Sapinero/Blue Mesa COA).

Scenic Resources

Covering Gunnison and Montrose Counties, the reservoirs and canyons of Curecanti NRA offer a premier wild setting that contains a variety of magnificent scenic resources. The Curecanti area is recognized nationally and locally for its high scenic qualities and viewsheds, especially those experienced from the waters of Blue Mesa Reservoir and the West Elk Loop Scenic and Historic Byway, where segments of US 50 and CO 92 play an important role.

Scenic viewsheds and overlook points play a major role in the visitor experience and recreational enjoyment of the NRA, particularly from Blue Mesa Reservoir and along the CO 92 corridor that skirts the Black Canyon that contains Morrow Point and Crystal Reservoirs. Curecanti receives a great many "accidental visitors," travelers who encounter the scenic landscapes while driving highways within and adjacent to the NRA. Many of these travelers use roadside overlooks and pull-outs to sightsee and photograph the outstanding landscapes.

Based on a Visitor Satisfaction Survey conducted by NPS at Curecanti during the summer of 1998, visitors feel that scenic resources are very important to their sense of enjoyment of the NRA. Following are summarized responses to statements on the survey that relate to the scenic resource:

A total of 390, or 98% of the people who responded to the following statement on the survey, agreed or strongly agreed with the statement: *I am visiting Curecanti because I want to enjoy distant and unobstructed views.*

A total of 321, or 98% agreed or strongly agreed with the statement: Preserving natural views surrounding Blue Mesa Lake (Reservoir) from increasing development is important to me.

View from Colorado Highway 92

A total of 321, or 98% disagreed or strongly disagreed with the statement: There should

be no limits to development on the land surrounding Blue Mesa Lake (Reservoir).

A total of 276, or 70% disagreed or strongly disagreed with the statement: *Humans have the right to modify the natural environment to suit their needs*.

Soap Mesa from Soap Creek Road

Many of the scenic vistas observed by visitors are outside of the NRA on public or private lands. Some of these vistas are on land units within the proposed lands and are observed from existing overlooks within the NRA, as well as from the highways and reservoirs. Additionally, vistas within the NRA and beyond the NRA are seen from these land units. These important views are listed below.

- Lands surrounding CO 92 (Land Unit A) are visible from Blue Mesa Dam Overlook, Pioneer Point, Hermit's Rest, and Crystal Creek Trailhead within the NRA. From CO 92, visitors can observe Morrow Point Reservoir, Curecanti Needle, Blue Mesa Reservoir, and Crystal Reservoir within the NRA, and Fitzpatrick Mesa, Blue Mesa (including Hunters Point and Windy Point) on lands adjacent to the NRA. These views on adjacent private lands are contained primarily within Land Units A (CO 92 COA), E (Sapinero/Blue Mesa COA), and G (West-End COA). The San Juan Mountains are visible to the south.
- Soap Mesa (Land Unit A) is observed from Sapinero, the Dillon Pinnacles Overlook and Trail, Ponderosa Campground, McIntyre Gulch, and Blue Mesa Reservoir within the NRA. From Soap Mesa, one can see Blue Mesa Reservoir within the NRA and Fitzpatrick Mesa, Sapinero Mesa, and Blue Mesa adjacent to the NRA (Land Units A [CO 92 COA] and E [Sapinero/ Blue Mesa COA]), and the San Juan and West Elk Mountains in the far distance.
- Sapinero Mesa (Land Unit E) is visible from the following areas within the NRA: US 50 and CO 92; Sapinero and Dillon Pinnacles Overlooks; Soap Creek Road; Ponderosa Campground; McIntyre Gulch; Lake Fork Campground

Looking southeast to Sapinero Mesa from Soap Creek Road

and Marina; Blue Mesa Reservoir; and Elk Creek Campground. From Sapinero Mesa, visitors can view lands above CO 92 and Soap Mesa in Land Unit A (CO 92 COA) adjacent to the NRA, Blue Mesa Dam and Blue Mesa Reservoir, and the West Elk Mountains, Sawatch Range, and Continental Divide in the far distance. There is a potential location for a future visitor center in this area adjacent to and south of US 50. However, further analysis of such a facility would more appropriately be carried out in a future general management plan or implementation plan.

Curecanti Needle, as seen from the South Rim of the Black Canyon, near Windy Point

Fitzpatrick Mesa

- Blue Mesa (Land Unit E), including Hunters Point and Windy Point, is visible from existing overlooks along CO 92 (Blue Mesa Dam Overlook, Pioneer Point, and Hermit's Rest) and the US 50 corridor. Areas within the NRA below (north of) Windy Point provide what is likely the most impressive views of the Curecanti Needle, Chipeta Falls, the rugged

Aerial view of several tributaries to the Black Canyon of the Gunnison, including Spring Gulch (distant left)

cliffs and waters of Morrow Point Reservoir and scenic Soap Mesa. However, access is not available to this location due to the proximity of private lands. From Hunters Point, the view toward Blue Mesa Reservoir

Gunnison River west of Gunnison

includes, within its landscape, the Dillon Pinnacles, West Elk Mountains, and Soap Mesa. With its immediate access from US 50, it is a site that may be suitable for the future location of a visitor center. This would be addressed in a new general management plan or implementation plan for the NRA.

- Fitzpatrick Mesa (Land Unit A), south of Morrow Point Reservoir, is visible from existing overlooks along CO 92 (Pioneer Point and Hermit's Rest), and from several pull-outs along CO 92. From Fitzpatrick Mesa, visitors can view Morrow Point Reservoir within the NRA, CO 92 corridor, including lands to the north, Blue Mesa, and Soap Mesa (Land Units A [CO 92 COA] and E [Sapinero/Blue Mesa COA]), and the West Elk and San Juan Mountains and Sawatch Range in the far distance.
- Spring Gulch on the northwest end of Crystal Reservoir (Land Unit G) is visible from overlooks along East Portal Road and the Black Canyon of the Gunnison South Rim Drive.
- Agrarian and riparian landscapes are visible from US 50 and overlooks within the NRA, between Lake City Bridge and the eastern entrance to the NRA.

High quality natural or agrarian landscapes were identified by the public during a photo assessment workshop during the study process. Many of these areas are within existing vistas and land units identified above and include some scenes that are thought to best depict Gunnison and Montrose Counties. Specific areas identified within these land units or other nearby areas include the following:

- Area along CO 149 past Iola, including Blaine Rock, as seen from Blue Mesa Reservoir
- Open bluffs and viewsheds north of Blue Mesa Reservoir at East Elk Creek
- South side of Blue Mesa Reservoir as seen from Bay of Chickens
- Land to the south of Middle Bridge
- Land between Lake City Cutoff Road and Sapinero
- Sapinero Mesa west into Lake Fork Canyon
- Land near and to the south of Blue Mesa dam as seen from Blue Mesa Reservoir
- West Elk Creek and Soap Creek area north of Blue Mesa Reservoir, including land north of Dillon Pinnacles, the peninsula between West Elk Arm and Soap Creek Arm, and the land along Soap Creek Road
- Soap Mesa plateau, from and including Cottonwood Gulch area to Pioneer Point
- Intersection of CO 92 and Soap Creek Road
- CO 92 west of Corral Creek, Curecanti Creek and Meyers Gulch, and east of Deadman's Curve

- Land along US 50 west of Blue Mesa Dam
- Vicinity of first switchback on US 50 north of Blue Creek that provides a good view of Sheep Mountain
- Fitzpatrick Mesa
- Hillside southeast of Cerro Summit as seen from CO 92 west of Montrose County line
- Top of East Portal Road.

Examples of unique geological and/or visually attractive features were also identified, suggesting places within the NRA that still need to be protected, or places outside the NRA that might need more conservation. Such sites included the north side of US 50 between Dry Creek and Red Creek, containing West Elk Breccia rock formation (ancient volcanic mudflow), and Morrison Formation, which is known to contain dinosaur fossils elsewhere. Soap Creek cliffs, Dillon Pinnacles, Curecanti Needle, and Curecanti Creek at hairpin curve on CO 92 were also suggested as areas that may need additional conservation, whether within or outside the NRA.

RESOURCE SIGNIFICANCE

An appreciation of the unique aspects of the scenic vista has long been associated with this area. As the 1965 Memorandum of Agreement between Reclamation and NPS was being developed for management of the NRA, scenic resource values were recognized as part and parcel of the natural resource environment. In 1999, when Congress passed Public Law 106-76, which called for this study, the concept of scenic resource values took its independent place along with the other natural, cultural, and recreational resource values to be assessed.

The scenic vistas within and adjacent to the NRA are an important component of visitor enjoyment, experience, and appreciation. The scenic resources contribute to the national and regional significance of Curecanti NRA, as well as the West Elk Loop Scenic and Historic Byway that passes through and beyond the NRA. Besides the important geologic formations that are evident in the NRA, the open mountain vistas and natural landscapes within and surrounding the NRA are untouched in comparison to many other mountain park-like areas. Scenic vistas seen from existing corridors such as US 50, CO 92, CO 149, and from the water surface of Blue Mesa Reservoir within the NRA provide a varied and exceptional visual experience. Opportunities to enjoy a variety of recreational water and land-based activities within such a spectacular setting are unique to the NRA.

The extremely scenic geological and natural landscape setting is considered to be a key resource for enjoyment of the NRA. Development on private lands surrounding the NRA, especially within the COA, has been increasing in the past few years. There is a potential for development of privately held mineral rights at a number of locations within the NRA. This is already occurring at the Dickerson Pit near Beaver Creek, towards the east end of the NRA, along US 50. If such development should continue without regard for potential impacts on viewsheds and other resources important to the NRA, the recreation and overall experience at Curecanti may well be diminished along with its unique vistas and rural setting. It is essential that the scenic resource be conserved, in order for Curecanti to retain its unique and spectacular setting for recreational activities. Alternative 2 (the Proposed Action), provides tools to accomplish this end in cooperation and partnership with the counties and neighbors.

Regional Economic and Social Characteristics

REGIONAL SETTING

Curecanti NRA is a 40-mile-long area located in Gunnison and Montrose Counties in southwestern Colorado. The eastern edge of the NRA lies approximately 5 miles west of the City of Gunnison. The Cimarron area of the NRA is 20 miles east of Montrose, while the

western-most area of the NRA, at East Portal, is 16 miles northeast of the City of Montrose. Black Canyon of the Gunnison National Park, also administered by NPS and adjacent to Curecanti NRA on its west end, lies entirely within Montrose County.

Gunnison County encompasses approximately 3,257 square miles, or 2,084,480 acres. Within the county, USFS administers over 1.2 million acres of the Gunnison, Uncompahgre, and White River National Forests; BLM administers over 300,000 acres; Reclamation administers 31,161 acres; and NPS administers 32,223 acres (including land being administered under agreements with Reclamation and USFS). There are five wilderness areas and numerous state-owned wildlife and resource management areas. Crested Butte is home to the Crested Butte Mountain Resort, offering year-round activities.

Montrose County encompasses 2,247 square miles (1,438,080 acres). Of this total, the USFS administers over 320,000 acres of the Gunnison, Uncompahgre, and Manti-La Sal National Forests; BLM administers over 620,000 acres; Reclamation administers 30,677 acres; and NPS administers 36,820 acres (including land being administered under agreements with Reclamation and USFS). There are two wilderness areas, one national park, one national conservation area, and three state wildlife areas.

POPULATION

Colorado is the seventh fastest growing state in the United States (CDOLA 2002), and the Gunnison basin as a whole is experiencing an explosive increase in both permanent population and seasonal visitation (CDOLA 2002). Gunnison county ranks twenty-third (top 36%) and Montrose County ranks twenty-first (top 33%) for rate of population change in the state (CDOLA 2002).

The Gunnison County population increased approximately 3.1% annually from 1990 to 2000 resulting in a 36% change over the 10-year period (Table 9). Montrose County population rose approximately 3.2% annually between 1990 and 2000, resulting in a 37% growth rate, slightly higher than Gunnison County. Annual growth rates in Montrose County have been above the annual 2.71% rate of the state. However, since 2000, Gunnison County annual growth has been only slight (less than 1%), whereas Montrose County continues to show annual growth between 2 and 3%. By 2020, population in Gunnison and Montrose Counties is expected to reach approximately 20,346 and 50,530 persons, respectively (CDOLA 2002).

Including annexation, the city of Montrose has sustained an annual growth over the last five years of 6%, while the city of Gunnison has shown a slight decrease.

Table 9: Population Estimates

Town or County	1990	2000	2005
Gunnison County	10,273	13,956	14,264
Montrose County	24,423	33,432	37,880
City of Gunnison	4,636	5,409	5,303
City of Montrose	8,854	12,344	16,070

Source: Colorado State Demography Office (dola.colorado.gov/dlg/demog)

ECONOMIC CONDITIONS

In Gunnison and Montrose Counties, approximately 75% of jobs are in wage and salary positions where people work for someone else. The remaining jobs (25%) are individuals that are self-employed. Unemployment averaged 6.4% for Gunnison County and 4.8% for Montrose County in November 2003. Unemployment in Colorado was 5.6% during the same period (Colorado Labor Market). Wage rates are below the statewide averages.

Employment by industry in Gunnison County has remained relatively unchanged since 1985, except for some decline in sectors such as mining. In 2000, the largest employment sectors included Wholesale/Retail (26%) and Services (27%) followed by Government (15%), Construction (10%), and Financial/

Insurance/Real Estate (7%). The remaining sectors such as agriculture and mining were 5% or less. In Montrose County, the employment distribution is similar. The Service (25%) and Wholesale/Retail sectors (24%) are largest, followed by Government (13%), Manufacturing (10%), Construction (10%), and Agriculture (8%) (Montrose County 2001). In both counties, the Service sectors not only provide the most jobs but have demonstrated the most new job growth from 1970 to 1997. The largest component of the Service sector in Gunnison County relates to recreation, whereas in Montrose County it is health services (Wilderness Society 1999). Tourism is a major industry for the region, with visitors coming year-round to enjoy activities such as skiing, rafting, fishing, kayaking, camping, hiking, and sightseeing (Region 10).

Non-labor income is the largest component of Total Personal Income (TPI) in both Gunnison and Montrose Counties. Non-labor income includes income sources such as dividends, interest, rent, and transfer payments, such as social security and other pension programs. Non-labor income represented 28% of TPI in both Gunnison and Montrose Counties in 1970. In 1997, non-labor income remained at 28% of TPI in Gunnison County, whereas it grew to 40% of TPI in Montrose County. Both figures are indicative of a growing retirement community and households with investment income. The Service industries have also accounted for between 13% and 20% of income growth in counties within the same time period (Wilderness Society 1999) (Region 10).

Gunnison County per capita retail sales in 2002 averaged $28,321 and retail sales totaled $397.2 million. Gunnison County per capita sales exceeded the statewide average by 23%. Montrose County per capita sales in 2002 averaged $19,495 and retail sales totaled $692.7 million. Montrose County per capita sales were 84.8% of the Statewide average. City of Montrose is the dominant trade center in the area with 2002 retail sales of $586.6 million (CDH nd) (Region 10).

In 2001, the average wage paid workers in Gunnison County was only 63% of the Colorado average and 68.8% for Montrose County. Gunnison County per capita personal income was $22,762 and $23,007 for Montrose County. For that time period, the State average per capita income was $33,455 (CDH nd) (Region 10).

Agricultural sales of livestock and crops by Gunnison County farmers and ranchers totaled $7 million in 2001 and $96.2 million by Montrose County farmers and ranchers (CDH nd) (Region 10).

The median price of a 1,500 square foot home in Gunnison County as of January 2002 was $227,985 ($151.99 per square foot), and in Montrose County it was $139,470 ($92.98 per square foot) (CDH nd). The average sale price of a home in the City of Gunnison and surrounding area increased 12.3% from 2000 to 2002, and in Montrose County the increase was 2.4% (CDH nd) (Region 10).

NRA CONTRIBUTION TO REGIONAL ECONOMY

Visitors to Curecanti, NRA staff, and their households are integral to the regional economic and social structure. Some key dimensions of the NRA's role within the region are described below.

Curecanti NRA provides economic stimulus with ongoing operating and capital expenditures. The budget for fiscal year 2005 was $3,041,000. Salaries for interpretation, law enforcement, and search and rescue activities comprise the largest share of the budget. The remaining funds are allocated for activities such as facility operating and maintenance, resource conservation, and management services. Portions of the NRA's annual expenditures circulate through the regional economy in the form of consumer and business purchases, yielding indirect economic benefits.

In addition to the direct stimulus attributable to the NRA, spending by its visitors contributes to the local economy. Evaluation of visitor spending in and around units of the national park system, based on 2005 dollars, indicates

that an average party of visitors to a NPS unit, such as the NRA, spends $42.72 per day if the party is from the local area; $62.84 per day if the party comes from outside the local area; and $193.37 per day if the visit includes an overnight at a local motel (NPS 2006b).

Money Generation Model version 2 (MGM2) is an economic model developed for NPS to estimate local and non-local tourism on the local economy. Economic impacts of visitor spending are estimated in the MGM2 using multipliers for local areas for each unit of the park system (NPS 2006b). This includes the direct and secondary economic effects in gateway communities around the park unit in terms of jobs, personal income and value added. Value added is the sum of personal income, profits and rents and indirect business taxes. The following are the results of applying MGM2 to evaluate Curecanti NRA economic impacts using 2005 data (NPS 2006b):

- Total Visits - 904,433
- Total Combined Sales- $35,571,000
- Total New Jobs Created – 697
- Value Added - $20,330,000.

Conserving resources enhances quality of life

PAYMENTS IN LIEU OF TAXES

"Payments in Lieu of Taxes" (or PILT) are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries. Payments are calculated following a formula that takes into account a variety of factors: acres of eligible land, county population, consumer price index, and previous year payments from other federal agencies, including state pass-through laws that require payments to pass from counties to local communities or entities rather than staying with the county government (Bodine and Koontz 2003).

In 2003, federal payments in lieu of taxes amounted to $342,195 for Gunnison County and $1,250,560 for Montrose County. Of the approximately 1.6 million acres of federal land in Gunnison County and 900,000 acres in Montrose County, Reclamation lands and land interests and NPS lands that make up the NRA and the national park, represent only 2.5% and 6% of these total acres and PILT payments by respective county (BLM 2003).

QUALITY OF LIFE

Residents of both counties, as well as the respective county governments, recognize that the environmental resources within the counties are an important component of their economies, including recreation and tourism.

A 2002 Community Profile Survey developed by the Gunnison County Planning Commission with Board of County Commissioners surveyed 4,500 houses with a 41% response rate on a variety of issues. Those responding were asked to rate how important the environment /open space would be to them in terms of importance facing Gunnison County over the next 5 years using a scale of 1 to 5 (five being the least important). Forty percent indicated that it was the most important issue. Those ranking it at a level 2 were between 20 and 25% and level 3 between 15 and 20%. When asked how they perceived growth in the East River Valley, more than 40% of those responding indicated that regulations should be changed to direct growth. Another 30% indicated that

Table 10: Reserved Sub- Surface Interests

T	R	Section	Previous Owner	Interests Reserved
49N	2W	13	Cooper, M.	oil & gas – subordinated to CRSP
49N	2W	22	Benson, S., et al.	oil & gas – subordinated to CRSP
49N	2W	22	Charter, et al.	oil & gas – subordinated to CRSP
49N	2W	22	Cox, E.	oil & gas – subordinated to CRSP
49N	2W	22	Hackett, E.	oil & gas – subordinated to CRSP
49N	2W	22	Harris, E.	oil & gas – subordinated to CRSP
49N	2W	22	Matchett, T.	oil & gas – subordinated to CRSP
49N	2W	22	McKelvey, J.	oil & gas – subordinated to CRSP
49N	2W	22	Owen, P.	oil & gas – subordinated to CRSP
49N	2W	22	Rueger, R.	oil & gas – subordinated to CRSP
49N	2W	22	Wright, S.	oil & gas – subordinated to CRSP
49N	2W	23	Clark, W.	oil & gas – subordinated to CRSP
49N	2W	23	Larimore, et al.	oil & gas – subordinated to CRSP
49N	2W	23	McClure, A.	oil & gas – subordinated to CRSP
49N	2W	13, 24	Harris, E.	oil & gas – subordinated to CRSP
49N	2W	19, 20, 29, 30	Oswald, M.	oil, gas & minerals – subordinated to CRSP
49N	2W	19, 29, 30	Keenan, F.	oil, gas & minerals – subordinated to CRSP
49N	2W	21, 22, 27	Rippling River Ranch	oil & gas – subordinated to CRSP
49N	2W	21, 28, 29	Burris, C.	oil & gas – subordinated to CRSP
49N	2W	23	Wood, F.	oil, gas, coal & minerals – subordinated to CRSP
49N	2W	23	Wright, F.	oil & gas – subordinated to CRSP
49N	2W	24	Costello, A.	oil & gas – subordinated to CRSP
49N	2W	24	Dickerson, R.	oil, gas & decomposed granite – subordinated to CRSP
49N	2W	24	Doran, L.	oil & gas – subordinated to CRSP
49N	2W	27, 28, 29, 31, 32, 34	Blackstock, E.	oil, gas, coal & minerals – subordinated to CRSP
49N	2W	29	Gunnison School Dist.	oil & gas – subordinated to CRSP
49N	2W	29	Killion, R.	oil & gas – subordinated to CRSP
49N	2W	29	Kleitz, D.	oil & gas – subordinated to CRSP
49N	2W	29	Laskowski, A.	oil & gas – subordinated to CRSP
49N	2W	31	Bannister, O., et al.	oil & gas – subordinated to CRSP
49N	2W	31	Howe, K.	oil & gas – subordinated to CRSP
49N	2W	31	Reiss, P.	oil & gas – subordinated to CRSP
49N	2W	31	Sunderlin, R.	oil & gas – subordinated to CRSP
49N	2W	32, 33	Woodward, D.	oil & gas – subordinated to CRSP
49N	3W	25, 26	Holman, J.	oil & gas – BMR Parcel 12A (10 acres in Sec. 25) had reserved oil/gas rights subordinated to CRSP
49N	3W	27, 28, 29, 32, 33, 34	Miller, A.	oil & gas – subordinated to CRSP
49N	3W	28, 29, 30, 31, 32	Moncrief, W.	oil & gas – subordinated to CRSP
49N	3W	34, 35	Trout Haven Inc.	oil & gas – subordinated to CRSP
49N	3W	35	Dyer, D.	oil & gas – subordinated to CRSP
49N	3W	36	Abrahamson, J.	oil & gas – subordinated to CRSP
49N	3W	36	Sunderlin, R.	oil & gas – subordinated to CRSP
48N	4W	1, 2	Holman, J.	oil & gas – additional research necessary
48N	4W	2, 3, 4, 10	Austin, N.	oil & gas – subordinated to CRSP
48N	4W	3, 4	Curecanti Sheep Co.	oil & gas – subordinated to CRSP

T	R	Section	Previous Owner	Interests Reserved
49N	4W	14, 15, 16, 21, 22, 23	Carpenter, F.	oil & gas – subordinated to CRSP
49N	4W	16, 21, 27, 28, 29, 33	LeValley, J.	oil & gas – subordinated to CRSP
49N	4W	26, 27	Gilmore, L., et al.	oil & gas – subordinated to CRSP
49N	4W	28	Goodwin, C.	oil & gas – subordinated to CRSP
49N	4W	32	Cotten, C.	oil & gas – subordinated to CRSP
49N	4W	32	Curecanti Sheep Co.	oil & gas – subordinated to CRSP
49N	4W	32	Lucas, E.	oil & gas – subordinated to CRSP
49N	4W	32	Oswalt, H.	oil & gas – subordinated to CRSP
49N	4W	32, 33	Santarelli, R.	oil & gas – subordinated to CRSP
49N	4W	33, 34, 35	Holman, J.	oil & gas – additional research necessary
48N	6W	5	Bliss, R.	oil & gas – subordinated to CRSP
48N	6W	5	Brack, L., et al.	oil & gas – subordinated to CRSP

Source: Cooper, Katherine, NPS, Land Resources Program Center, November 2000

regulations should be changed to limit growth. When asked "what do you value most about living in Gunnison County", the value of scenery was ranked as one of the important reasons by over 75% of survey respondents (levels 1 through 6 out of 13) (Michaelson nd).

Montrose County conducted a community survey in late 1999 asking residents to respond to the draft Master Plan. Eighty of the 119 respondents indicated that planning and zoning was essential. Eighty respondents believe that the county is not taking sufficient steps to direct growth, and a majority indicated that they would like to see much less population growth than in the previous few years (Montrose County 2001).

PRIVATE LAND USE WITHIN THE NATIONAL RECREATION AREA

All surface lands and waters within the NRA are currently owned by the federal government. However, in a number of locations throughout the NRA, there exist retained private rights (such as rights-of-way, water rights, access rights, and oil/ gas/mineral rights). Where Reclamation acquired land but not the appurtenant mineral, or oil or gas rights, it subordinated those reserved rights to require their development in a manner that would not interfere with project purposes. The subordination for reserved mineral rights, including oil and gas, is contained in the land purchase contract and/or deed for each parcel acquired.

The term "split estate" describes the situation where one party owns the surface rights and another party owns the subsurface rights (oil, gas, or minerals). Privately owned, or reserved, subsurface interests within the NRA are shown in Table 10.

At this time, only the Dickerson Pit (Pit) is under operation. The Pit is a privately operated mineral materials site within the NRA that has been in existence since 1927. In 1963, Reclamation purchased the surface rights for 79.57 acres from Mrs. Ruth Dickerson for the Colorado River Storage Project. Mrs. Dickerson reserved "the perpetual right to mine and remove decomposed granite and the materials intermixed therewith" from a portion of the conveyance, creating a 33.16 acre split mineral estate, together with the right of ingress and egress over the mineral estate. However, this mineral right is subordinated to the United States' rights, in that, ". . . any rights reserved hereunder shall be exercised in such manner as will not interfere with the construction, operation, and maintenance of any works of the proposed Curecanti Unit of the Colorado River Storage Project Act as determined by the Secretary of the Interior or his duly authorized representative." The Pit is located immediately west of US 50, the primary access road through the NRA, east of Blue Mesa Reservoir along the Gunnison River. In 1965, NPS assumed jurisdiction

over the area, including the Pit, pursuant to a Memorandum of Agreement with Reclamation. The Pit operations have been regulated since the 1980s under NPS special use permits. On February 17, 2003, the current operator, Gunnison Gravel and Earthmoving, submitted a proposed Plan of Operations to expand the Pit from the existing permitted operation (12.4 acres) to the maximum 33.16 acres. The NRA has completed an environmental assessment of the proposal and in 2006 issued a special use permit allowing the expansion, subject to the exclusion of a portion of the area that contains significant cultural resources.

NEIGHBORING PRIVATE LANDS AND LANDOWNERS WITHIN THE PROPOSED LANDS

Land Ownership

Private property within Land Units A (CO 92 COA), C (Gunnison River COA), D (Iola Basin COA), E (Sapinero/Blue Mesa COA), and G (West-End COA) have been included within the proposed lands because of the regionally or nationally important, or potentially important natural, cultural, recreational, or scenic resources that occur on these properties. There are a total of 125 different private ownerships within the COA. They consist of individuals, joint ownerships, partnerships, and corporations. Some entities own more than one property within the COA. Many landowners live within Montrose and Gunnison Counties or in other Colorado locations. Some owners live in nearby states such as Texas, New Mexico, and Arizona; or in more distant states, such as North Carolina and Alabama. Some properties have been held by the same family (including descendants) for decades, while other properties may have had a recent conveyance to new owners.

In 2005, there were 168 individual parcels of private land throughout the COA, ranging in size from 0.25 acre to 3,258 acres. The average number of acres per parcel varies according to general location and land use (Gunnison County and Montrose County GIS departments).

- Within Land Unit A (CO 92 COA), parcels on the north side of Morrow Point Reservoir in the vicinity of Black Mesa and Curecanti Creek average approximately 150 acres, although 40% of the parcels are almost 200 acres or more. In the Soap Creek area, 50% of the parcels are 5 acres or less, but one large parcel is over 2,000 acres in size. Parcels south of Morrow Point Reservoir on Fitzpatrick Mesa also average between 150 and 200 acres.
- Land units C (Gunnison River COA) and D (Iola Basin COA) along the Gunnison River and near Southeast Iola Basin include only a handful of private properties ranging in size from approximately 3 acres to 386 acres.
- Within Land Unit E (Sapinero/Blue Mesa COA) on Sapinero and Blue Mesas, 75% of the parcels are less than 10 acres in size, while 2 of the remaining 4 parcels are almost 500 acres. Parcels at Hunters Point and Windy Point average between 50 and 100 acres, respectively.
- Land unit G (West-End COA) consists of 18 parcels, 4 of which are north of the current NRA and 14 south. Ten parcels are under an acre. The largest parcel is about 60 acres.

Existing Land Uses

The predominant land uses on private property within the proposed lands consist of agriculture, primarily cattle and sheep grazing, and are limited to low residential use.

Land unit A (CO 92 COA) along CO 92 and north of Morrow Point Reservoir supports ranching activities, including cattle and commercial elk; and some limited extractive uses, such as timber removal. A few residential structures are found in the area. Residential development increases in the vicinity of Soap Creek Road, although it continues to be limited. Existing conservation easements

conserve a significant amount of acreage from being developed, and are held by the Rocky Mountain Elk Foundation and Colorado Open Lands. Still within Unit A, lands south of Morrow Point Reservoir support agriculture uses such as sheep grazing.

CO 92 currently weaves in and out of the NRA. As people drive along the highway, or stop and exit their vehicles along the highway, they are often confused whether they are on public land (i.e., the NRA) or private land. This is of special concern during the hunting season, where hunters may inadvertently hunt on private land. Another area that may suffer private trespass due to the current boundary situation is a location where access is gained to a popular climbing/ice climbing route. The landowner of one large ranch in this area has proposed exchanging land with the NRA, whereas CO 92 could, in essence, become the boundary line between the NRA and private land. The NRA parcels affected are shown on the Alternative 2 (Proposed Action) map as Tract 4, Tract 5, Tract 6, and Tract 7.

Land unit C (Gunnison River COA) along the Gunnison River supports cattle ranching and limited residential use. Land unit D (Iola Basin COA) has grazing activities, residential use, and commercial uses. Land unit E (Sapinero/ Blue Mesa COA) is comprised of low-density residential use, limited commercial use along US 50, and some grazing activity between Hunters and Windy Point. Private lands within Unit G (West-End COA) on the western end of the proposed lands include a few residences, but are generally vacant with regard to structures, and used for grazing.

Some private lands within the proposed lands are currently subdivided, for sale, or have a high probability of being developed in the near future. These private lands generally occur in the vicinity of major transportation corridors and in the vicinity of other development, such as along US 50 near Sapinero Mesa, Hunters Point, Windy Point, and Cimarron. Private lands along CO 92 and in the vicinity of Willow Creek face a moderate probability of being developed in the near future because of their accessibility (Roberts 2004).

Development on private land adjacent to the NRA, but not within the COA

Development on private lands adjacent to the NRA has increased in recent years and is expected to continue into the future. Insensitive and/or unchecked development, including development of mineral/mining rights that might exist, especially on lands within the COA, could have an adverse impact on the spectacular natural scene, which makes the NRA such a significant resource in which to recreate, sightsee, and take pictures. In turn, it could have an adverse impact on the quality of life for local residents and on the overall quality of the visitor experience.

Property Values

As stated in the Alternatives chapter, one of the tools for resource conservation being considered in the Proposed Action is to acquire interests in land from willing landowners. As described in the Estimated Costs section of that chapter, the future

direct costs of acquiring such interests are very uncertain. Therefore, for the purposes of developing the estimated cost of implementing the Proposed Action, the following current ranges of market values were used as guidance. They are based on records of land sales occurring over recent years on vacant and/or agricultural land within what is proposed as the COA.

Range of Market Values:

- Within Gunnison County — $1,500 to $4,000 per acre
- Within Montrose County — $500 to $1,500 per acre.

In general, assessed land values in Gunnison County grew from $373 million in 2002 to almost $390 million in 2003, a 4.5 % growth in assessed values. Montrose assessed land values grew by 2.5% from $301 million to $305 million. Gunnison County and other mountain communities reported some of the largest increases in assessed value in recent years, a trend that is expected to continue, although to a lesser degree (State of Colorado 2002).

National Park Service, Reclamation, and Other Neighboring Agency Management and Operations

A number of federal, state, and local agencies have lands and/or facilities located within the existing NRA and/or the proposed lands for the RPS Proposed Action, including NPS, Reclamation, BLM, USFS, Colorado Division of Wildlife, and Western Area Power Administration (Western). Each agency has individual interests regarding the potential expansion of Curecanti NRA. A primary and shared concern amongst the agencies is that the mission, land management, and operational responsibilities of each agency within the proposed lands are evaluated to ensure that all responsibilities are considered in developing the RPS recommendations.

This section identifies agency lands within the proposed lands more specifically those areas considered for inclusion within the NRA for the Proposed Action. It also generally describes each agency's management responsibilities for those areas.

NATIONAL PARK SERVICE

NPS manages the natural and cultural resources, public recreation, and associated facilities at Curecanti NRA and Black Canyon of the Gunnison National Park as one operating unit with two districts. The Blue Mesa District includes the area from Riverway west to Morrow Point Dam, and the Black Canyon District from Morrow Point Dam (including the Cimarron Visitor Center) west to and including the national park.

A Superintendent has overall authority and utilizes five divisions for operating the two areas: (1) Resource Stewardship and Science; (2) Interpretation, Education, and Technology; (3) Visitor Protection and Fee Collection; (4) Facility Management; and (5) Administration and Concession Management. The staff consists of approximately 32 permanent positions, 5 term positions, and 44 seasonal positions. This work force is supplemented by over 5,000 hours per year of Volunteers-in-Parks service.

Staff expertise is provided by a number of specialized positions, including an outdoor education specialist, an information technology specialist and computer assistant, an ecologist, hydrologist, aquatic biologist, terrestrial biologist, archeologist, interpretive specialists, law enforcement specialists, climbing/backcountry ranger, GIS specialist, fee collection personnel, and specialized maintenance and administrative positions.

Enforcement Operations

Law enforcement staff provide visitor and resource protection, road and boat patrols, search and rescue services, fire protection, and a variety of other services. However, during parts of the year the NRA lacks sufficient permanent staff coverage to meet some visitor

needs. Additional seasonal staff is added to provide coverage during the primary visitor season, particularly from mid-May through Labor Day. Occasionally, Colorado Division of Wildlife Officers provide patrols to monitor fishing and hunting activities.

Infrastructure and Maintenance Operations

The NRA infrastructure includes 3 visitor centers, 10 campgrounds, 7 self-guiding trails, 12 miles of hiking trails, 22 miles of roadways, 1 central maintenance facility (which also serves as the central maintenance facility for Black Canyon of the Gunnison National Park), the main NRA headquarters (which also serves as headquarters for Black Canyon of the Gunnison NP), and 22 employee housing units for on-site protection and management of NRA resources. Primary facilities are shown on the Existing Conditions map.

There are 12 permanent and 19 seasonal maintenance workers. This recurring staff is often supplemented and supported using special project funds, contracts, and the assistance or expertise from other NPS areas, and other organizations, as available.

Grazing

When the NRA was originally created, some BLM grazing allotments, or portions thereof, were included within it. NPS and BLM addressed the issue through creating Memorandums of Understanding that allow BLM to continue management of grazing in these areas in cooperation with NPS.

Grazing also occurs on USFS land being managed by NPS under an agreement with the Forest Service. The areas where this occurs include the Bear-Trap Long Gulch allotment (with 10 permittees) and the Soap Creek allotment (currently vacant).

Land Unit F: Gateview Agency Lands

NPS facilities in Land Unit F (Gateview Agency; and identified as Tract 10 on the Alternative 2 Proposed Action map) along the Lake Fork arm are adjacent to extensive BLM lands. Because of the distance for NPS to travel to maintain the facilities at Gateview, a full day is required to do fundamental maintenance of garbage pickup, check water systems, and clean facilities. Because of the more frequent presence of BLM staff in this area (south along the Lake Fork), the potential operating efficiencies of transferring Gateview Campground to BLM was considered during the course of the study.

NPS facilities in the Gateview area include roads, a small campground, restrooms, a photovoltaic chlorinated well system, bear-proof trash cans, and historic resources such as railroad-related features. All facilities are currently maintained by NPS.

Should NPS transfer its administrative jurisdiction for land and resources that it manages under agreement with Reclamation to another agency, a supplemental agreement between NPS and the receiving agency would need to be completed.

BUREAU OF RECLAMATION

The mission of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public. To accomplish that mission, Reclamation must have administrative jurisdiction of its lands, land interests, water and water interests, and facilities necessary to fulfill and protect the authorized purposes of its respective projects. According to Reclamation law, other uses may be allowed on Reclamation lands, so long as they are compatible or consistent with a project's purposes or the purpose for which Reclamation obtained lands or land interests.

Bureau of Reclamation Projects

Most of the lands within the current NRA, and some adjacent lands, were withdrawn or acquired for Reclamation purposes (refer to Existing Conditions map in Chapter 1). Reclamation currently operates and maintains two projects and uses its land,

land interests, water and water interests, and facilities to fulfill and protect the respective project purposes:

- Uncompahgre Project
- The Wayne N. Aspinall Unit (Aspinall Unit) of the Colorado River Storage Project.

A third nearby Reclamation project, the Fruitland Mesa Project, was authorized but never constructed. Reclamation has recommended to BLM that it revoke the withdrawals for the Fruitland Mesa Project.

Morrow Point Dam, one of three large dams managed by Bureau of Reclamation within the Aspinall Unit at Curecanti

Uncompahgre Project

The Uncompahgre Project (originally the Gunnison Project) was authorized by the Secretary of the Interior on March 14, 1903, under the provisions of the Reclamation Act of 1902 to provide agricultural irrigation water to about 76,300 acres in the Uncompahgre River Valley. The Act of June 22, 1938 authorized the Secretary of the Interior to enter into a contract for the sale or development of power on the Uncompahgre Project. Uncompahgre Project facilities within or adjacent to the NRA include, but are not necessarily limited to the:

- Gunnison River Diversion Dam;
- Gunnison Tunnel;
- River Portal Tunnel Road; and
- Residence, outbuildings and appurtenances of the Uncompahgre Valley Water Users.

The Uncompahgre Project is operated and maintained by the Uncompahgre Valley Water Users Association (UVWUA) under a contract with Reclamation. Withdrawn lands associated with the Uncompahgre Project in the vicinity of the East Portal of the Gunnison Tunnel were added to the current NRA in 1978 and are managed by NPS for recreation and other purposes in accordance with the 1965 MOA with Reclamation.

Aspinall Unit, CRSP

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, and its lands and land interests to meet project purposes. The presence of the three reservoirs has created water-based recreational opportunities.

Aspinall Unit related facilities within or adjacent to the NRA include, but are not necessarily limited to the:

- Blue Mesa, Morrow Point, and Crystal Dams and Reservoirs;
- Access roads to each of the three dams;
- Power plants and associated electric transmission facilities serving each dam;
- Communication facilities and associated access roads; and
- Electrical transmission lines and associated access roads (now operated/maintained by Western).

Bureau of Reclamation Lands

The Secretary of the Interior is authorized to acquire private lands and to withdraw public land from entry or other disposition under the public land laws necessary for the construction, operation, and maintenance of Reclamation projects. The Secretary is also authorized to dispose of recreation facilities and facilities that benefit fish and wildlife to

federal, state, and local government agencies by lease, transfer, exchange, or conveyance upon such terms and conditions as would best promote their development and operation in the public interest.

Reclamation withdrew lands from the public domain for Reclamation purposes, and acquired other lands and land interests for the above projects and purposes. Lands and land interests held by Reclamation within and adjacent to the NRA include about 39,958 acres of withdrawn lands, 11,465 acres of acquired lands, and 983 acres of land interests including various rights-of-way and easements. Reclamation withdrew and/or acquired some lands and interests for mitigation purposes for the Aspinall Unit, and transferred them to other federal, state, or local agencies for management.

Reclamation utilizes and manages its lands and land interests, and water and water interests for Reclamation project purposes. NPS manages recreation and certain other resources on Reclamation lands and land interests, and water and water interests within the NRA in accordance with the 1965 Memorandum of Agreement with Reclamation. BLM manages the lands withdrawn for the Fruitland Mesa Project.

Land Unit D: Iola Basin COA

The study team considered making recommendations for conserving private lands in the vicinity of Willow Creek on the south side of Iola Basin because the area contains important riparian habitat, is a popular location for parasailing and hang gliding activities, and requires adjustments to the administrative boundary. Acquisition of interests in this area would enhance conservation of habitat, simplify the management of recreational activities, and improve administrative efficiency.

BUREAU OF LAND MANAGEMENT

The proposed lands encompass lands managed by BLM. All BLM lands are managed according to actions outlined in specific resource management plans individually developed for each field office. Natural, cultural, and recreational resources are managed to accomplish a variety of multiple use objectives. These vary according to the attributes of the individual area.

The Gunnison Field Office is responsible for the management and stewardship of more than 600,000 acres of public land in the upper Gunnison River basin in southwest Colorado. BLM lands north and south of Blue Mesa and Morrow Point Reservoir within the proposed lands are managed by the Gunnison Field Office.

The Uncompahgre Field Office is responsible for the management and stewardship of more than 900,000 acres of public lands in southwestern Colorado. BLM lands from the southern point of Crystal Reservoir to the west within the proposed lands are managed by the Uncompahgre Field Office.

BLM lands adjacent to the NRA were evaluated during the study. These lands are located in Land Units B (Blue Mesa Reservoir Agency), F (Gateview Agency), and H (West-End Agency), and are described below. Land unit D (Iola Basin COA) is also discussed because of activities on adjacent BLM lands.

Livestock grazing occurs both within the proposed lands and within the current NRA. Some of the lands withdrawn by Reclamation for the Curecanti Project included BLM lands and their associated grazing allotments. Some allotments have all the federal portion of the allotment entirely within the NRA, while other allotments have some of the federal portion within the NRA and some on adjacent BLM land. However, in all cases, BLM manages these grazing allotments under an agreement with NPS.

Land Unit B: Blue Mesa Reservoir Agency Lands

BLM lands are scattered throughout this land unit and are managed by the Gunnison Field Office. The land unit stretches east from Soap Creek Arm to Neversink along the Gunnison River and includes one small piece of land that

is located on the southeast side of Iola Basin near Kezar Basin. All the BLM lands within this land unit, excluding the piece near Kezar Basin, are within the West Antelope Area of Critical Environmental Concern (ACEC) or the Dillon Pinnacle ACEC. An ACEC is an area managed by BLM that contains important historic, cultural, and scenic resources, fish or wildlife resources, or other natural systems or processes (BLM 1991).

The Dillon Pinnacle ACEC, adjacent to the NRA just east of the West Elk Arm, was created to protect the regionally significant vertical spires or pinnacles that are outstanding examples of eroded volcanic mudflows. The pinnacles are a predominant scenic feature from many locations within the NRA, particularly from US 50 along Blue Mesa Reservoir. BLM manages this area to protect both its scenic and geologic attributes. Recreational use also occurs in the area.

The West Antelope ACEC extends from Dillon Mesa east to West Antelope Creek near Gunnison (north side of study unit) and is managed to provide important wildlife habitat for wintering elk, deer, and bighorn sheep. Land uses are permitted that do not remove or damage elk and deer crucial winter range. Several state wildlife areas are located within the midst of the ACEC, further supporting the management of these winter range attributes. The ACEC also receives some dispersed recreation use in the vicinity of Dillon Gulch, but generally public access is difficult.

The Haystack Cave, located near the NRA, has yielded a significant number of fossils, particularly faunal specimens. The area is managed for public use, but is often vandalized, despite an existing gate (BLM 1991).

Grazing — Several grazing allotments include small percentages of NRA land within them. These include the Stevens Creek, Steuben Creek, and Beaver Creek allotments. These allotments are managed by the BLM Gunnison Field Office.

Land Unit D: Iola Basin COA

Hang gliders currently take flight from Big Mesa on BLM land in the southeast portion of Iola Basin and often times land on private or NPS property in the vicinity of Willow Creek near Iola Basin. Grazing occurs in the landing site on the private land. Although historically the landowner has allowed the hang gliders to land, more recently this activity is being denied, as the leaseholder of the grazing rights has not supported the hang gliding activity.

Grazing — One grazing allotment, Iola, includes a small percentage of NRA land within it. This allotment is managed by the BLM Gunnison Field Office.

Land Unit F: Gateview Agency Lands

A variety of recreational activities in this area are managed by BLM. Many recreationists raft the Lake Fork of the Gunnison River and take out of the river in the vicinity of Gateview Campground, a facility currently managed by NPS. Fishing occurs along the Lake Fork with some parking occurring within the campground. Historic features associated with the narrow gauge railroad are also in the area.

Grazing — Several grazing allotments include small percentages of NRA land within them. These include the Sapinero Mesa, Ten Mile Springs, and Big Willow allotments. These allotments are managed by the BLM Gunnison Field Office.

Land Unit H: West-End Agency Lands

BLM lands are scattered throughout this land unit, and are managed by both the Gunnison Field Office, and the Uncompahgre Field Office. Parcels within this land unit occur north and south of Crystal and Morrow Point Reservoirs, and west of Cimarron. A large area under BLM administration occurs on the western edge of Fitzpatrick Mesa, which is managed for wildlife habitat and grazing. Some severe winter elk range and mountain lion hunting also occur in this area.

Grazing — Several grazing allotments include more NRA lands then BLM lands — these

include the Pine Mesa, Windy Point, Blue Creek, Round Corral Spring, North Cimarron, and Spring Gulch allotments. The Round Corral Creek, Fitzpatrick Mesa, Highway, Rawhide/Coffee Pot, and Dead Horse allotments contain a smaller percentage of NRA lands within them. The BLM Gunnison Field Office manages the Pine Mesa, Windy Point, Blue Creek, Round Corral Spring, Round Corral Creek, Fitzpatrick Mesa, and North Cimarron allotments; while the BLM Uncompahgre Field Office manages the Dead Horse, Highway, Spring Gulch, and Rawhide/ Coffee Pot allotments.

COLORADO DEPARTMENT OF TRANSPORTATION / FEDERAL HIGHWAY ADMINISTRATION

The Colorado Department of Transportation (CDOT) holds easements and rights-of-way for the highways that pass through the existing NRA and Land Units A (Highway 92 COA), E (Sapinero/Blue Mesa COA), G (West-End COA), and H (West-End Agency). CDOT, in coordination with the Federal Highway Administration (FHWA), is responsible for maintenance, construction and safety activities, and traveler enhancements that occur on the routes they administer— US 50, CO 92, and CO 149. (CDOT 2005)

CDOT and NPS consult on an as needed basis whenever the activities of one agency have the potential to affect the operations of the other agency. Some highway maintenance activities have the potential to impact resources, and/or visitor access to NRA areas and facilities, and/ or the enjoyment thereof. When possible, NPS and CDOT identify such issues early on in project planning and work together to identify ways to reduce such impacts.

A portion of the facilities at the East Cimarron day-use area lies outside the NRA boundary within the CDOT right-of-way for US 50. These facilities provide rest and restroom opportunities for both NRA visitors and highway travelers.

The West Elk Loop Scenic and Historic Byway is a component of the state byway program administered under CDOT. The byway passes through the existing NRA and Land Units A (Highway 92 COA) and H (West End). NPS and the byway exchange information on activities and objectives via direct NPS representation on the byway's steering committee.

COLORADO DIVISION OF WILDLIFE

Big game hunting, a popular fall time activity within and surrounding the NRA

A number of state wildlife areas exist within the proposed lands in Land Unit B (Blue Mesa Reservoir Agency) that are managed to protect wildlife habitat and to provide public opportunities for hunting and fishing. Three areas located north of Blue Mesa Reservoir and surrounded by the West Antelope ACEC were evaluated in more detail for the RPS. They include the Gunnison State Wildlife Area (SWA), the Centennial SWA, and the Sapinero SWA. The Gunnison SWA is located 6 miles west of Gunnison on US 50 and runs north along Beaver Creek. The Centennial SWA is 6 miles further west and just north of US 50 (12 miles from Gunnison) and is comprised of approximately 1,800 acres. The Sapinero SWA is also accessed from US 50, just west of the Centennial SWA. It is a 1,728-acre parcel situated between West Elk Creek on the west and Dry Creek on the east and is intermingled with BLM lands (CDOW 2004a). NRA facilities operated under agreement between CDOW and NPS occur on CDOW land within Sapinero SWA, at Dry Gulch campground, and near the East Elk Creek group camp site.

Some of these CDOW lands are Reclamation wildlife mitigation lands for the Aspinall Unit, which were transferred to CDOW. They need to continue to be managed for wildlife purposes.

U.S. FOREST SERVICE

Lands in the Gunnison and Paonia Ranger Districts of the Gunnison National Forest occur within the proposed lands. The Gunnison National Forest is one of three national forests administered under the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG). The GMUG is managed under one Forest Supervisor. Each District is managed by a District Ranger and his/her staff.

At present, the GMUG is in the midst of a Forest Plan Revision that would be completed in the next several years. The forest lands within the proposed lands are part of the Gunnison Basin Geographic Area and North Fork Valley Geographic Area. Working groups (citizens and agency representatives) are assisting the Forest Service in identifying vision statements and management themes for how these lands should be managed. At present, there is a strong emphasis on protection of wildlife corridors and critical winter range in the area with provision for recreational opportunities (USFS 2004b). During the course of the RPS, several areas were considered for transfer between the Forest Service and NPS because of their proximity to Curecanti NRA, existing agreements, and additional discussions that have occurred between the agencies. These lands are located on the north side of the NRA in the vicinity of Soap Creek and along CO 92.

Land Unit B: Blue Mesa Reservoir Agency Lands – Land South of West Elk Wilderness

The Gunnison Ranger District of the Gunnison National Forest adjoins BLM and Reclamation lands to the north of Blue Mesa Reservoir. These combined lands surround the Soap Creek and West Elk Arms of Blue Mesa Reservoir and the northern portion of Soap Creek Road (also designated as Forest Road 721) that originates from CO 92 near Blue Mesa Dam.

The Soap Creek Campground is located within this unit on USFS lands approximately 7.25 miles north on Forest Road 721 and another 0.5 miles along Forest Road 824. The campground is comprised of 21 designated sites that include parking spurs, fire grates, vault toilets, and other camping amenities. The campground is currently maintained via a concession contract. Horse corrals located at the campground are busy during hunting season. Fifth-wheel campers often park in undesignated areas in the vicinity of the corrals, often times resulting in more camping use outside of the campground than within the designated sites. Overnight use occurs at the corrals, including one outfitter that uses the corrals as an overnight stop.

Ponderosa Campground is located within the NRA, just 1.75 miles south of Soap Creek Campground. NPS provides service and patrols to the Ponderosa Campground.

The vacant Soap Creek grazing allotment exists within this unit. Even when grazed, the number of cattle was minimal, but they often wandered into the campground.

Some snowmobiling use occurs on USFS and other public lands in the area. However, it is minimal and mainly occurs on existing roads.

Land Unit H: West-End Agency Lands – Long Gulch/Beartrap Area

Grazing — The Paonia District of the Gunnison National Forest lies north of CO 92 and Morrow Point and Crystal Reservoirs. The district manages a 30,000-acre grazing allotment in the Long Gulch/Beartrap area with only a small portion within the NRA. The allotment is used for early-season cattle by a grazing pool of 10 permittees. Cattle currently cross and graze on lands co-managed by NPS and USFS under an agreement. The parcel contains the Crystal Trail, which NPS maintains. The cattle use this area for a week or two early in the summer. However, little or no conflict with NRA visitors has resulted from this brief use.

WESTERN AREA POWER ADMINISTRATION

Western owns and operates a number of facilities, including transmission lines and

Table 11: Western Area Power Administration Facilities

Facility Type	Facility Name
Transmission Line	Curecanti-Rifle 230-kilovolt (kV)
Transmission Line	Curecanti-Crystal 115-kV
Transmission Line	Curecanti-Poncha 230-kV
Transmission Line	Curecanti-Morrow Point 230-kV
Transmission Line	Curecanti-Blue Mesa 115-kV
Transmission Line	Blue Mesa-Salida 115-kV
Communication Site	Dead Horse Mesa Passive Reflector
Communication Site	Crystal Microwave Site
Communication Site	Sheeps Knob Microwave Site
Communication Site	Black Mesa Passive Reflector
Communication Site	Hermits Point Passive Reflector
Communication Site	Morrow Point Microwave Site
Communication Site	Curecanti Microwave Site
Substation	Curecanti Substation
Substation and Communication Site	Blue Mesa Substation and Microwave Site

Source: Western 2004

communication sites. Western facilities are shown on the Existing Conditions map. Table 11 identifies the type of facility and provides the facility name. The transmission lines cross a variety of land units within the proposed lands.

As a power marketing administration within the U.S. Department of Energy, Western is tasked with the safe and reliable delivery of electric power generated by Reclamation power plants at Aspinall Unit dams. In order to accomplish this task, Western requires continuous and uninterrupted access to facilities in order to properly conduct operation and maintenance activities. Roads cannot be closed unless alternative access is provided. Facilities cannot be relocated to enhance recreational opportunities or improve scenic resources, unless all parties are in agreement and funding is authorized to implement the project.

In addition, Western maintains and operates the various communication sites needed to effectively operate the Aspinall Unit dams for Reclamation. Western is responsible for maintaining communication equipment. They must be able to access those communication sites at any given time to provide maintenance functions such as replacing batteries, adjusting reflectors, and upgrading or replacing radio equipment. Thus, the sites and access to them are not only important to Western, but are also critical to Reclamation's operation of the project (Western 2004).

Autumn colors abound along Colorado Highway 92 above Morrow Point Reservoir