Chapter 5 – Complexes: Area-Specific Management Recommendations

This section contains our detailed, area-specific proposal utilizing the theme based approach to land management. As an organizational tool, this proposal divides the Pike-San Isabel National Forest into eleven separate ***Complexes***, based on geo-physical characteristics of the land such as mountain ranges, parklands, or canyon systems. Each complex narrative provides details and justifications for our management recommendations for specific areas. In order to emphasize the larger landscape and connectivity of these lands with the ecoregion, commentary on relationships to adjacent non-Forest lands are also included.

Evaluations of ecological value across public and private lands are used throughout this chapter. The Colorado Natural Heritage Programs rates the biodiversity of Potential Conservation Areas (PCAs) as General Biodiversity, Moderate, High, Very High, and Outranking Significance. The Nature Conservancy assesses the conservation value of its Conservation Blueprint areas as Low, Moderately Low, Moderate, Moderately High and High. The Southern Rockies Ecosystem Project's Wildlands Network Vision recommends land use designations of Core Wilderness, Core Agency, Low and Moderate Compatible Use, and Wildlife Linkages. Detailed explanations are available from the respective organizations.

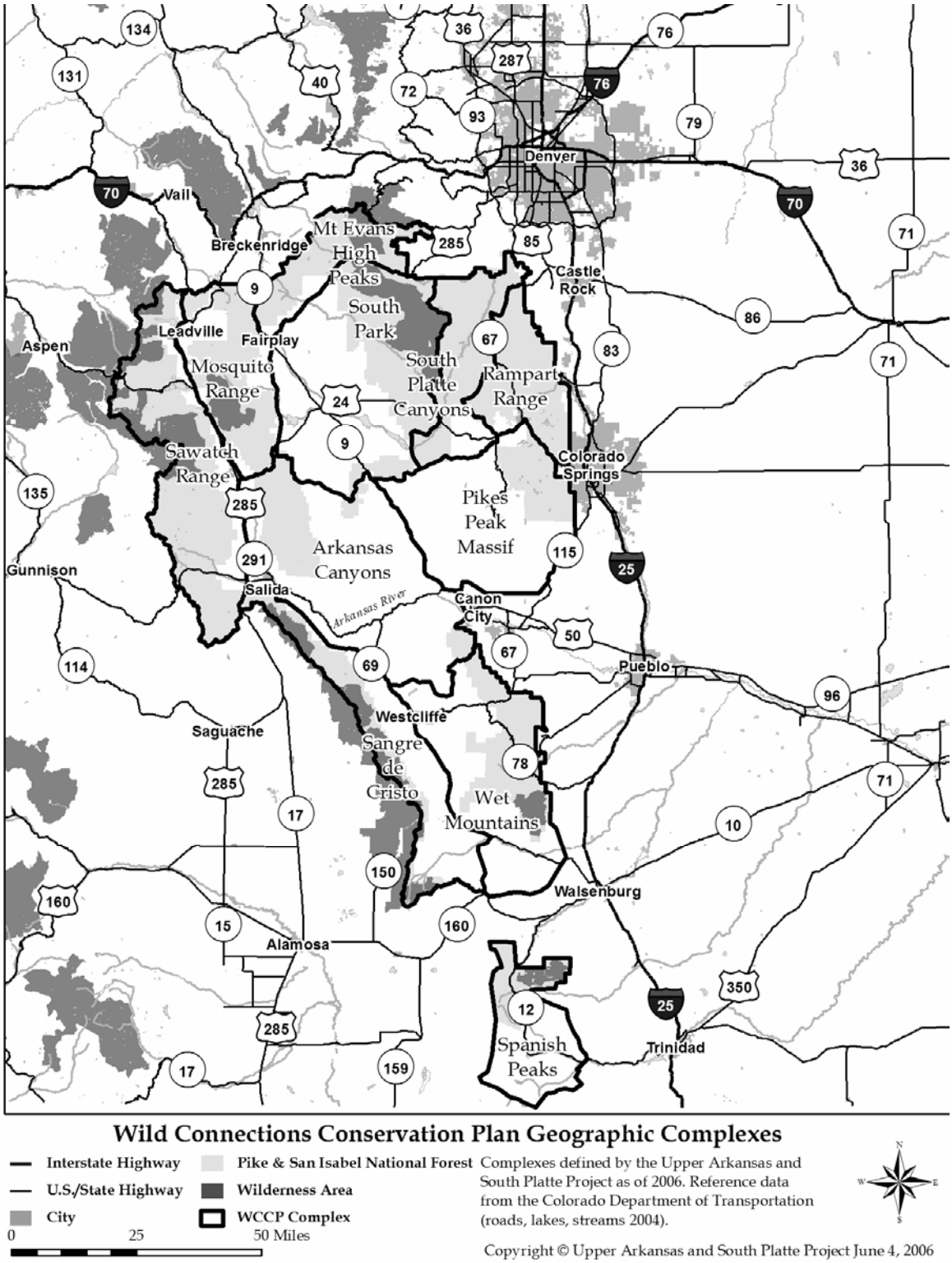
Complexes – Summary List by Watershed

Table 5.1: Summary of WCCP Complexes

Watershed	Complex	Ranger District
South Platte	Mount Evans High Peaks	South Platte & South Park
	South Park	South Platte & South Park
	South Platte Canyons	South Platte & South Park
South Platte and Arkansas	Mosquito Range	South Park, Leadville and Salida
	Pikes Peak Massif	Pikes Peak
	Rampart Range	South Platte & Pikes Peak
Arkansas	Sawatch	Leadville and Salida
	Arkansas Canyons	Salida, San Carlos & BLM Royal Gorge Resource Area
	Sangre de Cristo	Salida and San Carlos
	Wet Mountains	San Carlos
	Spanish Peaks	San Carlos

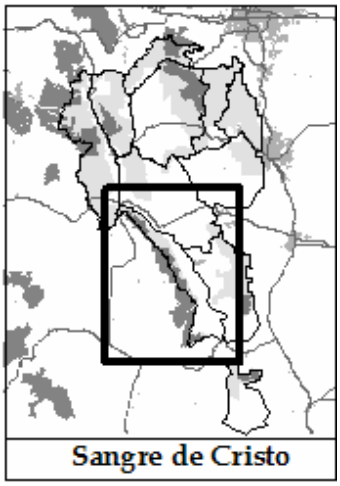
Complexes – Map Locater

Map 5.1: Wild Connections Complexes



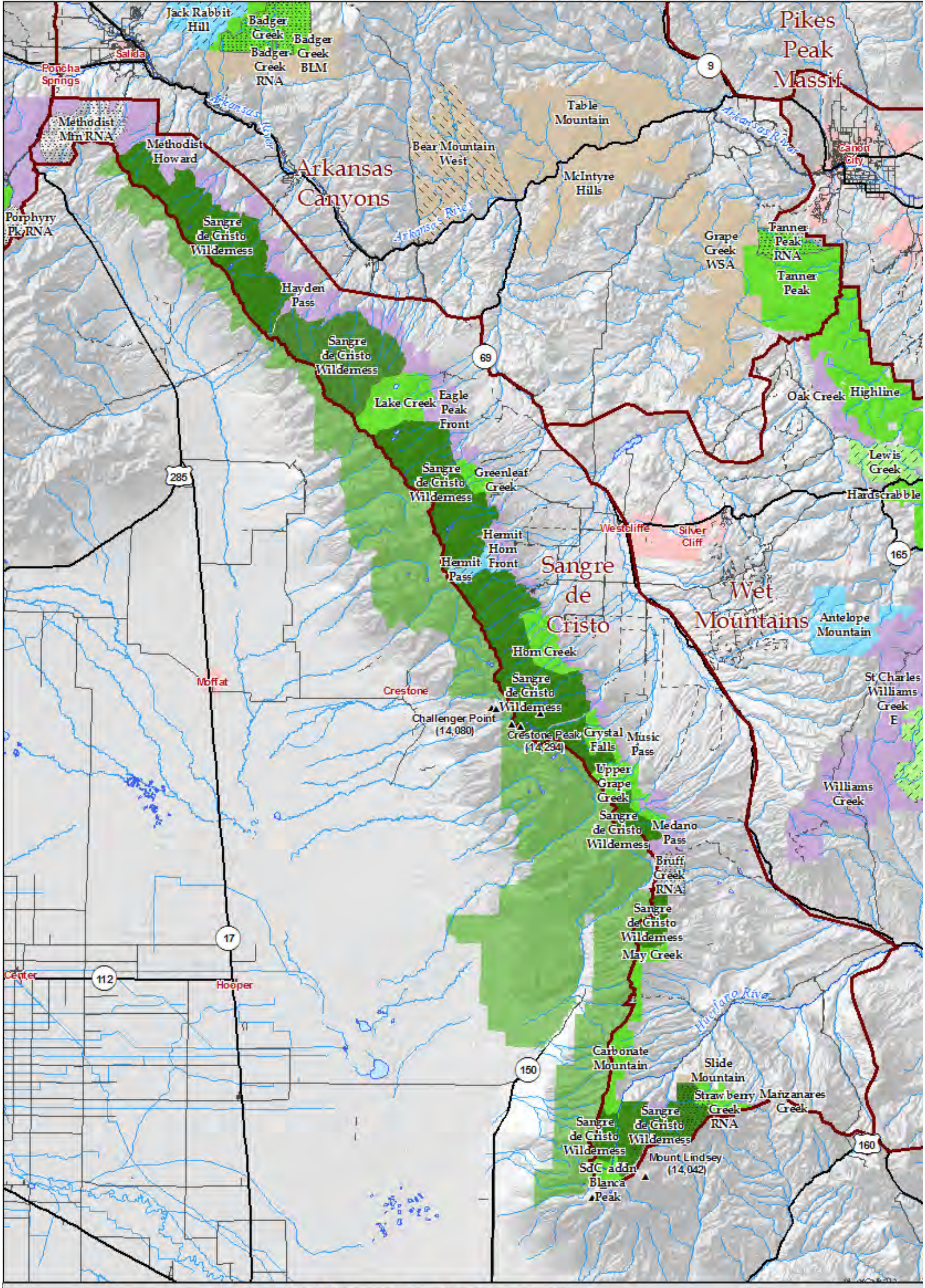
The Sangre de Cristo Complex

Blanca Peak roadless area



The Sangre de Cristo Complex extends some 70 miles along the eastern side of the Sangre de Cristo range from Poncha Pass to la Veta Pass and includes part of the Wet Mountain valley.

Eleven complexes centered on geographical features encompass sections of the Pike-San Isabel National Forest, adjacent BLM, state, and private lands. Fitting together like a mosaic, they cover the headwaters of the South Platte and Arkansas Rivers.



Wild Connections Conservation Plan

- Interstate Highway
- U.S./State Highway
- Paved Road
- Improved Unpaved
- Railroad
- WCCP Complex
- City
- Wilderness Outside Pike/San Isabel

WCCP Proposed Management

- 1.1 Existing Wilderness
- 1.2 Recommended Wilderness
- 1.3 Core Reserve
- 2.1 Research Natural Areas
- 2.2 Experimental Forests
- 3.1 Quiet Use Areas
- 3.2 Connectivity Areas
- 4.1 Motorized Recreation Areas
- 5.1 Active Mgmt - Wildlife Habitat
- 8.1 Ski Based Resorts
- 8.2 Permanently Developed Areas
- 9.1 Non-USFS Recomend Wilderness
- 9.2 Significant Non-USFS Biological

Wild Connections Conservation Plan as of May 2006. Reference data from the US Geological Survey (mountains, 1981) US Forest Service (forest routes, 2002) and the Colorado Department of Transportation (roads, lakes, streams 2004).

0 5 10 Miles

Map 5.7: Sangre de Cristo Complex Proposed Management

Note: This map is located in the pocket at back of the document for usability.

Description

Overview

The Sangre de Cristo range is a steep, block-faulted mountain range extending from central Colorado to northern New Mexico. The portion identified as the Wild Connections Sangre de Cristo complex extends some 70 miles along the eastern side of the range from Poncha Pass to la Veta Pass. It is bounded on the east by the Arkansas River Valley and central Wet Mountain Valley. This portion of the Sangre de Cristo is very narrow, less than ten miles wide in most places, causing a number of habitat zones to be compressed into relatively small cross-sectional bands.

The higher portions of the range are largely protected the 186,400-acre Sangre de Cristo Wilderness, which extends also onto the west side of the range in Rio Grande National Forest. The lower forested lands east of the Wilderness and the open grasslands of the Wet Mountain Valley are largely in private ownership. A relatively small band of non-Wilderness National Forest land, seldom more than three miles wide, lies between. The Sangre de Cristo range is crossed by two roads, the Hayden Pass Road and the Medano Pass Road, both suitable only for 4WD vehicles. In addition, three other roads - the Methodist Mountain road, Hermit Pass road, and the Mosca Pass road - are vehicle-accessible from the east all the way to the summit of the range. A motorized trail, the Rainbow Trail, extends from Poncha Pass to the road network in the vicinity of Medano Pass. Most spur trails leading up into the range are non-motorized above the Rainbow Trail.

A description of the landscape, vegetation, wildlife, and ecological values, including detailed descriptions of roadless areas, is followed by the recommendations for the complex organized according to the management themes. A discussion of connectivity within the complex and to adjacent complexes is found at the end.

The landscape and wildlife

The mountainous portion of the Sangre de Cristo complex is broken up into approximately forty valleys and intervening ridges. Most valleys are roadless, but many contain nonmotorized trails. Overall elevations range from over 14,000 feet in Crestones and Blanca Peak massif to 7,000 feet along Muddy Creek in the Wet Mountain Valley.

The northern portion of the Sangre de Cristo complex is located in the Arkansas River drainage. A number of streams from Oak Creek northward feed directly into the Arkansas River; southward, the streams feed into Texas Creek and Grape Creek, the two streams draining the Wet Mountain Valley. The portion of the complex south of the Custer/Huerfano County line comprises the headwaters of the Huerfano River and its northerly tributary, Muddy Creek.

Vegetation in the area ranges from alpine tundra to piñon-juniper forest. The forested belt consists mostly of ponderosa pine/Douglas-fir mix in the lower elevations, and Engelmann spruce/subalpine fir at the higher elevations, with occasional patches of lodgepole and bristlecone/limber pine. The area contains large stands of aspen and large montane meadow areas on drier, south-facing slopes. Portions of the Wet Mountain Valley down slope of the National Forest boundary are largely devoted to livestock grazing, with large acreages irrigated for production of hay crops.

There is suitable habitat in the larger complex for animal species including elk, bighorn sheep, mountain lion, and lynx, with pronghorn out in the valley. Mule deer and elk winter range extends into the area along the Arkansas River and in the Huerfano/Muddy Creek headwaters area, generally down slope of the existing designated Wilderness. The upper headwaters of the Huerfano and Muddy Creek, centered upon the Bruff Creek area, are important elk production areas. An elk production area and migration corridor lies down slope of the Lake Creek area. Bighorn winter range lies upslope of Horn Creek, Crystal Falls, Upper Grape Creek, and northeast of Slide Mountain, while the area upslope of Bruff Creek is both winter range and a bighorn production area. Virtually the entire eastern slope of the range is potential lynx habitat, with particularly large, contiguous areas of suitable habitat centered on Bruff Creek and Slide Mountain. A medium priority linkage for mountain lion and lynx extends from Bruff Creek roadless area northeast along the Custer/Huerfano County line toward the Wet Mountain complex.

Current and historical rare and sensitive species include greenback cutthroat trout (*Oncorhynchus clarki stomias*), wolverine (last verified sighting in 1978), and several plant species and plant communities, which are noted in their respective roadless area descriptions.

Southern Rockies Ecosystem Project's modeling shows a swath of secondary wolf habitat from Poncha Pass along the Sangres and Culebra Range into northern New Mexico, as well as a black bear linkage in the same locations that connects large bear cores in the west to those south of the Spanish Peaks and into New Mexico. The lynx linkage from Monarch Pass to Poncha Pass was identified by both the Forest Service and SREP as of highest priority.

The mountain parts of the larger complex are popular for recreation. Mountain climbing is among the best in Colorado, with a number of Fourteeners and other high peaks. Except for the restriction of non-mechanical travel in the Wilderness area and proposed additions, most types of recreation are allowed across the whole complex. In addition to human powered travel, there are many opportunities for motorized use on the five 4WD roads, which either cross the range or access the mountain crest from the east, as well as along the motorized Rainbow Trail, approximately 100 miles in length, and its connectors. The Sangre de Cristo complex contains a number of high-use campground areas, which are too small to map, but which include the Hayden Creek Campground at the foot of the Hayden Pass Road, the Lake Creek Campground west of Hillside, and the Alvarado Campground south of Westcliffe. These campgrounds provide access to both the Sangre de Cristo Wilderness and the motorized Rainbow Trail.

Ecological values of the complex

The Sangre de Cristo complex includes a number of rich and unique biological areas
There are three proposed Research natural Areas (RNAs), and the Colorado Natural Heritage Program lists seven Potential Conservation Areas (PCAs), including Comanche/Venable that is of very high conservation significance. The Nature Conservancy's Southern Rocky Mountains Conservation blueprint (TNC blueprint) includes much of the complex in its moderately low and moderate priorities, with moderately high areas across Carbonate Mountain, Crystal Falls, Greenleaf Creek, Horn Creek, Lake Creek, May Creek, Slide Mountain and Upper Grape Creek.

Wilderness and Roadless Areas

The large proportion of roadless lands in the complex that are adjacent to the Sangre de Cristo Wilderness results in a good distribution of high quality ecological characteristics. See Table 5.12. The areas are described from north to south below.

Table 5.12: Sangre de Cristo Roadless Areas

Name	Acres (UASPP)	Roadless Under Roadless Rule
Blanca Peak	1,500	Yes*
Bruff Creek	2,700	Yes
Carbonate Mountain	3,600	Yes
Crystal Falls	2,500	Yes
Greenleaf Creek	1,600	Yes
Horn Creek	3,800	Yes
Lake Creek	6,800	Yes
May Creek	1,800	Yes
Methodist Mountain	3,600	Yes
Sangre de Cristo Wilderness	186,400	n/a**
Slide Mountain	3,100	Yes†
Upper Grape Creek	3,100	Yes*

**Roadless rule area has significantly fewer areas than UASPP inventory.*
***Includes lands in an adjacent National Forest.*
†Roadless area includes lands managed by the US Forest Service and lands managed by the Bureau of Land Management.

Wilderness Areas

Sangre de Cristo Wilderness

The 186,400-acre Sangre de Cristo Wilderness, the third-largest Wilderness in Colorado, dominates the mountain part of the Sangre de Cristo Complex. About half of the Wilderness is located on the west slope of the Sangre de Cristo range in the Rio Grande National Forest, with approximately 95,500 acres within San Isabel National Forest. Elevations within the Wilderness range from approximately 8,000 feet to 14,294 feet. This Wilderness, like most in Colorado, is predominantly a high elevation wilderness, containing primarily alpine tundra and spruce-fir forests. However, it also contains significant aspen, mixed conifer, Douglas-fir, and ponderosa pine forests. Most valleys contain relatively undisturbed wetlands and riparian corridors. There is a significant human presence on many trails within the Wilderness and along the Rainbow Trail Corridor, which runs along the edge of the Wilderness beyond its lower boundary from its northern end nearly to the Custer/Huerfano County line.

A number of notable rare species are found in the Wilderness, including greenback cutthroat trout (*Oncorhynchus clarki stomias*) in Cottonwood Creek, Cascade Creek and possibly Prong Creek (Han, Cindy Hsu. "The CSI: Mapping Mission Success." Trout. Spring 2006.p. 30), and historical records of wolverine (*Gulo gulo*). Rare plants include pale blue-eyed grass (*Sisirinchium paldium*), canyon bog-orchid (*Limnorchis ensifolia*), autumn willow (*Salix serissima*), altai chickweed (*Stellaria irrigua*), arctic draba (*Draba fladnizensis*), and Smith whitlow grass (*Draba smithii*). Two rare montane woodlands plant communities, bristlecone pine/alpine clover (*Pinus aristata/Trifolium dasyphyllum*) and bristlecone pine/Thurber fescue (*Pinus aristata/Fustuca thurberi*) are found here.

The Nature Conservancy's Conservation Portfolio has a very large unit of moderately high conservation value which spans the Sangre de Cristo Mountains, and includes virtually the entire Wilderness. A PCA of very high significance is located at Comanche/Venable Lakes.

Unprotected roadless areas

The Sangre de Cristo complex also contains eleven smaller roadless areas not currently within the designated Wilderness. All of these were inventoried as roadless under the Forest Service's Roadless Area Conservation Rule. However, UASPP inventories determined that Blanca Peak and Upper Grape Creek were significantly larger than the Roadless Area Conservation Rule boundaries indicated. Of these roadless areas, three include areas that have been recommended for Research Natural Areas.

Methodist Mountain

The Methodist Mountain roadless area, 3,600 acres, is the complex's northernmost roadless area, lying at the extreme northern end of the Sangre de Cristo Wilderness north and west of the summit of Methodist Mountain and east of Poncha Pass. On the east, the area is bounded by an unpaved road accessing the summit of Methodist Mountain, but except for this road corridor it is essentially contiguous with the existing Sangre de Cristo Wilderness

The Methodist Mountain roadless area is predominantly Engelmann spruce/subalpine fir forest and Douglas-fir, with some aspen lodgepole pine and bristlecone/limber pine areas.

The area includes summer and winter range for both mule deer and elk. There are winter elk concentrations and an elk calving area on the north side, and an elk migration corridor passes just to the south of the area. Mountain lion and black bear can be found in appropriate habitats. In addition to lynx denning and winter habitat for lynx it is part of the larger Monarch Pass to Poncha Pass high priority linkage identified by both the Forest Service and The Southern Rockies Ecosystem Project. This linkage provides a key migration corridor for lynx and other wildlife, connecting large areas of suitable habitat along the east slope of the Sangre de Cristo with even larger areas in the Sawatch/Cochetopa Hills nexus west of Poncha Pass.

Methodist Mountain is shown in SREP's vision as a low use area. The roadless area comprises about half of the larger, proposed 7,700-acre Methodist Mountain RNA. The Rainbow Trail passes through the proposed RNA and forms the northern boundary of the roadless area. Some non-system motorized use is occurring south of the Rainbow Trail.

Lake Creek

The Lake Creek roadless area is 6,800 acres on the east side of the Sangre de Cristo range at the northern end of the Wet Mountain Valley approximately four miles west of Hillside, and directly adjacent on the north, west, and south to the Sangre de Cristo Wilderness.

The Lake Creek roadless area is predominantly alpine tundra, barren ground, and Engelmann spruce/subalpine fir forest, with Douglas-fir and lodgepole pine in the lower elevations on the east side. Rare plants found in the area include dwarf hawksbeard (*Askellia nana*) and grassyslope sedge (*Carex oreocharis*).

On the eastern edge of the area there is high summer bear activity, and mountain lions can be found in suitable habitat. Elk and mule deer use summer range across the area, with summer concentrations of elk on the east side and sizeable calving area immediately to the north along the National Forest front. An elk migration corridor extends from the Lake Creek area into the Wet Mountain Valley. There is very little lynx habitat in Lake Creek area itself, but it adjoins a large area of suitable habitat within the designated Wilderness to the north.

The South Lake Creek drainage is without trails and leads to a rocky, seldom-visited valley below Eagle Peak, perhaps the least human-impacted of the drainages excluded from the 1993 Wilderness designation. The North Lake Creek drainage contains a large cherrystem road corridor extending to past Balman Reservoir, an area heavily used by anglers and campers, to Rainbow Lake and a number of smaller glacial lakes, and then on up the valley to the Cloverdale Mine.

The Nature Conservancy's Conservation Portfolio has a very large unit of moderately high conservation value which spans the Sangre de Cristo Mountains, and overlaps all but the eastern

side of Lake Creek. The roadless area is shown in SREP's vision as core wilderness.

Greenleaf Creek

The Greenleaf Creek roadless area of 1,600 acres lies between the existing Sangre de Cristo Wilderness and the Rainbow Trail east of Gibbs Peak, less than ten miles northwest of Westcliffe. It is a lower-elevation area than the directly adjacent Sangre de Cristo Wilderness, and is predominantly Douglas-fir, with areas of ponderosa pine forest, along with some aspen and Engelmann spruce-subalpine fir. Lack of direct public access across private land to the east of the National Forest boundary makes this a relatively unvisited area compared with others on the east side of the Sangre de Cristo.

On the eastern edge of the Greenleaf Creek roadless area there is high summer bear activity, and mountain lions can be found in suitable habitat, as well as elk and mule deer in the summertime. Lynx general, denning, and winter habitat occurs here.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit overlaps all but the southeastern side of Greenleaf Creek. The roadless area is shown in SREP's vision as core wilderness

Horn Creek

The Horn Creek roadless area comprises 3,800 acres in the lower portions of Dry, Horn, and Macey Creeks and represents a swathe of lower-elevation National Forest which was not included in the directly adjacent Sangre de Cristo Wilderness in 1993. The area is very popular for day hiking, horseback riding, camping, and fishing, particularly in the Dry Creek Lakes, Horn Lakes, and Macey Creek drainages, and the Horn Creek trailhead is a major access point for people climbing Fourteeners in the Crestone area to the south.

The Horn Creek roadless area is predominantly aspen forest and Engelmann spruce/subalpine fir forest, with some lodgepole pine and bristle/limber pine areas. Mule deer and elk use summer range across the area. On the eastern edge of the area there is high summer bear activity, and mountain lions are found in suitable habitat. Lynx denning and winter habitat is somewhat scattered across the area.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit encompasses all of Horn Creek. The roadless area is shown in SREP's vision as core wilderness

Crystal Falls

The 2,500-acre Crystal Falls roadless area, located approximately ten miles south of Westcliffe, is directly adjacent to the existing Sangre de Cristo Wilderness, but was not included within it when it was designated in 1993. It includes the Marble Mountain trail and the trail-less Crystal Falls Creek, and continues south to the Music Pass road.

The Crystal Falls roadless area is predominantly Douglas-fir with areas of Engelmann spruce/subalpine fir and aspen forest, and is particularly noteworthy for its wildlife values.

On the eastern edge of the area there is high summer bear activity, and mountain lions are found in suitable habitat. Mule deer and elk use summer range across the area, with elk winter range and a small calving are just to the east. Lynx denning and winter habitat is found across the area. There is a historical record of wolverine (*Gulo gulo*) in the Crystal Falls-Upper Grape Creek

vicinity. Rare plants include Smith's whitlow-grass (*Draba smithii*).

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit covers all of Crystal Falls. The roadless area is shown in SREP's vision as core wilderness.

Upper Grape Creek

The Upper Grape Creek roadless area, some 3,100 acres, is approximately 15 miles south of Westcliffe. The area, which is directly adjacent to the Sangre de Cristo Wilderness, lies south of the Music Pass Road, a road presently open to 4WD travel to the top of the pass. Because the road turns northward to follow the ridgeline north of the creek, the road does not significantly impact the Grape Creek riparian area. The area includes gentler sloped, lower elevation forest between the existing Sangre de Cristo Wilderness boundary and the Rainbow Trail southward as far as North Muddy Creek in Huerfano County.

The Upper Grape Creek roadless area is predominantly Engelmann spruce/subalpine fir forest, with some smaller areas of Douglas-fir and aspen. Rare plants include Smith's whitlow-grass (*Draba smithii*).

On the eastern edge of the area there is high summer bear activity, and mountain lions can be found in suitable habitat. Mule deer and elk use summer range across the area, with elk winter range on the extreme northeast. Lynx denning and winter habitat is found across the area, and a priority linkage identified by the Forest Service connects this general area across the Wet Mountain Valley to the Wet Mountain range. Mule deer and elk use summer range across the area. There is a historical record of wolverine (*Gulo gulo*) in the Crystal Falls-Upper Grape Creek vicinity.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit encompasses all of Upper Grape Creek. The roadless area is shown in SREP's vision as core wilderness

Bruff Creek

The Bruff Creek roadless area of 2,700 acres lies at moderate elevation north of the Medano Pass 4WD road on the east side of the Sangre de Cristos, drained by North, Middle, and South Bruff Creeks. It includes virtually all of the proposed Bruff Creek RNA. The area contains a broad mix of vegetation types, including areas of aspen forest, Engelmann spruce/subalpine fir forest, and mixed conifer/Ponderosa pine forest, including some stands of old-growth forest, as well as significant wetlands and riparian areas, and even some piñon-juniper stands, resulting in a high diversity of plant communities and animal habitats. There are several rare plant communities found in the area, including montane aspen/tall forb (*Populus tremuloides/tall forbs*) and aspen/Drummond's willow (*P. tremuloides/Salix drummondiana*) *forests* and thinleaf alder/mesic forb (*Alnus incana/mesic forb*) *riparian shrublands.*

There is high summer bear activity across the Bruff Creek roadless area, and mountain lions are found in suitable habitat. Elk and mule deer use summer range across the area, with some winter range for both on the east side and out into the foothills. The upper headwaters of the Huerfano and Muddy Creek, centered upon the Bruff Creek area, are large and important elk production areas. The Bruff Creek area adjoins a very high priority pronghorn migration route to the east. Lynx denning and winter habitat is very scattered, but a priority linkage identified by the Forest Service connects this general area across the Wet Mountain Valley to the Wet Mountain range.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit encompasses all of Bruff Creek. The roadless area is shown in SREP's vision as an agency core area.

May Creek

The May Creek roadless area is 1,800 acres in a long, narrow strip of relatively low-elevation roadless land that lies north of the Mosca Pass Road, which is open up the east side of the range to the top of the pass. The roadless area was not included in the directly adjacent Sangre de Cristo Wilderness when it was designated in 1993. The area is accessible to hikers not only from the Mosca Pass Road, but also from Great Sand Dunes National Park on the other side of the ridge by means of the Mosca Pass Trail.

The May Creek roadless area is predominantly aspen forest, with some Douglas-fir, ponderosa pine and Engelmann spruce-subalpine fir, merging with foothills and montane grassland along its eastern boundary, thereby representing lower elevation plant communities.

On the eastern edge of the area there is high summer bear activity, and mountain lions are found in suitable habitat. There is a large area of winter range for pronghorn just to the east of May Creek. Elk and deer use summer range across the area, with some winter range for both on the east side. There are elk calving areas on the north side. Lynx denning and winter habitat is found across the area. Because of the relatively low elevation of the Sangre de Cristo crest in this area, it forms the lower portion of a natural migration corridor over the range and into the Great Sand Dunes National Preserve, on the west side of the range, and on into the San Luis Valley.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit covers all of May Creek. The roadless area is shown in SREP's vision as core wilderness.

Carbonate Mountain

The Carbonate Mountain roadless area is another relatively narrow, roadless area of 3,600 acres lying south of the Mosca Pass. The area is predominantly aspen forest, with some Engelmann spruce-subalpine fir on the west side, but merging with foothill and mountain grassland along its eastern boundary, representing lower-elevation land that was not included in the directly adjacent Sangre de Cristo Wilderness in 1993. There is particular value to wildlife moving along the range or traveling up or down slope. The National Forest boundary closely approximates the transition between forest and foothills grassland.

The Carbonate Mountain roadless area is accessible to hikers not only from the Mosca Pass Road, but also from Great Sand Dunes National Park and Preserve on the other side of the ridge by means of the Mosca Pass Trail.

On the eastern edge of the area there is high summer bear activity, and mountain lions can be found in suitable habitat. Bighorn sheep use summer range across the area, and there is winter range and winter concentration to the east in the Huerfano Valley. Elk and deer use summer range across the Carbonate Mountain area, with some winter range for both on the east side and out into the valley. The whole area is part of a very large elk production area which extends eastward into the Huerfano valley. Lynx denning and winter habitat is found across the area.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit encompasses all of Carbonate Mountain. The area is shown in SREP's

vision as core wilderness

Slide Mountain

The Slide Mountain roadless area lies at the headwaters of the Huerfano River east of the Blanca Peak massif, and was part of the original Blanca Peak Roadless Area Conservation Rule Inventoried Roadless Area, but was not included in the directly adjacent Sangre de Cristo Wilderness when it was designated in 1993. Public access is possible only through the Wilderness area to the west, and, as a result, the area receives less recreational visitation than the designated Wilderness. Its 3,100 roadless acres include 2,300 acres of National Forest land and an additional 800 roadless acres managed by the Bureau of Land Management.

The Slide Mountain roadless area is predominantly Engelmann spruce/subalpine fir forest, interspersed with substantial areas of subalpine and montane grassland, aspen, and Douglas-fir forest.

There is high summer bear activity area on the northeast side of the area, and mountain lions are found in suitable habitat. Deer use summer range here in appropriate habitat. Bighorn sheep are found in the eastern part, and in the winter they concentrate in the Huerfano valley. Lynx habitat is scattered across the area. The Slide Mountain roadless area includes a part of the large elk production area that extends across the Huerfano River drainage. Elk winter range is also found here. The Slide Mountain roadless area and the existing Sangre de Cristo Wilderness encompass to the entire headwaters of the Huerfano River, including the upper reaches of Cascade Creek, which contains a high-quality population of greenback cutthroat trout (*Oncorhynchus clarki stomias*).

Some 300 acres of the Strawberry Creek proposed RNA are within the area, while the remainder is within the existing Sangre de Cristo Wilderness. The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de Cristo Mountains unit encompasses all of Slide Mountain. The PCA called Cascade Creek at Slide Mountain, located primarily in the Wilderness to the east and of general biodiversity interest, comes over into the Slide Mountain roadless area. The roadless area is shown in SREP's vision as core wilderness

Blanca Peak

The Blanca Peak roadless area is at the extreme southern end of the Sangre de Cristo Wilderness. The area encompasses 1,500 acres on the northern slopes of Blanca Peak, including what is reputed to be the southernmost glacier in the United States. Although the Blanca Peak roadless area includes the highest peak in the Sangre de Cristo range, a magnet for hikers and climbers, it was excluded from the directly adjacent Sangre de Cristo Wilderness when it was designated in 1993 because of concern over access to old mining claims in the upper basin south of Lily Lake.

The Blanca Peak roadless area is predominantly alpine tundra, with some Engelmann-spruce subalpine fir in the valley below the north face. Gary's Peak whitlow-grass (*Draba grayana*) is a rare plant found here.

Bighorn sheep can be found in the area, and there is a lambing area immediately to the north in the Wilderness. In the winter the bighorn sheep concentrate in the Huerfano valley. A high priority linkage for deer and elk goes southeast from the Sangre de Cristo Wilderness just east of the Blanca Peak roadless area and continues southeast of the National Forest.

The Nature Conservancy's Conservation Portfolio moderately high conservation value Sangre de

Cristo Mountains unit covers all of Blanca Peak. The roadless area is shown in SREP's vision as core wilderness

Historical and Cultural Features of Sangre de Cristo complex

Some archeological, historical and cultural features of note include the following:

- The complex has unusual geology, for in contrast to most of Colorado's mountains, the Sangres were uplifted suddenly in massive blocks, resulting in high peaks and many fault zones, and an enduring impression of steep vertical ascents.
- Although it cannot match the Sawatch Range for Fourteeners, there are four located together, including Crestone Needle (14,197 feet). Many climbers consider the Needle to be Colorado's most challenging 14,000-foot peak. Ellingwood Peak, Mount Blanca, and Little Bear Peak are located together at the south end of the Sangre de Cristo Wilderness. Blanca Peak forms a triangle with Ute Mountain and San Antonio Mountain, considered to be sacred mountains by Native Americans.
- Medano Pass, also known as Sand Hill pass, and Mosca Pass, also called Robidoux's Pass, were well known to Native Americans, providing passage from the Wet Mountain Valley to the San Luis Valley. Later these were used by settlers, and a toll road was established in the 1870's along the Mosca Pass Road. It was used by stage coaches and for mail until about 1911. After being washed out repeatedly by floods, it is now a hiking trail.
- Zebulon Pike and his company, searching for the Red River, after realizing they had traveled in a circle and returned to an earlier campsite on the Arkansas River, crossed the Sangres at Medano Pass in 1807 and descended into the sand dunes at the base of the mountains. In 1848, John C. Fremont also crossed the range in winter, proving that it could be done, but suffered disastrous results as he pushed on westward.
- The western part of the Wet Mountain Valley, from a landscape scale perspective, is integral to the wildlife habitat and scenic beauty of the complex. Silver Cliff had the first permanent settlers in the valley in 1869. The following year a colony of more than 100 German families from Chicago took up homesteads. In 1878 rock composed of 75% silver was discovered. A few years later, the terminus of the Denver and Rio Grande railroad was placed a mile to the west at Westcliffe. Eventually the mining boom ended, the mines and mills closed, and the railway was abandoned. Silver Cliff and Westcliffe now serve as business and cultural centers for the surrounding ranches of the Wet Mountain valley.
- Today the Sangre de Cristo complex is crossed by five roads, several going only to the crest of the range. Hayden Pass Road crosses the range from the Coaldale area on the east to the Villa Grove area in the San Luis Valley, and the Medano Pass Road crosses a few miles south of the Custer/Huerfano County line. Other roads extend to the crest: Hermit Pass Road, west of Westcliffe; the Music Pass Road a few miles north of the Custer/Huerfano County line; and the Mosca Pass Road west of Sharpsdale. A sixth road extends nearly to the western boundary of the complex in the South Colony Lakes area southwest of Westcliffe. All of these roads receive moderate to heavy motorized use during the summer and particularly on weekends. A combination of use and lack of maintenance has caused deterioration of these roads, and the South Colony Creek road and Huerfano River roads, in particular, have become nearly impassible even to 4WD vehicles. The South Colony Lake route has been recommended by the Forest Service for closure farther east in order to preserve and rehabilitate the habitat.

Management Recommendations

Overview

Because the area is already dominated by the existing Sangre de Cristo Wilderness, the Sangre de

Cristo Complex offers a unique opportunity to manage an entire block of National Forest land with an emphasis on preservation of natural values. The existing Wilderness in general protects only higher-elevation areas. Because of the value of providing permanent protection for lower-elevation roadless areas, and preserving connectivity within the ecosystem, nine of the roadless areas adjoining the existing Wilderness are recommended for future Wilderness designation (Theme 1). Three areas are recommended for RNAs (Theme 2). Of the remaining roaded parts of the Forest, one unit is recommended for Connectivity (Theme 3) and the remaining units are recommended for Active Management for Wildlife Habitat (Theme 5). Table 5.13 lists the major management units by theme. Refer to the Sangre de Cristo Complex map at for specific locations and refer to the roadless area descriptions above for more details on the units.

Table 5.13: Sangre de Cristo Management Recommendations

Name	Acres	Recommended Management
Theme 1 – Natural Processes Dominate		
Sangre de Cristo Wilderness	95,500	1.1 Existing Wilderness
Carbonate Mountain	3,600	1.2 Recommended Wilderness (add to Sangre de Cristo)
Crystal Falls	2,600	1.2 Recommended Wilderness (add to Sangre de Cristo)
Greenleaf Creek	1,600	1.2 Recommended Wilderness (add to Sangre de Cristo)
Horn Creek	3,800	1.2 Recommended Wilderness (add to Sangre de Cristo)
Lake Creek	6,800	1.2 Recommended Wilderness (add to Sangre de Cristo)
May Creek	1,800	1.2 Recommended Wilderness (add to Sangre de Cristo)
Blanca Peak	1,600	1.2 Recommended Wilderness (add to Sangre de Cristo)
Slide Mountain	2,300	1.2 Recommended Wilderness (with BLM area Slide Mountain)
Upper Grape Creek	3,100	1.2 Recommended Wilderness (add to Sangre de Cristo)
Theme 2 – Special Areas		
Bruff Creek RNA	2,600	2.1 Research Natural Areas
Methodist Mountain RNA	7,700	2.1 Research Natural Areas
Strawberry Creek RNA	4,900	2.1 Research Natural Areas
Theme 3 – Natural Landscapes with Limited Management		
Hermit Pass	1,700	3.2 Connectivity Areas
Theme 5 – Active Management		
Eagle Peak Front	7,200	5.1 Active Mgmt - Wildlife Habitat
Hayden Pass	5,800	5.1 Active Mgmt - Wildlife Habitat
Hermit Horn Front	6,400	5.1 Active Mgmt - Wildlife Habitat
Huerfano South Fork	300	5.1 Active Mgmt - Wildlife Habitat
Manzanares Creek	300	5.1 Active Mgmt - Wildlife Habitat
Medano Pass	3,200	5.1 Active Mgmt - Wildlife Habitat
Methodist Howard	9,600	5.1 Active Mgmt - Wildlife Habitat
Music Pass	300	5.1 Active Mgmt - Wildlife Habitat
Theme 9 – Significant Lands (Non-USFS)		
Slide Mountain BLM	800	9.1 Non-USFS Recommended Wilderness

Theme 1 – Natural Processes Dominate

Lands are managed to maintain highly natural conditions and management activities are virtually unnoticeable. They may include designated Wilderness as well as semi-primitive lands that provide user opportunities that are inconsistent with Wilderness such as mountain biking

Theme 1.1 – Existing Wilderness

Wilderness Areas are designated by Congress and managed to protect and perpetuate their natural state, while offering opportunities for solitude and individual self-reliance.

- The Sangre de Cristo Wilderness covers much of the Forest Service lands in this complex. It should be managed over the next decade to bring it up to the national standards reflected in the Wilderness Stewardship Challenge issued by the Forest Service in celebration of the 40th anniversary of The Wilderness Act. (http://natlforests.org/wilderness_stewardship_10year.html)

Theme 1.2 – Recommended Wilderness

Recommended Wilderness areas are those that stakeholders advocate for inclusion in the National Wilderness Preservation System. All of the proposed wilderness areas meet the capability requirements of the Wilderness Act of 1964 for designation.

The Wild Connections Conservation Plan calls for wilderness designation of (north to south) Lake Creek, Greenleaf Creek, Horn Creek, Crystal Falls, Upper Grape Creek, May Creek, Carbonate Mountain, Blanca Peak, and Slide Mountain. They are each described in detail in the roadless area descriptions above. In general, the proposed Wilderness boundary is the same as the UASPP roadless area boundary. The following benefits were considered in making these recommendations: permanent protection to enhance wildlife habitat and connectivity, protecting sources of domestic water, providing for native species, and balancing motorized, high impact recreation in other parts of the complex with opportunities for quiet, challenging back country recreation.

We believe that all of these areas meet the capability, availability, and suitability criteria of the Wilderness Act and Forest Service Wilderness Handbook. These are discussed for the complex as whole below, with notations as to particular values or potential conflicts.

Capability

All of the proposed Wildernesses meet the capability requirements of the Wilderness Act of 1964 for designation. Like the existing Sangre de Cristo Wilderness, these areas provide opportunities for solitude, challenge, and unconfined recreation. The imprints of humans are substantially unnoticeable. Many areas adjoining the Sangre de Cristo Wilderness have long been recognized as having the qualities required of Wilderness areas, but were excluded from the 1993 Colorado Wilderness Bill because of various perceived conflicts. For example, the Blanca Peak area was excluded because of concern over access to old mining claims in the Lily Lake area; this issue has since been resolved.

Availability

Likewise all the proposed areas are available for Wilderness with no known impediments. The proposed Wildernesses contain no active mines. The watersheds and streams are already allocated, and no new water projects are planned. Planned fuels reduction projects are, to the best of our knowledge, located outside the proposed Wilderness areas. All boundaries were drawn so as to exclude the motorize Rainbow Trail from the Wildernesses. May Creek may contain an easement that would require closure. Overall, there are no known or anticipated threats to the areas that would preclude their designation as Wilderness.

Grazing allotments include a small portion of Allotment 211 on the southern edge of Upper Grape Creek; Allotments 214-220 across May Creek and Carbonate Mountain; and Allotment 221 on Slide Mountain would be grandfathered in with Wilderness designation, although over time they should be retired where feasible. These do not present a problem for Wilderness

designation.

Suitability

One use which would be forgone in newly designated Wilderness additions would be motorized recreation on non-system routes. The additions are located between the Rainbow Trail and the existing Wilderness boundary, and any non-system motorized routes in these areas would be relatively short spurs and should be closed. Possibly fuels reduction projects could not be expanded.

Numerous values support the designation of the proposed Wildernesses and contribute to the National Wilderness System:

- The proposed additions to the Sangre de Cristo Wilderness, other than Blanca Peak, represent lower elevation ecological zones than are in the currently designated Wilderness. In particular, Greenleaf Creek contains predominantly ponderosa pine forest, and both Crystal Falls and Slide Mountain additions contain substantial areas of Douglas-fir. Protection of these areas would protect species which rely on these ecosystems or which use them as migration corridors.
- Habitat and areas for large native carnivores, including lynx, would be protected. Radio signals from lynx dispersing from the San Juans reintroduction were reported in this complex, especially at the north end of the range and the Wet Mountain valley, by the Colorado Division of Wildlife.
- Habitat for many rare and endangered species, including greenback cutthroat trout (*Oncorhynchus clarki stomias*), as well as many rare plants, would be protected.
- There are outstanding opportunities for solitude, quiet backcountry recreation, and challenge throughout the area.
- Local economies will be enhanced by their proximity to the expanded Sangre de Cristo Wilderness, as this Wilderness is a prime destination for self-guided and outfitter trips.

Theme 2 – Special Areas

Theme 2 areas are managed to protect or enhance areas with unusual characteristics, including Research Natural Areas, special biological or geological areas, cultural/historical areas, or other special designations.

Theme 2.1 – Research Natural Areas: Existing and Proposed

Research Natural Areas (RNAs) form a long-term network of ecological reserves designated for research, education, and the maintenance of biodiversity. Emphasis is on research, study, observations, monitoring, and educational activities that allow ecological processes to prevail with minimal human intervention.

To supplement the range of research opportunities and increase the ecosystem representation we recommend that Methodist Mountain, Bruff Creek, and Strawberry Creek be added to the RNA system. Each has its unique combination of ecological values which will enhance the system. All are adjacent to or within designated and proposed Wilderness.

- The 7,700-acre Methodist Mountain proposed RNA overlaps the Methodist Mountain roadless area and thus is partially roadless. An area of very diverse vegetation, it includes an unusual narrowleaf cottonwood/Douglas-fir (*Populus angustifolia/Pseudotsuga menziesii*) plant community. A valuable area for wildlife, it includes an elk production area, and an elk migration corridor passes just to the south of the area.
- The Bruff Creek proposed RNA of 2,600 acres contains a broad mix of vegetation types, including areas of aspen forest, Engelmann spruce/subalpine fir forest, and mixed conifer

forest, including some stands of old-growth Douglas-fir, white fir, and ponderosa pine forest. It has significant wetlands and riparian areas, containing examples of coniferous riparian, deciduous riparian, and riparian shrubland communities, as well as playa lake-type wetlands. There are even some piñon-juniper-juniper stands, resulting in a high diversity of plant communities and animal habitats. Although no threatened or endangered species were noted in CNHP's ecological evaluation, Bruff Creek would "preserve the area as an example of mixed-conifer and aspen forests, piñon-juniper-juniper woodland, and riparian plant communities in very good condition." (Carsey, Katherine. 1997. Ecological Evaluation for the Bruff Creek Potential RNA. Colorado Natural Areas Program.)

- The Strawberry Creek proposed RNA comprises 4,900 acres near the southern end of the Sangre de Cristo Wilderness is almost entirely within the existing Wilderness, with a small portion within the proposed Slide Mountain Wilderness area. The area contains examples of many plant associations, including outstanding old-growth stands of spruce-fir, climax stands of ponderosa pine, as well as exceptionally high-quality subalpine wetlands, aspen stands of varying ages in old burn areas, and grassland communities in good condition. The area has a population of only slightly-hybridized greenback cutthroat trout (*Oncorhynchus clarki stomias*). Designation of Strawberry Creek as a RNA would require the closure of part of the South unit of the Huerfano cattle and horse grazing allotment.

Theme 3.2 – Connectivity Areas
Management emphasis is to facilitate daily, seasonal, and natal dispersal movements of native wildlife between larger blocks of suitable habitat.

Hermit Pass is designated as a connectivity area between the two portions of the designated Sangre de Cristo Wilderness. It includes bighorn sheep summer range and a lambing area, as well as mule deer and elk summer range.

Theme 5 – Active Management
These areas are managed to meet a variety of ecological and human needs with active management for a full spectrum of multiple use activities such as: wildlife habitat, energy development, timber harvest, livestock grazing, dispersed motorized recreation, prescribed fire, and vegetation treatments. This zone is where intensive timber management can occur for commercial production and fuels reduction objectives.

Theme 5.1 – Active Management for Wildlife Habitat
Management objective is to provide high quality, all-season habitat, forage, cover, escape terrain, solitude breeding habitat, and protection for a variety of wildlife species and associated plant communities

Most of the remaining National Forest land around the more protected areas is recommended for this wildlife habitat management theme. These units are named Hayden Pass, Hermit Horn Front, Huerfano South Fork, Eagle Peak Front, Medano Pass, Methodist Howard, Manzanares Creek, and Music Pass.

This multiple use designation has some provisions which will enhance wildlife considerations. Seasonal restrictions may be needed for sensitive wildlife areas such as: deer fawning, elk calving, and bighorn sheep lambing areas; winter range for ungulates; for locations of rare, endangered or sensitive species, such as greenback cutthroat trout (*Oncorhynchus clarki stomias*) and wolverine (*Gulo gulo*), and accommodation of larger carnivores such as lynx.

Connectivity

Unlike most of the complexes covered in this conservation plan, the Sangre de Cristo complex is already dominated by a single, large designated Wilderness. Consequently, connectivity concerns between core areas exist with respect to the Methodist Mountain area in the north. Land between the proposed RNA and the Wilderness is recommended for Active Management for Wildlife Habitat, and some special restrictions may be needed to protect the connectivity for lynx and other species crossing between the Sawatch and the Sangres in this area. However, the Sangre de Cristo Wilderness within the complex is bisected by five 4WD roads, which should be managed to recognize their proximity to unspoiled designated Wilderness or proposed Wilderness, and to protect these wilderness values.

The connection with the adjoining Rio Grande National Forest is continuous and the common boundary lies almost entirely within the existing Sangre de Cristo Wilderness. However, the high elevations of the Sangre de Cristo crest pose a significant barrier to wildlife movement. The three most significant passes crossing the range, Hayden, Medano, and Mosca Pass, all have 4WD roads and significant human visitation, particularly during the summer season. Although Forest land extends westward from the Sangre de Cristo Range to the Sawatch Range, the Sangre de Cristo complex is separated from the Sawatch complex by the heavily-traveled US 285 Highway corridor, which poses a substantial barrier to wildlife movement. Since the Monarch Pass-Poncha Pass linkage is identified by SREP as one of the 12 highest priority in the state, especially for lynx, this barrier is of concern. The Sangre de Cristo complex is contiguous with a small portion of the Arkansas Canyons complex lying south of the Arkansas River, but is separated from the bulk of that complex by the heavily-traveled US Highway 50 corridor. The common boundary between the Sangre de Cristo complex and the Wet Mountain complex, as well as the southernmost portion of the Arkansas Canyons complex, is located in the central Wet Mountain Valley, an area almost entirely in private ownership, which contains large areas of irrigated agricultural land and fenced, private grazing land. Largely in private ownership, but of particular significance for National Forest planning purposes, are the significant wildlife corridors between the two complexes in the vicinity of Promontory Divide along the Custer/Huerfano County line.

Summary

The stunning high peaks and deep riparian valleys in the Sangre de Cristo Complex are not only mostly protected by Wilderness, but stand in sharp contrast to the Wet Mountain Valley to the east beyond the Forest land. Wildlife values include populations of the endangered greenback cutthroat trout (*Oncorhynchus clarki stomias*), found now in only a few isolated watersheds, and potential permanent populations of lynx. The steep elevation gradient compresses the ecosystems or life zones into narrow bands, leading to a great diversity of vegetation as one ascends the trails. Mountain climbing, backcountry hiking, horse packing, and camping are among the most popular back country activities. The Rainbow Trail along with several 4WD routes provide motorized access along the whole front and to the crest of the range. These high mountains supplemented by the intermountain valley are integral part of the network of wildlands that will sustain the integrity of the Pike-San Isabel National Forest, both now and in the foreseeable future.

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