United States Department of Agriculture

Scenic Integrity Objectives Report

Carson National Forest

Land Management Plan – Preferred Alternative

Rio Arriba, Taos, Mora, and Colfax Counties, New Mexico

Forest Service Carson National Forest MB-R3-02-10 April 2022

Title Page Photo Credit – Taos Ski Valley, Allan Lemley.

Final - replaces the previous December 2022 version, not an exact reprint.

Introduction

This report documents scenic character descriptions and scenic integrity objectives developed as part of the forest planning process for the Carson National Forest. The Forest Service's approach to scenery management is described by the 1995 Landscape Aesthetics handbook (USDA FS 1995). Scenery is the appearance of a place, a landscape, or features of a landscape. It is the visual image created by a place, including a landscape's natural features, cultural features, and built environment. Scenery and natural settings are the backdrop to homes and communities and are a primary reason people visit, recreate, and live near the Carson NF. Scenery is integral to a community's sense of place and quality of life and contributes to local economies. It is an important component of recreation settings and influences visitors' recreational experiences. All Federal land management agencies are required to consider scenic and aesthetic resources during land management planning, resource planning, and project design, implementation, and monitoring.

Scenery Management System

The Scenery Management System (SMS) is a systematic approach to inventory, evaluate, prioritize, manage, and monitor landscapes for their scenic value and replaces the Forest Service's previous framework, the Visual Management System (VMS). Conceptually, the SMS differs from the VMS in that: it increases the role of constituents throughout the inventory and planning process and borrows from and is integrated with the basic concepts and terminology of ecosystem management. The Scenery Management System provides for improved integration of aesthetics with other biological, physical, and social/cultural resources in the planning process.

Scenic character and ecological processes are the foundation of the SMS. The SMS recognizes that landscapes are not static. Instead of basing objectives for scenery on one landscape condition at one point in time, scenic integrity objectives (SIOs) are grounded by naturally changing and evolving conditions that are described in the scenic character. Ecological concepts are integrated with the SMS by including natural disturbances such as fire, insects, and disease in scenic character descriptions and subsequently, in assessing the effects (positive and negative, as well as short term and long term) of management activities. Scenery is integral to, rather than separate from (or even contrary to) healthy, resilient landscape conditions. The SMS recognizes that some constructed and other cultural features add to, rather than detract from, scenery.

Goals related to scenery management have two components: scenic character and scenic integrity objectives. Scenic integrity objectives are management decisions based on plan direction scenic class. Scenic classes describe the importance or value of a particular landscape or portions of that landscape based on a combination of scenic attractiveness and landscape visibility. They represent the public importance placed on landscapes viewed from travel ways and use areas and are used to integrate the value of scenery with the value of other resources, such as timber, wildlife, or minerals during planning.

Scenic integrity objectives (SIO) are defined by minimally acceptable levels and the direct intent to achieve the highest scenic integrity possible. Scenic integrity objectives are stated in degrees of deviation from the existing landscape character in a national forest. They define the degrees of deviation in form, line, color, scale and texture that may occur at any given time. When there are considerable differences between existing and desired landscape character, it may be necessary to design a transition strategy. (USDA FS 1995)

This report describes scenic character and scenic integrity objectives at a forestwide scale. Local inconsistencies may be present. Examples of these inconsistencies are existing features with long-term impacts that will not achieve the desired SIO over the life of the plan (e.g., roads or trails, power lines, recreation facilities, pipelines, utility corridors, etc.), or geospatial data inconsistencies, especially along SIO boundaries. Scenic integrity objectives on projects are the result of analysis, public engagement, and resource integration with other management objectives and emphases.

Scenic character

Scenic character is a combination of the physical, biological, and cultural images that give an area its scenic identity and contribute to its sense of place. The term scenic character is established in the 2012 Forest Service Planning Rule and will be used in place of landscape character throughout this document.

Scenic character gives a geographic area its visual and cultural image, combining the physical, biological and cultural attributes that make each landscape identifiable or unique. All landscapes have definable scenic character attributes. In most national forest settings, scenic character attributes are positive natural elements (e.g. landform, vegetative patterns, and water). In pastoral or rural/agricultural settings, positive cultural elements may include historic features such as stone bridges, split rail fences, stone walls, barns, cabins, and hedge rows. In urban settings, scenic character may include architectural styles. Combinations of these attributes define scenic character and express the positive image of the landscape.

Landscapes can be defined and classified using various scenic character attributes. In most national forest settings, scenic character attributes are natural elements (e.g. landform, vegetative patterns, and water). In pastoral or rural/agricultural settings, positive cultural elements may include historic elements such as split rail fences, stone walls, barns, cabins, and hedge rows. In urban settings, scenic character may include architectural styles. Combinations of these attributes define scenic character.

According to the SMS Handbook, “An Ecological Unit Description (EUD)…represents the common starting point for SMS and for Ecosystem Planning. An objective description of the biological and physical elements is drawn from the EUD and combined with identified scenic character attributes to develop the Scenic Character Description.” (USDA FS 1995 p. 6).

Scenic character descriptions serve to: establish the current overall impression of a landscape, the physical appearance of the landscape that contributes to the identity and a “sense of place”; provide a reference to compare existing scenic character to desired scenic character; and provide a reference for changes in scenic character as the landscape progresses toward the character goal, establishing a baseline from which to measure or monitor scenic character. On some projects it may be necessary to develop analysis area boundaries which differ from ecological unit boundaries. Ecological units can be aggregated or divided in order to focus on relevant issues and concerns. (USDA FS 1995 p. 1-10)

Scenic character descriptions described in this document are based on Ecological Subsections. Descriptions for these subsections were not available at the time this document was written. The ecological component information was compiled from a variety of sources including but not limited to Ecological Subregions of the United States (McNab and Avers 1994), Ecological Subregions: Sections of the Conterminous United States (McNab et al. 2005), Ecoregions of New Mexico (Griffith, et al. 2006), and Geographic Information System (GIS) corporate data. According to the SMS Handbook, “An Ecological Unit Description (EUD)…represents the common starting point for SMS and for Ecosystem Planning. An objective description of the biological and physical elements is drawn from the EUD and

combined with identified scenic character attributes to develop the Landscape [Scenic] Character Description." (USDA FS 1995 p. 6).

The scenic character descriptions in this document include both social and ecological components which discuss the existing attributes such as landform, vegetative pattern, water characteristics, recreation opportunities and cultural features. The social component and ecological component are summarized in the following categories:

Social Component categories:

• Landscape Attributes with Special or Distinctive Features

• Recreation Opportunities

Ecological Component categories:

• Geomorphology and Landforms

• Existing Vegetation

• Surface Water Characteristics

• Disturbance Regimes

Carson National Forest Existing Scenic Character

The existing scenic character describes the valued aesthetic attributes that express the positive image of the current landscape.

The Carson National Forest is a recreation destination, attracting visitors from the local area, across New Mexico, bordering states, and across the country. The 1.5 million acre forest is located in north central New Mexico with elevations ranging from 6,000 to 13,161 feet at Wheeler Peak, the highest point in New Mexico. The Forest encompasses three zones with varying landforms. East of the Rio Grande, the southern Sangre de Cristo Mountains dominate the landscape with snow covered peaks. Tributaries flowing west to the Rio Grande include magnificent forests of aspen, pine, fir and spruce and steep canyons. The eastern slopes include the expansive grasslands of the Valle Vidal and open into the great Plains to the east. This zone includes the Red River, Taos, Sipapu, and Enchanted Forest Ski Areas, and three national recreation trails. West of the Rio Grande, the Tusas Mountains are more rolling with wet meadows and large aspen stands transitioning to mesa woodlands in the lower elevations to the south. The Continental Divide National Scenic Trail traverses the western edge of this zone from the high elevation Cruces Basin Wilderness to the dramatic steep and colorful cliffs of the Chama River valley. The Jicarilla Ranger District comprises the third zone, located on the eastern edge of the San Juan Basin, with rugged buttes, steep canyons, and prominent mesas.

The Forest provides a visual backdrop to many communities, homes, and travel ways with a diversity of scenic landscape features including higher elevation spruce-fir forests, aspen adding vibrant gold during autumn, lush high mountain meadows filled with wildflowers, dramatic landforms with vibrant colors, brilliant red rock canyons and cliffs, sandstone bluffs, and mountain peaks. Grasslands, escarpments, rugged canyons, mesas, plateaus, rolling foothills and mountains, and mountain peaks provide a range of topography. The vegetative mosaic varies across the Forest with pinyon-juniper shrublands, grasslands, sagebrush shrublands, aspen, and conifer forests consisting mostly of ponderosa pine with mixed conifer

and aspen forest and spruce-fir conifer forests at higher elevations in both the Sangre de Cristo and Tusas Mountains.

People are drawn to the Carson NF for its stunning views, diversity of scenic landscape features, and recreation opportunities. The landscape is predominately a naturally appearing landscape with vegetation shaped by recent and historic fires. There are many small communities within the national forest boundaries. Historically, these communities have relied on forest resources and are closely tied to forest use for food, shelter, water, and economic support. The rich history and cultural uniqueness of northern New Mexico influence and help frame the scenic character of the landscape. Agricultural and pastoral landscapes are common with pastures, hay fields, grazing infrastructure, and acequias.

Scenic Character Mapping

Scenic character is described for an identifiable area of a national forest. For forest planning, and landscape analysis purposes it is beneficial to describe scenic character for an Ecological Land Unit, or aggregations of units that might form a larger geographic area such as a watershed or other administrative unit (USDA FS 1995 1-10). Scenic character descriptions are based on ecological unit descriptions supplemented with existing land use patterns or themes. On the Carson NF, eleven ecological units are defined primarily by ecoregional subsections or combinations of subsections, then by USGS New Mexico ecoregions and watershed boundaries.

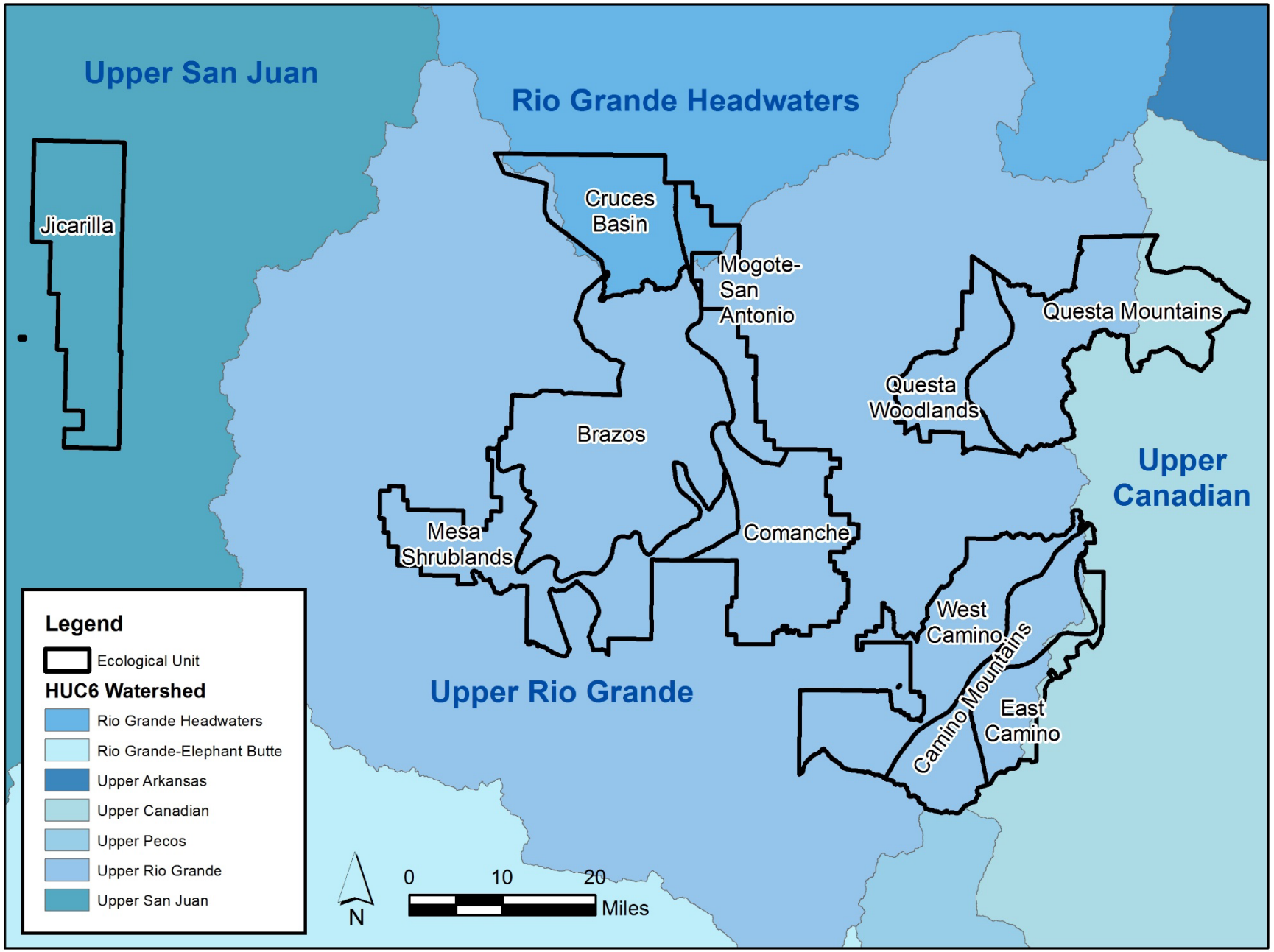

Figure 1. Scenic character ecological units and 6th code watersheds for the Carson National Forest

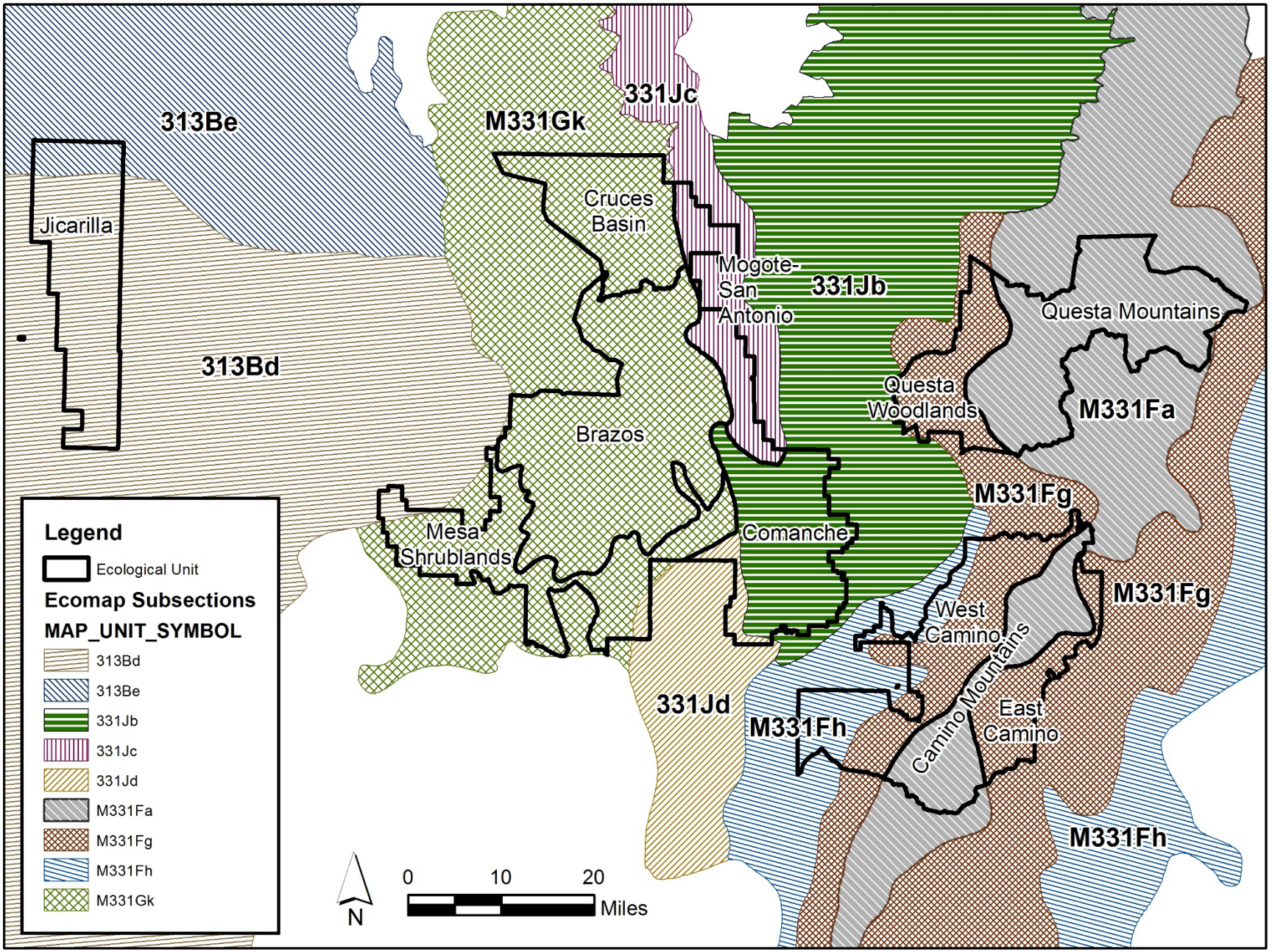

Figure 2. Scenic character ecological units and ecoregional subsections for the Carson National Forest

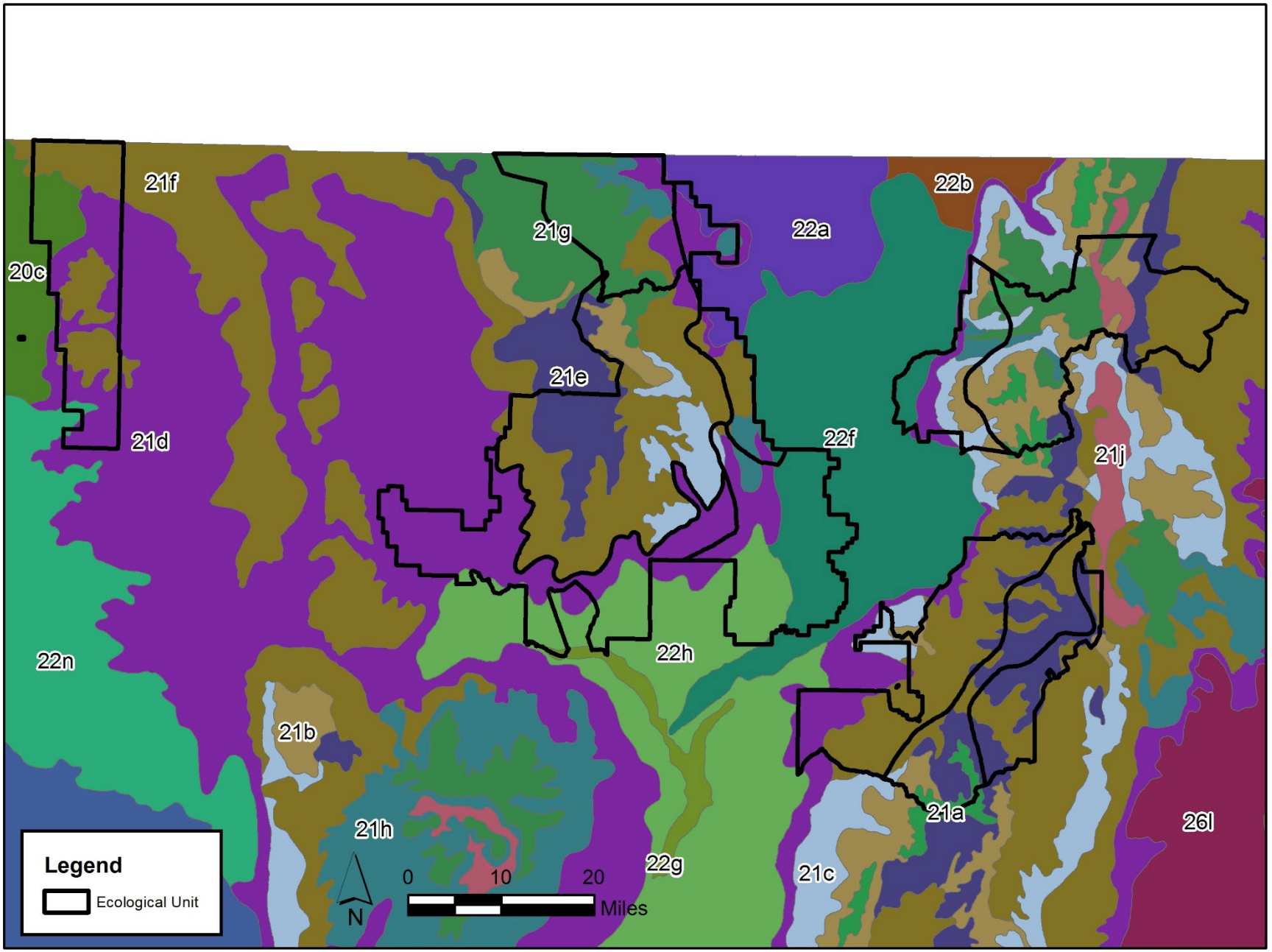

Figure 3. Scenic character ecological units and USGS ecoregions of NM for the Carson National Forest

Ecological Unit Descriptions

Questa Mountains (M331Fa subsection)

Social Component

The Southern Parks and Rocky Mountain Ranges Section is comprised largely of very high elevation meadows and mountain ranges in the Sangre de Cristo Mountains. High elevation parks and ranges present physical limitations with regard to weather patterns, reduced oxygen levels, lack of abundance and variety in plant and animal communities, and a short growing season. There is little evidence of permanent occupation during prehistoric times, but high elevation areas have been utilized on a relatively limited basis from the earliest dates of human occupation in the Southwest, i.e., since about 12,000 years ago. Although such areas are somewhat inhospitable, prehistoric peoples did make considerable use of various resources found in high elevation areas. These included lithic materials, large and small game, plant materials, spiritual power locations, and various minerals. With heavy reliance on agriculture beginning around 1000 A.D., early farmers began using the lower limits of high elevation areas to grow crops. High elevation areas have the most abundant and most reliable rainfall in the Southwest, which functioned to attract agricultural peoples; but limitations were presented by an increasingly shorter growing season with increase in elevation.

In the earlier portion of the historic period in the 1600's and 1700's high elevation activities included continued hunting and foraging by Native Americans, but with the addition of Anglo fur trapping and Hispanic summer sheep pasturage. As Anglo and Hispanic utilization increased, such activities as hard rock mining, cattle grazing, and timber harvest and freighting grew in importance. These activities were highly dependent on Eastern transportation and market systems. By the late 1800's, more and more farms, ranches, and homesteads made their appearance in the Sangre de Cristo Mountains. Through construction of irrigation systems, supplied with water from the relatively abundant precipitation at high elevations, farmers and homesteaders were able to survive by growing crops to help feed cattle and sheep herds during the harsh winter months. Much of the area within this Section is now national forest land, with a significant portion designated as wilderness. Economic uses of the mountains include recreation, logging, and ranching. Both Hispanic and Native American communities continue many traditional uses of the mountains, and many of the peaks have special religious significance for nearby pueblos. (McNab et al. 1996)

This portion of the Carson NF includes three of the forest’s four ski areas which also offer a range of summer activities including hiking and mountain biking. It includes three large wilderness areas and the remote and undeveloped Valle Vidal unit. The village of Taos Ski Valley and Red River have economies based on recreation and tourism and are prominent destinations for many visitors.

Ecological Component

Landforms are mountains and high intermontane valleys with some basalt mesa tops. The Sangre de Cristo Mountains are the major landform feature. Predominant vegetation includes Douglas-fir and ponderosa pine in frigid soil temperature regimes; Engelmann spruce and subalpine fir in cryic soil temperature regimes; steep slopes, ridges, and exposed rocky peaks above timberline. Vegetation represents a range of seral conditions. Snow cover is a major source of water for lower, more arid ecoregions. Precipitation averages 18 to 28 in (600 to 700 mm) annually, with less than half of the precipitation falling during the winter. Temperature averages 32 to 70°F (0 to 7°C) and winters are cold. The growing season lasts 70 to 110 days. Water from streams and lakes is abundant and ground water is

plentiful. Moderate to high gradient perennial, intermittent, and ephemeral streams with boulder, cobble, and bedrock substrates. Fires vary in frequency and intensity in ponderosa pine stands but may occur when fuel load is high and dry. Fire is rare in areas with cryic temperature regimes and udic soil moisture regimes. The upper mountain slopes are forested, but merchantable timber is scarce. Recreation, mining, and ranching are important land uses. There are large elk herds in the Valle Vidal. (Griffith et al. 2006, McNab et al. 1996)

Questa Woodlands (M331Fg subsection)

Social Component

Uses include livestock grazing, wildlife habitat, and some irrigated hayland and cropland adjacent to perennial streams. There is significant development around the communities along Highway 522 including Arroyo Hondo, San Cristobal, Lama, Questa, and El Rito as well as in the Red River and Rio Hondo corridors. The Chevron Mine outside Questa is visible from many most high points. There are many popular campsites and trail heads and portions of the Latir Peak and Columbine-Hondo Wilderness areas to the east. The Cebolla Mesa and Horsethief areas to the west are popular with mountain bikers, hikers, fishermen and border the Rio Grande and Red River Wild and Scenic Rivers and the prominent Rio Grande Gorge.

Ecological Component

Topography is rolling hills, ridges, and outwash fans to level plateau, dropping sharply into a deep river gorge. The Sangre de Cristo Mountains and Rio Grande Gorge are the major landform features. Most streams are ephemeral and intermittent with a few moderate to high gradient perennial streams in the nearby mountains. Vegetation is mainly Douglas-fir and ponderosa pine, piñon and juniper woodland, sagebrush shrubland, and some grassland and represents a range of seral conditions. The Cabresto and Eagle Rock Lakes are two reservoirs that provide scenic recreational opportunities. Precipitation averages 12 to 40 in (600 to 700 mm) annually, with less than half of the precipitation falling during the winter. Temperature averages 32 to 85°F (0 to 7°C) and winters are cold. The growing season lasts 70 to 130 days. Fires vary in frequency and intensity in ponderosa pine stands, but may occur when fuel load is high and dry. (Griffith et al. 2006, McNab et al. 1996)

West Camino Real (M331Fg and M331Fh subsections)

Social Component

The Southern Parks and Rocky Mountain Ranges Section is comprised largely of meadows and mountain ranges in the Sangre de Cristo Mountains. High elevation parks and ranges present physical limitations with regard to weather patterns, reduced oxygen levels, lack of abundance and variety in plant and animal communities, and a short growing season. There is little evidence of permanent occupation during prehistoric times, but high elevation areas have been utilized on a relatively limited basis from the earliest dates of human occupation in the Southwest, i.e., since about 12,000 years ago. Although such areas are somewhat inhospitable, prehistoric peoples did make considerable use of various resources found in high elevation areas. These included lithic materials, large and small game, plant materials, spiritual power locations, and various minerals. With heavy reliance on agriculture beginning around 1000 A.D., early farmers began using the lower limits of high elevation areas to grow crops. High elevation areas have the most abundant and most reliable rainfall in the Southwest, which functioned to attract agricultural peoples; but limitations were presented by an increasingly shorter growing season with increase in elevation.

In the earlier portion of the historic period in the 1600's and 1700's high elevation activities included continued hunting and foraging by Native Americans, but with the addition of Anglo fur trapping and Hispanic summer sheep pasturage. As Anglo and Hispanic utilization increased, such activities as hard rock mining, cattle grazing, and timber harvest and freighting grew in importance. These activities were highly dependent on Eastern transportation and market systems. By the late 1800's, more and more farms, ranches, and homesteads made their appearance in the Sangre de Cristo Mountains. Through construction of irrigation systems, supplied with water from the relatively abundant precipitation at high elevations, farmers and homesteaders were able to survive by growing crops to help feed cattle and sheep herds during the harsh winter months. Much of the area within this Section is now national forest land, with a significant portion designated as wilderness. Economic uses of the mountains include recreation, logging, and ranching. Both Hispanic and Native American communities continue many traditional uses of the mountains, and many of the peaks have special religious significance for nearby pueblos. (McNab et al. 1996)

This portion of the Carson NF includes many small communities along Highways 64, 518, 75, and 76 and is heavily used for recreation, fuelwood gathering, hunting, and fishing. There are many popular campgrounds, day use sites, and trailheads that are easily accessible from paved roads. The South Boundary Trail, Devisadero Trail, and Talpa trail network are all accessed from the El Nogal Trailhead just east of Taos. They each provide sweeping views across the Taos area and are some of the most accessible and popular on the Carson NF. The Amole Canyon area provides cross country skiing and snowmobiling opportunities in the winter and hiking and motorized recreation in the summer.

Ecological Component

Landforms are mountain ridges with steep slopes, low hills, and footslopes. Predominant vegetation includes Douglas-fir and ponderosa pine, piñon-juniper woodlands, and sagebrush shrublands. Vegetation represents a range of seral conditions. Snow cover is a major source of water for lower, more arid ecoregions. Precipitation averages 18 to 29 in (600 to 700 mm) annually, with less than half of the precipitation falling during the winter. Temperature averages 37 to 78°F (0 to 7°C) and winters are cold. The growing season lasts 70 to 110 days. Moderate and high gradient perennial, intermittent, and ephemeral streams with boulder, cobble, and bedrock substrates. Fires vary in frequency and intensity in ponderosa pine stands but may occur when fuel load is high and dry. Recreation, timber, and ranching are important land uses. (Griffith et al. 2006, McNab et al. 1996)

Camino Real Mountains (M331Fa subsection)

Social Component

The Southern Parks and Rocky Mountain Ranges Section is comprised largely of very high elevation meadows and mountain ranges in the Sangre de Cristo Mountains. High elevation parks and ranges present physical limitations with regard to weather patterns, reduced oxygen levels, lack of abundance and variety in plant and animal communities, and a short growing season. There is little evidence of permanent occupation during prehistoric times, but high elevation areas have been utilized on a relatively limited basis from the earliest dates of human occupation in the Southwest, i.e., since about 12,000 years ago. Although such areas are somewhat inhospitable, prehistoric peoples did make considerable use of various resources found in high elevation areas. These included lithic materials, large and small game, plant materials, spiritual power locations, and various minerals. With heavy reliance on agriculture beginning around 1000 A.D., early farmers began using the lower limits of high elevation areas to grow crops. High elevation areas have the most abundant and most reliable rainfall in the Southwest, which

functioned to attract agricultural peoples; but limitations were presented by an increasingly shorter growing season with increase in elevation.

In the earlier portion of the historic period in the 1600's and 1700's high elevation activities included continued hunting and foraging by Native Americans, but with the addition of Anglo fur trapping and Hispanic summer sheep pasturage. As Anglo and Hispanic utilization increased, such activities as hard rock mining, cattle grazing, and timber harvest and freighting grew in importance. These activities were highly dependent on Eastern transportation and market systems. By the late 1800's, more and more farms, ranches, and homesteads made their appearance in the Sangre de Cristo Mountains. Through construction of irrigation systems, supplied with water from the relatively abundant precipitation at high elevations, farmers and homesteaders were able to survive by growing crops to help feed cattle and sheep herds during the harsh winter months. Much of the area within this Section is now national forest land, with a significant portion designated as wilderness. Economic uses of the mountains include recreation, logging, and ranching. Both Hispanic and Native American communities continue many traditional uses of the mountains, and many of the peaks have special religious significance for nearby pueblos. (McNab et al. 1996)

This portion of the Carson NF includes the Sipapu ski area and a portion of the Pecos Wilderness. The Garcia Park area is popular for dispersed recreation and serves as a trailhead for the popular South Boundary mountain bike trail. Otherwise much of this area is remote and difficult to access but is popular with hunters and important for grazing and fuelwood gathering.

Ecological Component

Landforms are mountains and high intermontane valleys. The Sangre de Cristo Mountains are the major landform feature. Predominant vegetation includes Douglas-fir and ponderosa pine in frigid soil temperature regimes; Engelmann spruce and subalpine fir in cryic soil temperature regimes; steep slopes, ridges, and exposed rocky peaks above timberline. Vegetation represents a range of seral conditions. Snow cover is a major source of water for lower, more arid ecoregions. Precipitation averages 24 to 55 in (600 to 700 mm) annually, with less than half of the precipitation falling during the winter. Temperature averages 32 to 70°F (0 to 7°C) and winters are cold. The growing season lasts 50 to 110 days. Water from streams and lakes is abundant and ground water is plentiful. Moderate to high gradient perennial, intermittent, and ephemeral streams with boulder, cobble, and bedrock substrates. Fires vary in frequency and intensity in ponderosa pine stands but may occur when fuel load is high and dry. Fire is rare in areas with cryic temperature regimes and udic soil moisture regimes. The upper mountain slopes are forested. Recreation, mining, timber, and ranching are important land uses. (Griffith et al. 2006, McNab et al. 1996)

East Camino Real (M331Fg subsection)

Social Component

The Southern Parks and Rocky Mountain Ranges Section is comprised largely of very high elevation meadows and mountain ranges in the Sangre de Cristo Mountains. High elevation parks and ranges present physical limitations with regard to weather patterns, reduced oxygen levels, lack of abundance and variety in plant and animal communities, and a short growing season. There is little evidence of permanent occupation during prehistoric times, but high elevation areas have been utilized on a relatively limited basis from the earliest dates of human occupation in the Southwest, i.e., since about 12,000 years ago. Although such areas are somewhat inhospitable, prehistoric peoples did make considerable use of various resources found in high elevation areas. These included lithic materials, large and small game,

plant materials, spiritual power locations, and various minerals. With heavy reliance on agriculture beginning around 1000 A.D., early farmers began using the lower limits of high elevation areas to grow crops. High elevation areas have the most abundant and most reliable rainfall in the Southwest, which functioned to attract agricultural peoples; but limitations were presented by an increasingly shorter growing season with increase in elevation.

In the earlier portion of the historic period in the 1600's and 1700's high elevation activities included continued hunting and foraging by Native Americans, but with the addition of Anglo fur trapping and Hispanic summer sheep pasturage. As Anglo and Hispanic utilization increased, such activities as hard rock mining, cattle grazing, and timber harvest and freighting grew in importance. These activities were highly dependent on Eastern transportation and market systems. By the late 1800's, more and more farms, ranches, and homesteads made their appearance in the Sangre de Cristo Mountains. Through construction of irrigation systems, supplied with water from the relatively abundant precipitation at high elevations, farmers and homesteaders were able to survive by growing crops to help feed cattle and sheep herds during the harsh winter months. Much of the area within this Section is now national forest land, with a significant portion designated as wilderness. Economic uses of the mountains include recreation, logging, and ranching. Both Hispanic and Native American communities continue many traditional uses of the mountains, and many of the peaks have special religious significance for nearby pueblos. (McNab et al. 1996)

This portion of the Carson NF includes forest roads 76 and 161 and several motorized trails. There are popular campgrounds in La Junta Canyon. There is evidence of previous logging throughout the area particularly in the Little Korea and Angostura areas.

Ecological Component

Landforms are high mountains with steep slopes. Predominant vegetation includes Douglas-fir and ponderosa pine in frigid soil temperature regimes; Engelmann spruce and subalpine fir in cryic soil temperature regimes; steep slopes, ridges, and exposed rocky peaks above timberline. Vegetation represents a range of seral conditions. Snow cover is a major source of water for lower, more arid ecoregions. Precipitation averages 24 to 55 in (600 to 700 mm) annually, with less than half of the precipitation falling during the winter. Temperature averages 32 to 70°F (0 to 7°C) and winters are cold. The growing season lasts 50 to 110 days. Water from streams is abundant and ground water is plentiful. High gradient perennial, intermittent, and ephemeral streams with boulder, cobble, and bedrock substrates. Fires vary in frequency and intensity in ponderosa pine stands but may occur when fuel load is high and dry. Fire is rare in areas with cryic temperature regimes and udic soil moisture regimes. Recreation and ranching are important land uses. (Griffith et al. 2006, McNab et al. 1996)

Cruces Basin (M331Gk subsection)

Social Component

Most of this area is Federally owned and remote, the remainder is in small farms, ranches, and private holdings. A large portion is in the Cruces Basin Designated Wilderness. Most of the grassland and much of the open woodland is grazed. Some small valleys are irrigated. Recreation, hunting, and timber harvest are important land uses. The Continental Divide National Scenic Trail traverses the western edge of the Carson NF in this area. The campgrounds in the steep Rio de los Pinos canyon are popular for fishing, camping and day use. There are many dispersed camping sites along forest roads 87 and 87A that are busy during the summer, especially during hunting season.

Ecological Component

Topography is high mountains with steep slopes to the west, sloping to low mountain ridges, slopes, and outwash fans to the east. Vegetation is spruce--fir forest; ponderosa pine--Douglas-fir forest; mountain mahogany--oak scrub; juniper-pinyon woodland; and open grassland. Vegetation represents a range of seral conditions. Elk, mule deer, black bear, and mountain lion are common large mammals. High gradient perennial streams with boulder, cobble, and bedrock substrates. Precipitation ranges from 18-38 inches annually with deep winter snowpack. 50-110 frost free days. High temperatures averages from 30°F to 70°F and winters are cold. Fire, insects, and disease are principal sources of natural disturbance and expansive aspen stands cover areas where stand replacing fires burned in the past (Griffith et al. 2006, McNab et al. 1996)

Mogote-San Antonio (331Jc subsection)

Social Component

Landforms include valley, lowland, and elevated plains and hills. This Section was once characterized by bison and large carnivores such as the gray wolf and grizzly bear. These species have been reduced, primarily at the hand of man, yet occasionally are still reported in the area. Currently, large ungulates include Rocky Mountain elk, mule deer, and antelope; cougar, black bear, and coyotes comprise the large predator component throughout the Section. These areas are important for wildlife habitat, summer livestock grazing, timber production, and recreation. US Highway 285 parallels the eastern edge through Tres Piedras and mining operations to the north on private land. The level of development generally decreases to the west. The most dominant feature in this area is the 10,908-foot San Antonio Mountain which houses a significant electronic site at its peak. The rock outcrop around Tres Piedras is a unique geologic feature and is popular with climbers.

Ecological Component

Vegetation is mostly ponderosa pine forest. Understories may include Gambel oak. Blue spruce occurs on mesic sites. Douglas-fir and white fir forests and small areas of aspen are found at higher elevations. Grama, galleta and sand dropseed grasses and Great Basin big sagebrush are found in ustic soil moisture regimes and some cottonwood and willow along riparian corridors. Vegetation represents a range of seral conditions. Topography is low mountain ridges, slopes, and outwash fans. Moderate to high gradient perennial streams with boulder, cobble, and bedrock substrates. Precipitation ranges from 16-29 inches annually with deep winter snowpack. 70-110 frost free days. High temperatures averages from 36°F to 78°F and winters are cold.

Brazos (M331Gk subsection)

Social Component

This area includes many small farms, ranches, and private holdings. A large portion is in the Vallecitos Federal Sustained Yield Unit dedicated to timber production. Most of the grassland and much of the open woodland is grazed. Some small valleys are irrigated. Recreation, grazing, hunting, and timber harvest are important land uses. The Continental Divide National Scenic Trail traverses the western edge of the Carson NF in this area passing through the Canjilon Lakes area to Martinez Canyon. The Hopewell Lake, Trout Lakes, Canjilon Lakes, and El Rito Campgrounds are all popular for day use and camping. The Tusas Box is a prominent, steep-walled, scenic canyon.

Ecological Component

Topography is high mountains with steep slopes to the west, sloping to low mountain ridges, slopes, and outwash fans to the east. Vegetation in higher elevations is Englemann spruce, corkbark fir or subalpine fir, often interspersed with aspen groves or mountain meadows. Some areas have limber pine and Rocky Mountain bristlecone pine. Douglas-fir, white fir, and southwestern white pine at lower elevations transition to ponderosa pine forest and some areas with pinyon pine or junipers. Understory may include Gambel oak and mountain mahogany. Vegetation represents a range of seral conditions. Moderate to high gradient perennial streams with boulder, cobble, and bedrock substrates. Precipitation ranges from 16-40 inches annually with deep winter snowpack. 50-110 frost free days. High temperatures averages from 30°F to 78°F and winters are cold. Fire, insects, and disease are principal sources of natural disturbance and expansive aspen and oak stands cover areas where stand replacing fires burned in the past (Griffith et al. 2006, McNab et al. 1996)

Comanche (331Jb subsection)

Social Component

Rolling to flat plateau above the Rio Grande Gorge. This Section was once characterized by bison and large carnivores such as the gray wolf and grizzly bear. These species have been reduced, primarily at the hand of man, yet occasionally are still reported in the area. Currently, large ungulates include Rocky Mountain elk, mule deer, and antelope. This area provides wildlife habitat, summer low density livestock grazing, and fuelwood.

Ecological Component

This is the dry, flat valley of the Taos Plateau made up of quaternary colluvium with valley-fill alluvium and basalt flows. Vegetation is scattered juniper and pinyon-juniper woodland, with big sagebrush with winterfat and rabbitbrush, some grassland. Vegetation represents a range of seral conditions. Mostly ephemeral and some intermittent streams. Precipitation ranges from 11-15 inches annually with deep winter snowpack. 100-150 frost free days. High temperatures averages from 38°F to 86°F and winters are cold. (Griffith et al. 2006, McNab et al. 1996)

Mesa Shrublands (M331Gk subsection)

Social Component

This area includes many small towns surrounded by irrigated pastures and farms in small river valleys. Most of the grassland and much of the open woodland is grazed. Recreation and grazing are important land uses in the uplands. In river valleys, uses are pasture, cropland, orchards, vineyards, livestock grazing, and more urban. The Continental Divide National Scenic Trail traverses the western edge of the Carson NF in this area crossing into the Chama River Canyon Wilderness and onto the Santa Fe National Forest. The Echo Amphitheater and Continental Divide National Scenic Trail trailhead along Highway 84 are the most popular developed recreation sites. The Ghost Ranch Center and newly transferred Piedra Lumbre site attract, or have the potential to attract, many visitors to the lower elevation sandstone cliff portion of this area for hiking, painting, and photography in the steep, rugged canyons.

Ecological Component

Muli-colored red and tan sandstone cliffs contrasting with the greens of sagebrush, pinyon juniper, and ponderosa pine characterize the area. In the fall riparian vegetation adds breathtaking colors to the landscape. Rugged canyons and badland rock outcrops along with the vegetation mix provide for

distinctive scenic attractiveness in much of the subsection. Vegetation is pinyon-juniper woodlands, sagebrush and Gambel oak woodlands transitioning to bosques of cottonwood and willow in lowlands. Some areas have limber pine and Rocky Mountain bristlecone pine. Vegetation represents a range of seral conditions. Moderate to high gradient perennial, intermittent, and ephemeral streams with cobble, gravel, and sandy substrates feeding river channel and floodplain, with low terraces, levees along the Rio Chama. Precipitation ranges from 8-20 inches annually with deep winter snowpack. 90-190 frost free days. High temperatures averages from 40°F to 92°F. (Griffith et al. 2006, McNab et al. 1996)

Jicarilla (313Be and 313Bd subsections)

Social Component

Although Paleo-Indian and Archaic hunting and gathering people utilized this Section for thousands of years, it was the ancient puebloan farmers who left the most striking marks upon the land. Their settlements were located near water in or adjacent to pinyon-juniper woodlands, which offered abundant plant and animal resources used to supplement their crops. Most areas were somewhat marginal for agriculture, and communities continued to utilize nearby mountains and lower elevation areas for hunting and gathering activities. Paleontological studies indicate that the short duration of many sites may have been related to the need to re-locate due to depletion of wood resources needed for fuel and building materials. Local population pressure and a long period of drought are considered factors in the abandonment of most of this unit by the early 1300's and the subsequent aggregation of pueblo populations at Hopi, Zuni, and along the Rio Grande.

At the time of Spanish contact, the area was largely uninhabited except for the Hopi villages. Early Navajo and Apache and Ute peoples used the area for hunting, gathering, and some horticulture. Spanish use of the area was limited, and it was not until the mid-1800's that the American government led campaigns against the Navajo people and opened the area for settlement. Overgrazing by sheep and a natural period of downcutting around the turn of the century contributed to the erosional characteristics visible today. Coal, oil, and gas resources in the northern portions of the Section have been exploited in boom-and-bust cycles. Today the area is largely rural, with no sizable towns. Grazing, agriculture, mineral development, and tourism contribute to the economy.

Ecological Component

Topography is mesas, low mountain hills, ridges, and footslopes. Geomorphic processes active in this area are deep canyon formations as the result of plateau dissection. Major landforms are canyonlands, plateaus, plains, and hills. Vegetation is evergreen woodland and shrubland with one-seed, Rocky Mountain, and Utah junipers at lower elevations and pinyon pine and some ponderosa pine at higher elevations representing a range of seral conditions. Moderate to high gradient perennial, intermittent, and ephemeral streams with cobble, gravel, and sandy substrates. Precipitation ranges from 12 to 29 in annually, with more than half of the precipitation falling during the winter. Temperature averages 37 to 85°F and winters are cold. The growing season lasts 90 to 140 days. (Griffith et al. 2006, McNab et al. 1996)

Scenic class

Scenic classes have been mapped for the Carson NF (Figure 1) following national mapping protocols (USDA FS 1995). Scenic classes are the result of the combination of the three categories of scenic attractiveness with the landscape sensitivity and importance (landscape visibility) as outlined in the scenic class matrix found in the Landscape Aesthetics Handbook (USDA FS 1995). The combination of these

elements results in a numerical range of scenic classes based on the diversity of landscape elements and the sensitivity and importance of the landscape.

There are up to seven values for scenic classes. The inventory ratings indicate the scenic value of landscape areas, irrespective of the existing scenic integrity inventory or desired conditions. Generally scenic classes 1 and 2 have high public value for scenery, classes 3 through 5 have moderate public value for scenery, and classes 6 and 7 have low public value scenery (USDA FS 1995, USDA FS 2020)[3].

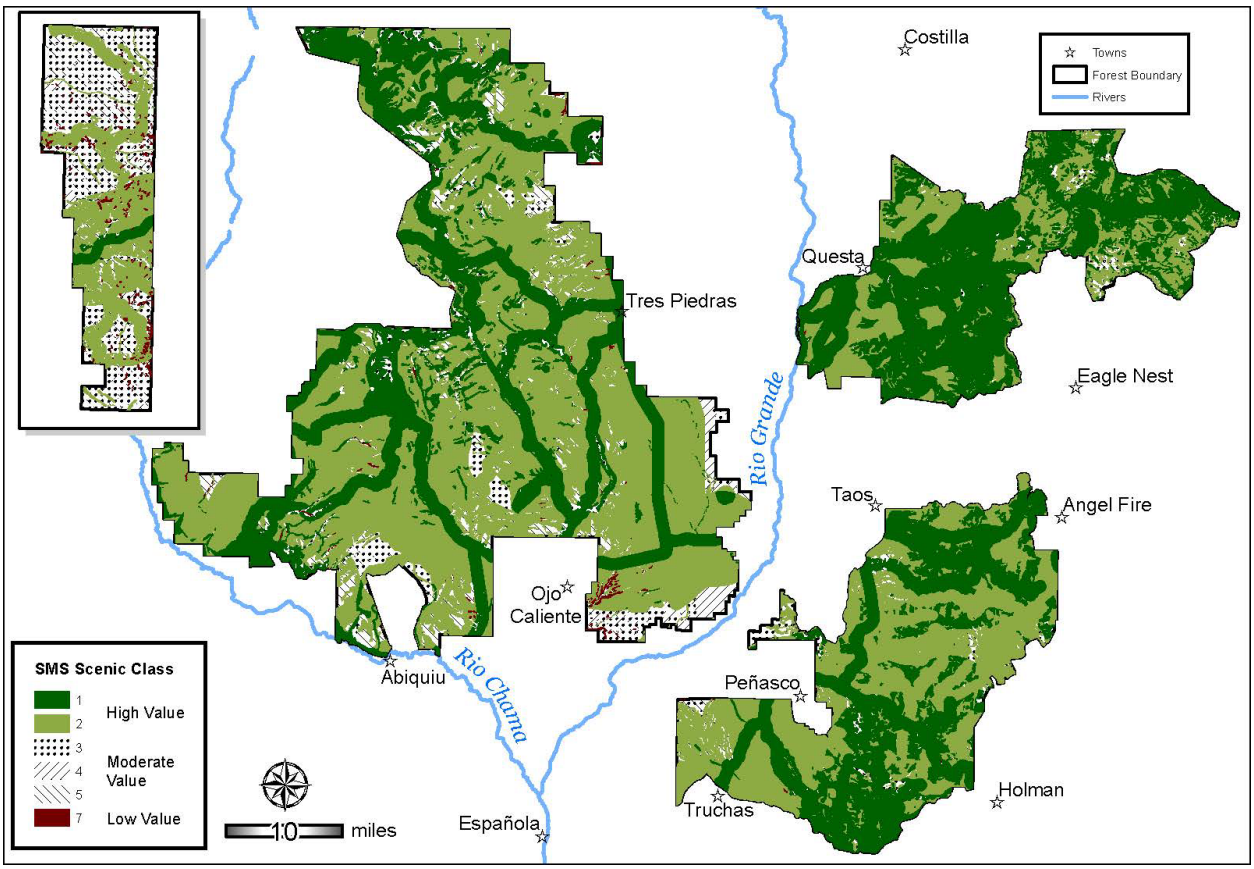

Figure 4. Scenic classes on the Carson NF

Scenic Integrity Objectives

Scenic integrity objectives (SIO) provide guidance for managing scenic resources. They describe the degree to which a landscape and its scenic character is visually perceived to be "intact". A landscape with intact attributes is considered to have higher scenic integrity. Landscapes with more noticeable deviations in their scenic attributes have lower scenic integrity. Integrity ranges from very low to very high. Desired SIO are described in the Carson NF land management plan (FW-SCEN-G-2). Very low integrity is generally not desired on the Carson NF.

[3] This description is from USDA FS 2020 which also includes detailed, updated mapping direction.

Mapping of SIO began with the map of existing scenic integrity ratings[4]. SIOs were first mapped according to the range of possible objectives that are consistent with plan direction for an area. Ranges were developed based on seventeen factors:

Scenic Integrity Objectives

ROS Class	Very High	High	Moderate	Low	Very Low
Primitive (P)	Norm	Inconsistent	Unacceptable	Unacceptable	Unacceptable
Semi-Primitive Non-Motorized (SPNM)	Fully Compatible	Norm	Inconsistent	Unacceptable	Unacceptable
Semi-Primitive Motorized (SPM)	Fully Compatible	Fully Compatible	Norm (1)	Inconsistent	Unacceptable
Roaded Natural-Appearing (RN)	Fully Compatible	Norm	Norm	Norm (2)	Inconsistent(3)
Rural (R)	Fully Compatible	Fully Compatible	Norm	Norm (2)	Inconsistent(3)
Urban (U)	Fully Compatible	Fully Compatible	Fully Compatible	Fully Compatible	Not Applicable

(1) Norm from sensitive roads and trails.
(2) Norm only in middleground-concern level 2 (Mg-2), where a Roaded Modified subclass is used.
(3) Unacceptable in Roaded Natural-Appearing and Rural where a Roaded Modified subclass is used. It may be the norm in a Roaded Modified subclass.

Figure 5. Graphic from the Landscape Aesthetics Handbook (USDA FS 1995, Figure F-2) showing the relationship between recreation opportunity spectrum classes and scenic integrity objectives

1. Compatible SIO and recreation opportunity spectrum combinations. SIO ranges were assigned according to those recreation opportunity spectrum classes that are either fully compatible or normative (Figure 2).

2. Areas that not included in the wilderness inventory (smaller than 5,000 acres or contain improvements) should not have high or very high SIOs.

3. Areas that are classified as suitable for timber production should not have high or very high SIOs.

4. The Vallecitos Federal Sustained Yield Unit (VFSYU) should not have high or very high SIOs.

5. Developed recreation sites should not have high or very high SIOs.

6. Developed Summer and Winter Resorts (DEVRES) should not have high or very high SIOs.

[4] USDA FS Carson (United States Department of Agriculture, Forest Service, Carson National Forest). 2015. Assessment Report of Ecological, Social, and Economic Conditions, Trends, and Sustainability. Taos, NM. p. 369.

7. Grassland Maintenance areas (GMMA) should not have high or very high SIOs.

8. Inventoried Roadless Areas (IRA) should not have low SIOs.

9. Designated Wilderness (WILD) must have very high SIOs.

10. Recommended Wilderness (RWMA) cannot have low or moderate SIOs.

11. Wild classification Wild and Scenic Rivers (EWSR) must have very high SIOs.

12. The Jicarilla Natural Gas area (JICMA) should generally have moderate or low SIOs except in the five areas of resource concern identified in the plan.

13. The corridor around National Trails (NTRL) should not have low SIOs.

14. The Valle Vidal (VVMA) should not have low SIOs.

15. The San Antonio area (SAMA) should not have low SIOs.

16. Research Natural Areas should have very high SIOs.

17. The foreground viewshed up to 0.5 miles from the Continental Divide National Scenic Trail must have high SIOs.

The seventeen factors were addressed in order. Ranges were assigned according to factor 1, then narrowed according to factors 2-8, then expanded according to factors 9-11. Factors 12-16 were assessed qualitatively and resulted in adjustments where deviations were obvious and significant but were not strictly applied like other factors. Finally, ranges were narrowed according to factor 17. For example, the Valle Vidal Management Area is mostly classified as moderate to very high. However, there are inclusions where the SIO range could include objectives for low integrity (low-moderate or low-high) along Forest Road 1950 and in developed campgrounds.

In many areas this process resulted in a single SIO classification. Where a range of possible SIOs remained, the lowest class was selected for the final map because the low end of the range represents the maximum acceptable level of alteration for the area.

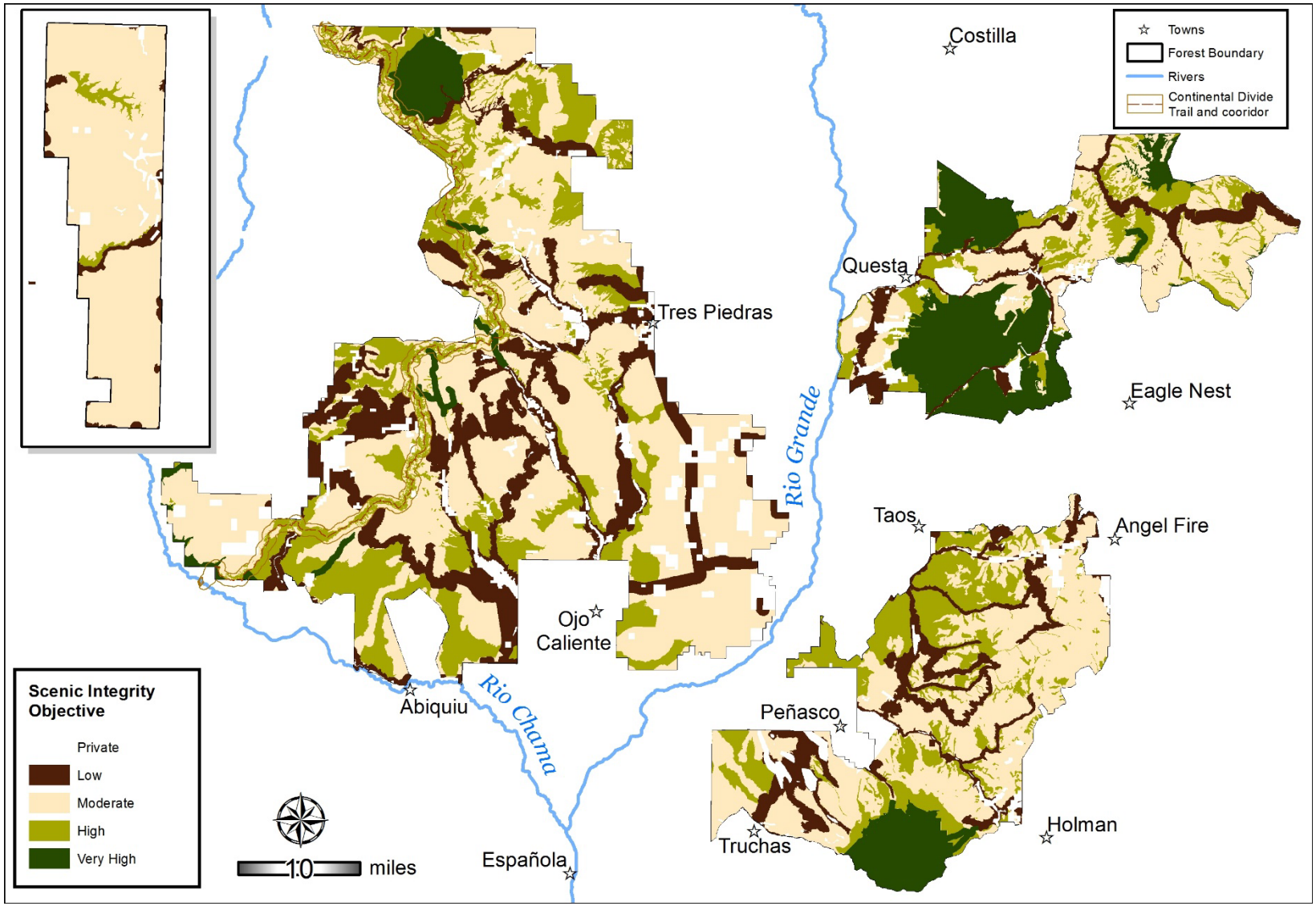

Figure 6. Scenic integrity objectives for the Carson National Forest.

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