



Capitan Mountains Wilderness Character Narrative



“Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher ‘standard of living’ is worth its cost in things natural, wild, and free.”

– *Aldo Leopold*

Capitan Mountains Wilderness Character Narrative

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ON THE COVER

Crest of the Capitan Mountains at sunset, as viewed from Capitan Peak.
(NM WILD/TOBIAS NICKEL)

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Executive Summary

This document provides a wilderness character narrative for the Capitan Mountains Wilderness administered by the Lincoln National Forest, Smokey Bear Ranger District. A wilderness character narrative is a qualitative and holistic description of what makes a particular wilderness unique and special, organized by each quality of wilderness character (Landres et al. 2015). The narrative is a foundational document intended to identify fundamental wilderness resources, determine wilderness threats, and acknowledge important intangible values associated with the wilderness. A well-crafted narrative complements and enhances the quantitative wilderness character monitoring.

In providing such a wilderness character narrative, this document assists the Forest Service in meeting its Wilderness Stewardship Performance goals. Wilderness Stewardship Performance is a framework to track how well the Forest Service is fulfilling its primary responsibility under the Wilderness Act – which is to preserve wilderness character. Under this framework, specific wilderness stewardship accomplishments contribute to overall improvement in performance scores for individual wilderness areas. A wilderness character narrative is one of the required components outlined in the *Wilderness Stewardship Performance Guidebook* (Forest Service 2019c).

Beyond improving the performance score of the Capitan Mountains Wilderness, this document seeks to inform and empower land managers to make carefully-weighted wilderness stewardship decisions that respect and preserve the wilderness character of this wilderness for generations to come.

Defining Wilderness Character

The Wilderness Act of 1964 (16 U.S.C. § 1131-1136) was passed by a nearly unanimous vote in the United States Congress to protect natural lands from the seemingly endless threats of “expanding settlement and growing mechanization.” The primary mandate of the Wilderness Act is given in Section 4(b) and states that “each agency administering any area designated as wilderness shall be responsible for *preserving the wilderness character of the area*” [emphasis added]. In order to establish a common understanding of this directive, wilderness character was formally defined by an interagency monitoring team (representing the Forest Service, Fish and Wildlife Service, National Park Service, and Bureau of Land Management) as follows:

“Wilderness character is a holistic concept based on the interaction of (1) biophysical environments primarily free from modern human manipulation and impact, (2) personal experiences in natural environments relatively free from the encumbrances and signs of modern society, and (3) symbolic meanings of humility, restraint, and interdependence that inspire human connection with nature. Taken together, these tangible and intangible values define wilderness character and distinguish wilderness from all other lands.” (Landres et al. 2015)

Wilderness character encompasses the five qualities that are described in the definition of wilderness from Section 2(c) of the Wilderness Act. Together, these five qualities are used to monitor how management actions, impacts from visitor use, and external factors affect wilderness character over time. The five qualities apply nationally to all wilderness areas – regardless of their size, location, administering federal agency, or other unique place-specific attributes – because they are rooted in the legal definition of wilderness.



Capitan and Sunset Peaks as seen from Fort Stanton (NM WILD/JESSE FURR).

Untrammeled

Wilderness is “. . . an area where the earth and its community of life are untrammeled by man”

- Wilderness ecological systems are essentially unhindered and free from the intentional actions of modern human control or manipulation when the Untrammeled Quality is preserved.

Natural

Wilderness “. . . is protected and managed so as to preserve its natural conditions”

- Wilderness ecological systems are substantially free from the effects of modern civilization when the Natural Quality is preserved.

Undeveloped

Wilderness is “. . . an area of undeveloped Federal land . . . without permanent improvements or human habitation”

- Wilderness retains its primeval character and influence and is essentially without permanent improvement or modern human occupation when the Undeveloped Quality is preserved.

Solitude or Primitive and Unconfined Recreation

Wilderness “. . . has outstanding opportunities for solitude or a primitive and unconfined type of recreation”

- Wilderness provides opportunities for visitors to find solitude and to challenge themselves with a primitive and unconfined type of recreation when the Solitude or Primitive and Unconfined Recreation Quality is preserved.

Other Features of Value

Wilderness “. . . may also contain ecological, geologic, or other features of scientific, educational, scenic, or historical value”

- Other tangible features of scientific, educational, scenic, or historical value in wilderness add to wilderness character when they are preserved.

In addition to these qualities of wilderness character, wilderness also has important intangible aspects that are difficult or impossible to quantify or monitor. These intangible aspects arise from the interactions humans have with the biophysical elements of wilderness. They can include the scenic beauty, spiritual value, immensity of an area, and opportunities for self-discovery, self-reliance, and challenge that come from wilderness settings.

Wilderness character may change over time and may be improved or diminished by the actions or inaction of land managers. The challenge of wilderness stewardship is that decisions and management actions taken to protect one quality of wilderness character can often degrade another quality. In addition, the cumulative result of seemingly small decisions and actions may cause a significant gain or loss of wilderness character over time. Because of this complexity, preserving wilderness character requires that agency staff document the management decisions made for wilderness and monitor the impacts of those decisions.

Introduction to the Capitan Mountains Wilderness

Geographers like to point out that the Capitan Mountains are among the nation's few east-west trending ranges. Historians remind us that these mountains gave us Smokey Bear and that this landscape was the backdrop for the infamous Lincoln County War and many exploits by Billy the Kid. The Mescalero Apache, whose territory once encompassed much of southeastern New Mexico and northern Mexico, share that the Capitan Mountains are present in their storytelling traditions. Biologists teach us about the rich diversity of flora and fauna adapted to this mountain range. In turn, this ecological diversity attracts recreationists including hunters, equestrians, hikers, climbers, and backpackers, who are willing to brave the steep terrain in search of inspiration, tranquility, and solitude. What these visitors will likely remember about the Capitan Mountains are long miles of challenging trail through some of the most rugged country in the American Southwest. Standing atop the range's 10,179-foot Capitan Peak, visitors are rewarded with spectacular 360-degree views, spanning the snow-capped Sierra Blanca to the west, the Sacramento Mountains to the south, the Sangre de Cristos to the north, and the Great Plains as they appear to ripple indefinitely east. Contemplating this vast, open landscape sparks an undeniable sense of humility and smallness in the observer and might also promote feelings of liberation or transcendence. Untamed and rugged, the Capitan Mountains encapsulate the great promise made to the American people by the Wilderness Act of 1964.



Panoramic views observed from the crest of the Capitan Mountains (NM WILD/TOBIAS NICKEL).

Geologic Setting of the Capitan Mountains Wilderness

The Capitan Mountains lie within the Basin and Range physiographic province, a large swath of land that stretches throughout much of the western United States and northern Mexico. This region is characterized by north-south trending mountain ranges that contrast and accompany parallel running valleys which lend a stripe-like aspect to the landscape. The east-west trending Capitan Mountains stand out dramatically from this overarching pattern.

The Capitan Mountains were formed approximately 26 million years ago when a 20-mile-long, 4-mile-wide mass of magma rose from the Earth's core (Allen and McLemore 1991). The intense pressure of rising magma was relieved by way of an east-west lying fault, creating the east-west trending mountain ridge that exists today. The magma eventually cooled, creating the Capitan pluton, a hardened mass of magma beneath the earth's surface. As the pluton continued to push toward the surface, it heaved the overlying sedimentary layers into a dome 10,000 feet above sea level. Over time, surface sedimentary rocks eroded away to the trace remnants that cap high points, leaving the pluton to tower more than 3,000 feet above the surrounding countryside.

During Earth's most recent ice age, snow and ice covered the rocky crest of what is now the Capitan Mountains Wilderness. This volume of snow and ice melted and infiltrated rocks only to freeze again, welding together rock-ice masses very similar to glaciers (Julyan 2016). As these "rock glaciers" slowly flowed down the north and south flanks of the range, warmer times came, and the ice eventually melted. Fields of rock were left behind, creating the large talus slopes that are characteristic of the Capitan Mountains. Over time, lichen colonies formed on these exposed rocks, contributing to the mottled and jagged landscape. Today, three main peaks—Capitan Peak, Summit Peak, and Padilla Peak—exist to tell this unique geologic history.



Talus fields dot the slopes of the Capitan Mountains (NM WILD/TOBIAS NICKEL).

Geographic Setting of the Capitan Mountains Wilderness

The Capitan Mountain range is made up of two distinct landforms, West Mountain and the Capitan Mountains. These topographic features are separated by a low pass known as the “Capitan Gap.” The eastern portion of the range makes up a majority of the designated wilderness area, which is surrounded on almost all sides by non-wilderness Forest Service land (Figure 1). The Capitan Mountains Inventoried Roadless Area (14,069 acres) also adjoins the wilderness along its southwestern boundary. Inventoried Roadless Areas were determined by the Forest Service to meet the criteria for wilderness designation and are managed under the 2001 Roadless Rule, which prohibits road construction and timber harvesting (Forest Service 2001). The combined complex formed by the Capitan Mountains Wilderness and the Capitan Mountains Inventoried Roadless Area protects 49,136 acres of undeveloped, federal land.

The Capitan Mountains constitute a pocket of wild lands that is part of the larger landscape of south central New Mexico, a mosaic of state and federal lands, rural communities, and tribal lands. Southeast of the Capitan Mountains, beyond the Rio Bonito, lies the Sierra Blanca, home to the only other wilderness area on the Lincoln National Forest, the White Mountain Wilderness. The Sierra Blanca marks the beginning of the Sacramento Mountains, which run north-south through the Mescalero Apache Reservation and past the city of Alamogordo. Further south and west, across the vast lava flows of the Carrizozo Malpais, lie the expansive gypsum sand dunes of White Sands National Monument. East of the Capitan Mountains, long stretches of plains desert ecosystem extend far into Texas. This diverse assortment of largely undeveloped lands surrounds and buffers the Capitan Mountains Wilderness.

There are three incorporated municipalities in the vicinity of the Capitan Mountains Wilderness: Located directly southwest of the wilderness, the Village of Capitan with a population of 1,321 people; the Village of Ruidoso with a population of 7,740 people, approximately 25 aerial miles southwest; and the town of Carrizozo with a population of 878, approximately 30 aerial miles west (United States Census Bureau 2019). The larger city of Roswell (population 48,163) is located about 65 aerial miles east along US-380. In addition, there are small, unincorporated communities nearby, including Lincoln to the south and Arabella to the east.



View of the southern aspect of the Capitan Mountains (NM WILD/TOBIAS NICKEL).

Capitan Mountains Wilderness

Smokey Bear Ranger District - Lincoln National Forest

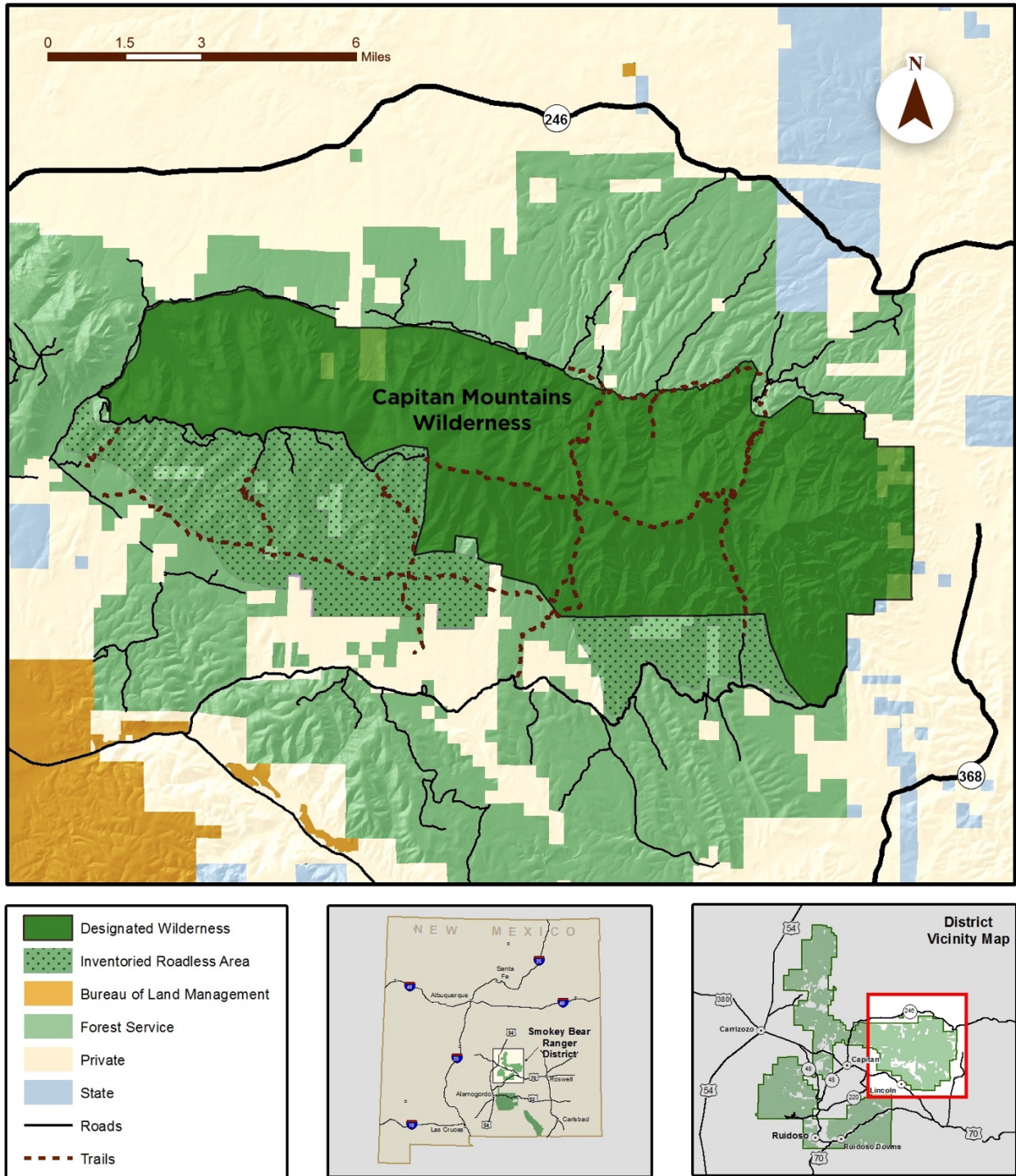


Figure 1. Map of the Capitan Mountains Wilderness.

Cultural and Historical Setting of the Capitan Mountains Wilderness

Humans have inhabited the mountains, forests, and river valleys surrounding the Capitan Mountains for thousands of years. Paleo-Indian, Archaic, Puebloan, Athapaskan, Spanish, Mexican, and American cultures and communities have all left their imprint on the land (Kaufmann et al. 1998). Studying the history of the human populations that have lived in the area is critical to appreciating the cultural context that the Capitan Mountains Wilderness is a part of. Knowing this history also makes the social-ecological forces that have shaped the landscape more apparent.

The earliest human occupation of the region began during the Paleo-Indian Period, which dates from around 10,000 BCE to about 5,500 BCE. The first Paleo-Indian occupants were nomadic hunters and gatherers. Because the late Pleistocene climate was cooler and wetter, resources were likely more plentiful at lower elevations. As a result, Paleo-Indians' use of mountain areas appears to have been minimal, with most Paleo-Indian sites (usually consisting of caves and rock shelters) recorded in the lowlands of south central New Mexico (Tainter 1981; Kelley 1984).

The change to a warmer, drier climate during the Archaic period (5000 BCE to 300 CE) caused people to migrate seasonally and move into the mountains where water was more readily available. The drier climate also led to a reduction in big game populations resulting in more supplementary plant foraging. Corn and beans first appeared during the Archaic Period, but in general, domesticated crops played only a minor role in food-sourcing (Cordell and McBrinn 2012).

The Pueblo Period was characterized by a shift to more sedentary lifestyles and a marked increase in population. Many Pueblo sites are found within the nearby Bonito, Ruidoso, and Macho river drainages (Forest Service 2019b). Towards the end of the Pueblo Period (approximately 1500 CE), the Athapaskan peoples of Apache and Navajo tribes began to migrate to the area. The Mescalero Apaches are the native people most closely identified with the Sacramento Mountains in more recent history. They are an Eastern Apache group whose traditional hunting and gathering range once encompassed an area loosely bounded by the Rio Grande, Rio Pecos, Sangre de Cristos, and the southeastern extent of the Chihuahuan desert (Robinson 2000).

Spanish explorers first entered what is now the American Southwest in the 1530s. The Spanish did not recognize indigenous claims to land and subjected native people to warfare, cruelty, torture, attempted subjugation, and enslavement. As colonization and western expansion in America continued, the Apache fought to protect their land. Many conflicts erupted between the Apache and Spanish, Mexican, and American settlers (Kaufmann et al. 1998).

Throughout the early part of the 19th century, western expansion of the U.S. increased the level of American influence over the Southwestern region. Following disputes over the annexation of Texas, the U.S. invaded Mexico in 1845 and seized New Mexico by military force the following year. In 1848, the Treaty of Guadalupe-Hidalgo was signed to resolve direct conflict and established New Mexico as a territory of the U.S. (Forest Service 2019b).

Fort Stanton was built by the U.S. government just southeast of the Capitan Mountains as a headquarters for military campaigns against the Mescalero Apache between 1855 and 1880. The

Capitan Mountains are widely thought to be named for Saturnino Baca, an army captain stationed at Fort Stanton and one of the founders of Lincoln County (Cozzens 2012). However, the range was also called the “Sierra Capitan” by Spanish explorers in the late 1700s (Julyan 1998), so the true origin of the name remains unknown. After years of guerilla warfare, U.S. troops were successful in their attempts to forcibly remove the Apache from the area. After being transported around the country as prisoners, the Apache were eventually able to successfully petition for resettlement on the Mescalero Apache Reservation, centered around the Sacramento Mountains, in 1883.

With the protection of troops at Fort Stanton, homesteading expanded along the Hondo and Ruidoso valleys as well as around the base of the Capitan Mountains. The Homestead Acts from 1860 through 1876 led to the development of small farms in the region, and ranching became a major economic activity. During the 1870s, the fort’s garrison marched three times to quell local disturbances that threatened to explode into civil war. The first two (the Horrell War and the Tularosa Ditch War) were conflicts between Anglo ranchers and Hispanic farmers, and the third was the Lincoln County War, a conflict between rival factions of cattle ranchers, including Billy the Kid. By the 1890s, the Army’s need for Fort Stanton ended and it was abandoned (Forest Service 2019b).

The discovery of coal, and the subsequent construction of railroads, brought an influx of American frontiersmen to the region. One man, Seaborn T. Gray, homesteaded in the area around 1884 (Cozzens 2012). The village of Gray, which eventually became known as Capitan, sprang up at the foot of the mountains in response to the discovery of coal. As miners flocked to the area, the town of Capitan’s population reached a high of 2,000 people but dropped off after the mining boom ended in 1905 (Cozzens 2012). Those who remained in the area made a living primarily by grazing livestock.

The Forest Service did not play a role in the history of the area until the 20th Century. The Lincoln Forest Reserve was established in 1902 with an office in Capitan, New Mexico. In the ensuing years, five additional forest reserves were formed. These were subsequently combined until 1917, when the entire area became known as the Lincoln National Forest (Forest Service 2019b). The initial establishment of Forest Service jurisdiction over the Capitan Mountains had an impact on its use by Anglo, Hispanic, and Native American communities, with the greatest effect being the regulation of cattle, sheep, and goat grazing along with fuel wood cutting. Early forest rangers lived a rough and sometimes dangerous life enforcing regulations, rounding up trespassing cattle, and putting out fires, mostly on horseback. Mostly alone, they covered huge areas of rough country in all weather and sometimes encountered violent opposition to their mission (Cozzens 2012).

The Lincoln National Forest also benefited from the work of the Civilian Conservation Corps, established in 1933 to alleviate unemployment during the Great Depression. Young men of the Civilian Conservation Corps were stationed near Capitan from 1933-1935 and tasked with erosion control, road construction, general forestry, and fire suppression (Cozzens 2012). Additionally, an Unemployed Girls Education Camp, one of very few, operated between 1935 and 1940 as Camp Capitan, at the former location of the Civilian Conservation Corps camp. Camp Capitan was transformed yet again in 1941, when it became the Old Raton Ranch detention camp to hold the Japanese-American population of railroad workers and their families from Clovis, New Mexico (Forest Service 2019b). Today the site is open to the public as Baca Campground.

Designation of the Capitan Mountains Wilderness

Wilderness preservation became a part of Forest Service policy in the 1920s when Aldo Leopold, Arthur Carhart, and other agency staff pushed to administratively protect areas from road building and development (Nash 2001). In 1929, five years after the Forest Service set aside the Gila as the nation's first wilderness, the agency enacted the L-20 Regulation to protect certain areas within the national forests as "primitive areas." In 1939, the Forest Service replaced the L-20 Regulation with the U Regulations. Written by renowned wilderness advocate Bob Marshall, these new regulations provided for the classification of areas as "wilderness" or "wild," depending on size. In these areas, there would be no roads or motorized transportation, no timber harvest, and no special use permits for hotels, lodges, or resorts.

Signed into law by President Lyndon B. Johnson on September 3, 1964, the Wilderness Act established the National Wilderness Preservation System, which at the time included 54 wilderness areas totaling 9.1 million acres. The Wilderness Act further called for a review of all primitive areas to determine their suitability for preservation as wilderness. Between 1967 and 1972, the Forest Service conducted a system-wide Roadless Area Review and Evaluation (RARE I). Opposition, spurred by conservation groups, to the way this original inventory was conducted led to RARE II, an updated inventory that sought to address the issues perceived in the original policy. The RARE II inventory was completed in 1979 and identified 62 million acres of roadless land across the National Forest System, 15 million of which were recommended for wilderness designation. The RARE II Final Environmental Impact Statement recommended that 38,110 acres of the Capitan Mountains were suitable for wilderness designation, while another 9,800 roadless acres were deemed unsuitable (Forest Service 1979).

The findings from RARE II informed the New Mexico Wilderness Act of 1980, which was signed by President Jimmy Carter to "promote, perpetuate, and preserve the wilderness character of the land, to protect watersheds and wildlife habitat, preserve scenic and historic resources, and to promote scientific research, primitive recreation, solitude, physical and mental challenge, and inspiration for the benefit of all the American people." The law added the Capitan Mountains Wilderness to the National Wilderness Preservation System. After the most recent acreage review, the Capitan Mountains Wilderness spans 36,034 acres (Forest Service 2019a). All of this wilderness is administered by the Smokey Bear Ranger District of the Lincoln National Forest.

Qualities of Wilderness Character

Untrammelled Quality

Wilderness is essentially unhindered and free from modern human actions that control or manipulate the community of life.

The remote and rugged terrain of the Capitan Mountains Wilderness makes it a difficult environment to tame. Wildlife ranges freely from the desert plains up the steep mountainsides. Talus fields remain in the same places they have for thousands of years, where slow-growing lichen colonies cover exposed rock surfaces. Summer monsoons materialize rapidly and unpredictably, unleashing torrents of rain that saturate vegetation and soils in minutes. In winter, snow regularly blankets the mountains, accompanied by a soft silence that is seldom experienced in the bustling mechanized world. Springs of groundwater fill and dry, only to refill again at a pace dictated by seasonal rainfall and snowmelt. Meanwhile, unstoppable forces of erosion continue to sculpt the mountains' character as they have for eons. With patience and persistence, only comprehensible from the perspective of geological time, Mother Nature is the incontestable architect of this sublime landscape.

Humans have also played a role in shaping the land surrounding the Capitan Mountains, although on a far more subtle scale. Humans first arrived in this region approximately 12,000 years ago (Forest Service 2019b). A patient study of the archaeological record reveals that Paleo-Indian, Archaic, Puebloan, and Athapaskan peoples engaged in hunting and foraging activities in the Capitan Mountains and foothills. European exploration began in the 16th century and grew into the 19th century. The El Paso & Northeastern Railroad's arrival accelerated this settlement, opening the region to entrepreneurs who invested in economic ventures, such as mining, logging, and ranching. However, these activities were mostly confined to areas outside of the present-day wilderness. While civilization expanded its reach in south central New Mexico, the Capitan Mountains remained shrouded in mystery, with uncanny tales told by those who dared to enter the unforgiving landscape (McDonald 1985).

Even today, relatively little is known or written about the Capitan Mountains, which have largely escaped the whirlwind of economic growth and development that is overwhelming the forces of nature throughout much of the American Southwest. Indeed, the Capitan Mountains are likely one of the least visited wilderness areas in the continental United States. Limited access and trails, combined with a lack of water and challenging topography, have all contributed to preserve outstanding opportunities for solitude and primitive and unconfined recreation in this remote wilderness. As a result, natural processes in the Capitan Mountains Wilderness have largely remained unhindered and free from the intentional actions of modern human control and manipulation.

Fire suppression likely represents the biggest threat to the untrammelled quality of the Capitan Mountains Wilderness. Over a century of wildland fire suppression has altered the natural fire regime in the mountains' woodland communities. Vegetation changes caused by past fire suppression have generally increased live and dead fuel loading, creating potentially hazardous arrangement of close standing, burnable vegetation, or ladder fuel. Ladder fuel helps fires ascend taller forest trees, increasing the risk of higher intensity crown fires. If subjected to crown fire, large forest landscapes

may be converted to shrub communities, watershed and soil processes can be impacted, and other ecosystem values altered. As an example, the Peppin Fire of 2004 was a lightning-caused fire that burned with high intensity and almost covered the entirety of the wilderness area (Forest Service 2019b). While suppressing fires is necessary to protect the safety and property of nearby communities, it interferes with the land's ability to respond to natural disturbances on its own terms. Under current fire management policies, large, potentially dangerous fires are usually suppressed, while smaller, naturally-ignited fires are often left to burn in the wilderness under supervision in an effort to preserve the untrammled quality. In 2019, the Pine Lodge Fire burned over 15,000 acres on the northern slopes of the Capitan Mountains. While crews suppressed the fire outside of wilderness to prevent its spread, the fire was largely allowed to play its natural role inside the wilderness.

Another present-day, agency-authorized land use that takes place within the Capitan Mountain Wilderness is livestock grazing. Four grazing allotments exist within the boundaries of the wilderness totaling approximately 3,200 acres (Forest Service 2019b). Current permits allow for approximately 550 head of cattle to graze, although a significant portion of these allotments are outside of the wilderness boundary. Unpermitted grazing by cattle occurs in other parts of the wilderness where allotments lie adjacent and where fences are not present or maintained. However, the steep, rocky terrain and lack of water render most of the Capitan Mountains Wilderness unsuitable for livestock, and grazing impacts are minimal or non-existent at higher elevations.

Until now, the remoteness and topographic character of the Capitan Mountains provided an ecological refuge, largely shielding the native flora and fauna from human impacts. However, this seemingly protected wilderness does not exist in a vacuum, and the biotic community can be fragile and sensitive to external pressures. As climate change progresses, ecological processes are expected to deviate from their range of natural variation. Given the high likelihood of increasing drought, temperature extremes, and other unforeseen consequences of climate change, new pressures to trammel are expected to surface. Exotic invasive species are expected to continue displacing native communities and become more prolific. Changes in vegetation composition and water availability will inevitably affect the animal communities that depend on them. Many destabilizing factors of climate change are still unknown and will likely cause environmental changes that degrade wilderness character (Walther et al. 2002).

In response to changing environmental conditions, as well as other threats, wilderness managers will have to carefully weigh decisions about when to trammel and when to exercise restraint. Any authorization of future trammeling actions should involve careful consideration for this wilderness quality and should only be taken when truly necessary. Restraint and humility are key components of wilderness management, setting wilderness apart from all other public lands. These values should be at the forefront of wilderness planning and decision-making. Therefore, the Lincoln National Forest should continue to employ the Minimum Requirements Analysis process to evaluate each management decision within wilderness. If benefits to other aspects of wilderness character are being considered, the costs of trammeling should clearly be seen. As Howard Zahniser (1992) said so well, "We must remember always that the essential quality of the wilderness is its wildness."

Natural Quality

Wilderness maintains ecological systems that are substantially free from the effects of modern civilization.

With an elevation spanning from 5,500 to over 10,000 feet, the Capitan Mountains Wilderness supports a wide range of habitats in unusual proximity. The vegetation of the Capitan Mountains consists largely of intact, functioning native plant communities that vary from Chihuahuan desert to subalpine forest. At the lowest elevations, the desert grasslands are inhabited by creosote bush, apache plume, ocotillo, and several species of cacti, as well as corresponding grasses such as sand dropseed, mesquite grass, and burro grass. Moving into the foothills, one-seed juniper, alligator juniper, piñon pine, and scrubby grey oak sporadically break up the monotony of the flat desert. Desert shrubs such as apache plume and yucca still exist at this elevation alongside catclaw mimosa and skunkbush sumac. Kerr's milkvetch, a small flowering plant endemic to the area, can be found in dry arroyos on the southern slopes of the wilderness. Higher up in the mountains above 7,200 feet, a transition zone begins where ponderosa pines start to tower over 100 feet tall. Alligator and rocky mountain juniper are more apparent at these higher elevations, while one-seed juniper starts to dwindle. Gambel oak and rocky mountain maple also appear in this zone. As the mountains climb to 9,000 feet, ponderosa pines gradually give way to Douglas fir and white fir. Past this elevation, blue spruce, Engelmann spruce, and quaking aspens cover the mountains' crest.



Looking from Pancho Canyon toward the crest of the Capitan Mountains (NM WILD/TOBIAS NICKEL).

This range of floral communities provides habitat for a diversity of wildlife species. The desert grasslands are home to many mammals and reptiles that are adapted to the arid climate. Multiple species of mice, cotton rats, desert cottontails, black tail jackrabbits, roadrunners, and hog-nosed skunks scurry and scavenge on the desert floor for shelter and food. Rattlesnakes bask in the sun and wait to test their powerful reflexes on unsuspecting small mammals. As the desert starts to rise, piñon-juniper woodlands provide cover for coyotes and bobcats as they hunt for rock squirrels, gophers, and kangaroo rats. The transition zone is home to mule deer, elk, Mexican voles, and porcupines who feed on young ponderosa pines. Woodpeckers drum pines in search of insects, while red-tailed hawks, peregrine falcons, and bald eagles soar the skies in search of prey. At the highest elevations, black bears forage for wild berries amidst the spruce-fir ecosystem. The tree canopy provides threatened Mexican spotted owls with critical nesting cover, protecting their young from aerial predators. Sacramento Mountain salamanders, endemic to the region, also find suitable habitat within these forests. Meanwhile, mountain lions roam from low-elevation grasslands up to the mountain peaks on the hunt for deer and elk, all while remaining elusive to the human eye.

Much of this astounding biological diversity depends on the Capitan Mountains' clean air and water. Protected as a Class 1 Airshed under the Clean Air Act, the Capitan Mountains Wilderness contains some of the nation's least polluted air (Forest Service 2019b). Clean air is essential to ecosystem and human health and also allows for expansive views, thus protecting the scenic integrity of this wilderness. In this arid climate, however, water is a scarce and invaluable resource. The Capitan Mountains receive little snow in winter and rely on summer monsoons to replenish streams including Seven Cabins, Copeland, Pine Lodge, Michalles Canyon, West Lucero, and Peppin. Most drainages are on the north side of the range and historically were heavily grazed as well as subjected to extreme fires (Forest Service 2019a). As a result, survival of native fish, such as Rio Grande chub, Rio Grande cutthroat trout, headwater catfish, greenthroat darter, and longnose dace, is uncertain. In 2008, the New Mexico Department of Game and Fish reintroduced Rio Grande cutthroat trout in Pine Lodge Creek, making it the only population of this protected species on the Lincoln National Forest (Forest Service 2019a). Reintroduction initially showed positive results, but the current population status is unknown due to extended drought conditions and the recent Pine Lodge Fire.

A history of fire suppression, combined with drought and climate change, resulted in unnaturally large, high-intensity wildland fires, leading to devastating effects on the natural ecosystem including watershed degradation, soil erosion and sterilization, and unnaturally high tree mortality. The Peppin Fire of 2004, which burned approximately 65,000 acres, was an example of this type of fire. More recently, the 2019 Pine Lodge Fire burned over 15,000 acres on the northern slopes of the Capitan Mountains. While unnaturally large fires such as these can be detrimental to the natural quality of wilderness, wildfire still plays a vital role in the ecological health of mountain forests. Recognizing fire's intricate role in the ecosystem and seeking to balance competing management objectives, agency personnel will occasionally allow fires within the wilderness to burn under close watch in order to restore fire as a natural disturbance process and reduce fuel accumulation.



Looking north from the Capitan Peak Trail toward the Central New Mexico Plains with Chimney Rock in the foreground. Photos taken before and after the 2019 Pine Lode Fire (NM WILD/JESSE FURR).

In addition to increasing wildfire frequency and severity, climate change will impact nearly every aspect of natural systems in the Capitan Mountains. By 2050, temperatures in the Southwest are predicted to rise as much as 3°C (Seager et al. 2007; IPCC 2013; Kunkel et al. 2013). Higher temperatures, reduced snowpack, and longer droughts are expected to increase wildfire potential, disrupt nutrient, water, and carbon cycling, cause tree mortality, and increase intrusive insect outbreaks. Large amounts of insect mortality in ponderosa pine have already contributed to reduced interception of precipitation and increased peak flows, resulting in sedimentation and flooding (Forest Service 2019a). Upward shifts of species distributions will allow invasive exotic species to proliferate (Ikeda et al. 2014) and lead to unpredictable shifts in native communities (Walther et al. 2002). Arid environments like the Capitan Mountains are particularly sensitive to climate change and drought, as many species in these regions already live at the natural limits of their range (Monahan and Fisichelli 2014). Even subtle changes in these environments can cause catastrophic alterations in the abundance, distribution, and composition of biotic communities (Loehman 2010). Some species and habitats may even be extirpated from the wilderness (Rehfeldt et al. 2012).

The issue of climate change makes it apparent that the act of drawing boundaries alone is insufficient to protect wilderness character. The stunning natural beauty and rich biological diversity of the Capitan Mountains is interconnected with the expanding settlement and growing mechanization of the civilization that surrounds it. Therefore, an earnest attempt to safeguard these wilderness areas for future generations begins long before setting foot in wilderness and continues long after.



View of the Capitan Mountains' crest at sunrise (NM WILD/TOBIAS NICKEL).

Undeveloped Quality

Wilderness retains its primeval character and influence, and is essentially without permanent improvements or modern human occupation.

The landscape of the Capitan Mountains flows continuously, responding to stratigraphic, volcanic, and erosional forces. There are few straight lines and right angles symptomatic of the human touch. Climate and topography have repeatedly discouraged miners, loggers, shepherds, and other entrepreneurs from developing the present-day wilderness. Remnants of pioneer life are few and far between in the wilderness, telling stories of efforts to carve a living from the mountain slopes. As a result, the Capitan Mountains Wilderness is in many ways as primeval as it was in ancient times.

The few cabins in the wilderness have either been abruptly swept up in ravaging wildfires or are gradually fading into the background and being reclaimed by the forces of nature. Range improvements in the area are limited to one old spring development, two trick tanks, and fences in various states of disrepair. Recently, there was concern over the use of motorized vehicles via an unauthorized, user-created road to access the old spring development in Copeland canyon (Forest Service 2019). The Forest Service is proposing to place large boulders to block the user-created road and prevent motorized entry into the Capitan Mountains Wilderness.

The lack of roads and rugged topography sometimes necessitate the use of aircraft for administratively approved purposes, such as fire management or search and rescue. Firefighting may also require the use of motorized tools including chainsaws. However, except for emergencies, administrative use of motor vehicles, mechanical transport, and motorized equipment in wilderness is subject to a Minimum Requirements Analysis. As a result, such uses are rare and generally limited in time and scope to particular fire events. Even then, as was the case with the recent Pine Lodge Fire, most firefighting activity primarily takes place around the perimeter of the wilderness, with minimal suppression actions being taken inside the rugged and inaccessible wilderness area itself.

Overall, the Capitan Mountains Wilderness is a landscape where nature reigns supreme, where the land has retained its primeval character, and where the imprint of modern civilization is substantially unnoticeable. The Wilderness Act identifies “expanding settlement and growing mechanization” as the forces that cause wild country to become occupied and modified. Developments, motorized equipment, and mechanical transport in wilderness make it easier for people to impose their will on the environment, thereby violating the autonomy of nature. Howard Zahniser (1956) articulated this idea when he argued for “areas of the earth within which we stand without our mechanisms that make us immediate masters over our environment.” Undoubtedly, visitors to the Capitan Mountains Wilderness will find themselves in an area such as Zahniser envisioned.



Top: abandoned Forest Service cabin near Capitan Peak; bottom: trick tank (NM WILD/TOBIAS NICKEL).

Solitude or Primitive and Unconfined Recreation Quality

Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation.

Perhaps one of the least tangible qualities, opportunities for solitude or primitive and unconfined recreation remains a fundamental characteristic of the Capitan Mountains Wilderness. The vast views of endless sky and impossibly distant horizons, secluded canyons, and mountain ridges elicit a sense of self-reflection and wonder—immeasurable but critical aspects of wilderness character that simply cannot be quantified. Immersed in this wild landscape, visitors begin to exist as something beyond their day-to-day cares and worries. Here, individuals can be truly alone in the enormity of the natural world, find tranquility, and escape reminders of modern society.

The night sky over the Capitan Mountains is an unrivaled cascade of luminous stars and planets. These ancient constellations have shaped the arts and sciences across millennia. Gazing at the Milky Way from camp, thoughts about human scale, purpose, and spirituality come to mind with little prompting. The night sky is inspiring, primordial, and also imperiled. One-third of the world's population—including 80% of Americans—can no longer see the Milky Way due to light pollution (Falchi et al. 2016). The Capitan Mountains Wilderness is one of the places where people can still experience a star-filled night sky. High elevation and dry air, combined with the mountains' isolation from major population centers, allow the night sky to shine uninhibited with stunning clarity.

In addition to dark night skies, natural sounds and quiet have long been regarded as critical to wilderness character. From howling spring winds to serene winter silence, visitors to the Capitan Mountain Wilderness can experience a natural soundscape that is rarely interrupted by human-caused, mechanically produced sounds. On a few occasions, commercial planes or military aircraft from Holloman Air Force Base in Alamogordo can be heard in the distance. However, visitors are much more likely to perceive the call of a red-tailed hawk, the bugling of an elk nearby, rolling thunder announcing monsoon rains, or the rustling sound of leaves in the wind.



Hikers making camp below Capitan Peak (NM WILD/TOBIAS NICKEL).

Moreover, the geographically isolated, high-elevation setting of the Capitan Mountains affords visitors with panoramic views, encompassing the snow-capped Sierra Blanca to the west, the Sacramento Mountains to the south, the Sangre de Cristos to the north, and the Great Plains unrolling east, far into Texas. On most days, the sky over the region remains relatively free from air pollutants and haze, resulting in outstanding visibility and enhancing the scenic value of this wilderness. In addition to the human and ecosystem health benefits associated with such clean air, the ability to see a landscape unmarred with human presence further cultivates a sense of solitude. Only a radio tower atop Summit Peak, straddling the wilderness boundary, can temporarily diminish the feeling of remoteness. However, the overall absence of buildings, roads, and other alterations on the landscape visible from the crest of the Capitan Mountains is a remarkable sight to behold.



View of the Sierra Blanca from the Capitan Mountains (NM WILD/WILL RIBBANS).

Furthermore, the Capitan Mountains offer outstanding opportunities for primitive and unconfined recreation in the spirit of the Wilderness Act of 1964. There are only seven rugged trails, totaling 33 miles, within this wilderness area including Pancho Canyon, Pierce Canyon, Copeland Canyon, Seven Cabins, North Base, Capitan Peak, and Summit trails. These trails receive little maintenance and were damaged by recent wildland fires including the 2004 Peppin Fire and the 2019 Pine Lodge Fire. As a result, these trails are gradually being reclaimed by Mother Nature and increasingly difficult to follow. Rock cairns and trail junction signs help guide the way in a few places, but recreation here demands a high degree of self-sufficiency, navigational skills, and endurance. Visitors must accept certain risks that comprise a wilderness experience and primitive methods of travel, and those who are ill-prepared may well be humbled by the landscape. Adventure in the Capitan Mountains Wilderness requires visitors to meet the environment on its own terms, free from managerial constraints and with very limited modern facilities provided for comfort or convenience.

Remoteness, inaccessibility, limited trails, and lack of reliable water sources make the Capitan Mountains one of the least visited wilderness areas in the continental United States. According to the summit register atop Capitan Peak, the mountain is only climbed by an average of one to two parties per month. Additionally during a recent recreation site inventory (Furr and Nickel 2019, unpublished data), only eleven dispersed campsites were documented within the entire wilderness. The low density of recreation sites in the Capitan Mountains Wilderness stands in stark contrast to the nearby White Mountain Wilderness, which is more easily accessed and receives more visitors.

While such difficult access preserves opportunities for solitude, it also restricts some visitors from being able to enjoy the Capitan Mountains Wilderness. This is yet another balance that is to be considered when managing for this element of wilderness character. Notwithstanding (or perhaps because of) the physical and mental challenges involved, a number of hunters, equestrians, hikers, climbers, and backpackers choose to venture into the Capitan Mountains every year in search of unharmed and uncrowded wilderness. They all share a sentiment expressed by forester and wilderness advocate, Bob Marshall (1930), when he wrote “For me and for thousands with similar inclinations, the most important passion of life is the overpowering desire to escape periodically from the clutches of a mechanistic civilization. To us, the enjoyment of solitude, complete independence, and the beauty of undefiled panoramas is absolutely essential to happiness.”



Hiker on the Pierce Canyon Trail (NM WILD/TOBIAS NICKEL).

Other Features of Value Quality

Wilderness may also contain other features of scientific, educational, scenic, or historical value.

Birthplace of Smokey Bear

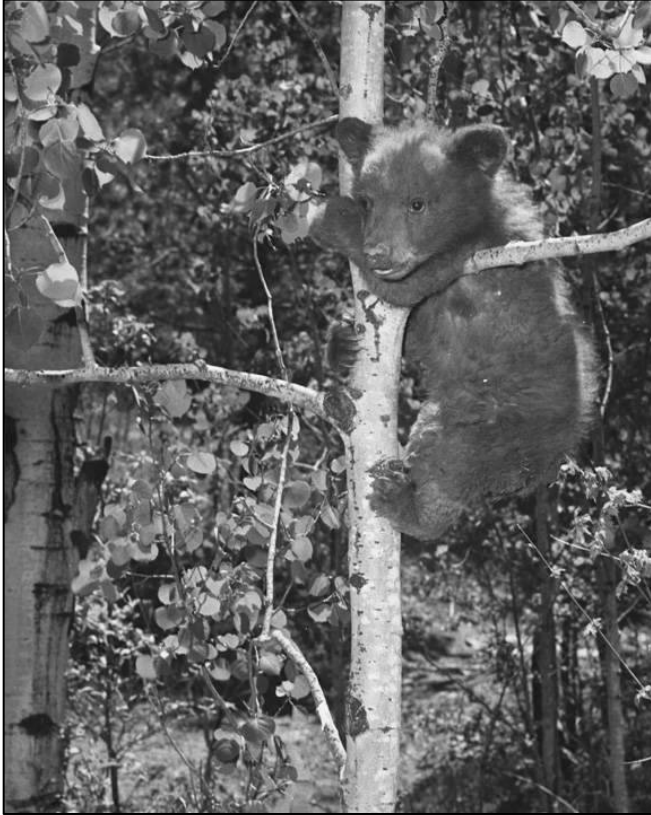
In 1944, the Forest Service collaborated with the Advertising Council and began using a fictional bear to spread its message about forest fire prevention. The creation of Smokey Bear was primarily due to concerns about resources being destroyed during a time of war (Cozzens 2012). World War II posters depicting a bear wearing overalls and a ranger's hat were distributed across the United States to alert the public about the detrimental effects of forest fires. Six years later, in the aftermath of a devastating fire in the Capitan Mountains, an orphaned, badly burned cub was found. He would become the world's most famous bear and the living symbol of fire prevention, Smokey Bear.

The first of two fires began on May 4th, 1950, when a cook stove at a local sawmill overheated and sent sparks flying (Cozzens 2012). Fanned by winds of up to 70 miles per hour, the Los Tablos fire burned approximately 1,000 acres before fire crews had it under control two days later. On May 6th, as the Las Tablas fire base camp was being broken down, a second fire started in the vicinity. The cause of the fire is unknown, but it is suspected that it was caused by a tossed cigarette or purposefully set by a newly dismissed firefighter wanting more work (Cozzens 2012). Severe wind conditions pushed the fire across the Capitan Gap, lending the fire its name. Approximately 500 people were recruited to fight the fire which would eventually burn 17,000 acres (Cozzens 2012).

On May 8th, a group of soldiers were directed to the top of the mountain to build a fire line in an attempt to combat the heavy winds that were expected later in the afternoon. The fire got out of their control, and they had to retreat to a rock slide for protection. When the fire settled, the soldiers found a seared bear cub clinging to a nearby tree with badly burned paws. After seeing no sign of his mother, the soldiers rescued him and reached base camp on May 9th with the cub in tow (Cozzens 2012). New Mexico game warden, Ray Bell, heard about the injured bear and took the initiative to fly him to a Santa Fe veterinarian hoping to save him from infection.

Bell took the cub home in order to care for him during recovery. Bell suggested to the chief of the Forest Service that the cub become the real-life Smokey Bear. The cub was soon on his way to the National Zoo in Washington, D.C., where he lived out the rest of his life while raising awareness about the dangers of forest fires. Smokey became so popular that he was assigned his own zip code to accommodate all the fan mail he received. In 1952, the Smokey Bear song was written by Steve Nelson and Jack Rollins, and soon the whole nation was singing it. Over the next two decades, an annual average of four million people visited Smokey at the National Zoo (Cozzens 2012).

Smokey passed away on November 9th, 1976, in Washington at the age of 26. He was subsequently returned to Capitan, New Mexico, where he lies buried at the Smokey Bear State Park. To this day, visitors flock to the area to learn about and pay homage to the orphaned little bear cub found in the Capitan Mountains. In 2019, the village of Capitan celebrated the 75th anniversary of Smokey's designation as the national symbol of fire prevention. Perhaps the greatest tribute to the iconic bear is the local Forest Service District that inherited his name, and which continues to steward Smokey's birthplace, the Capitan Mountains Wilderness.

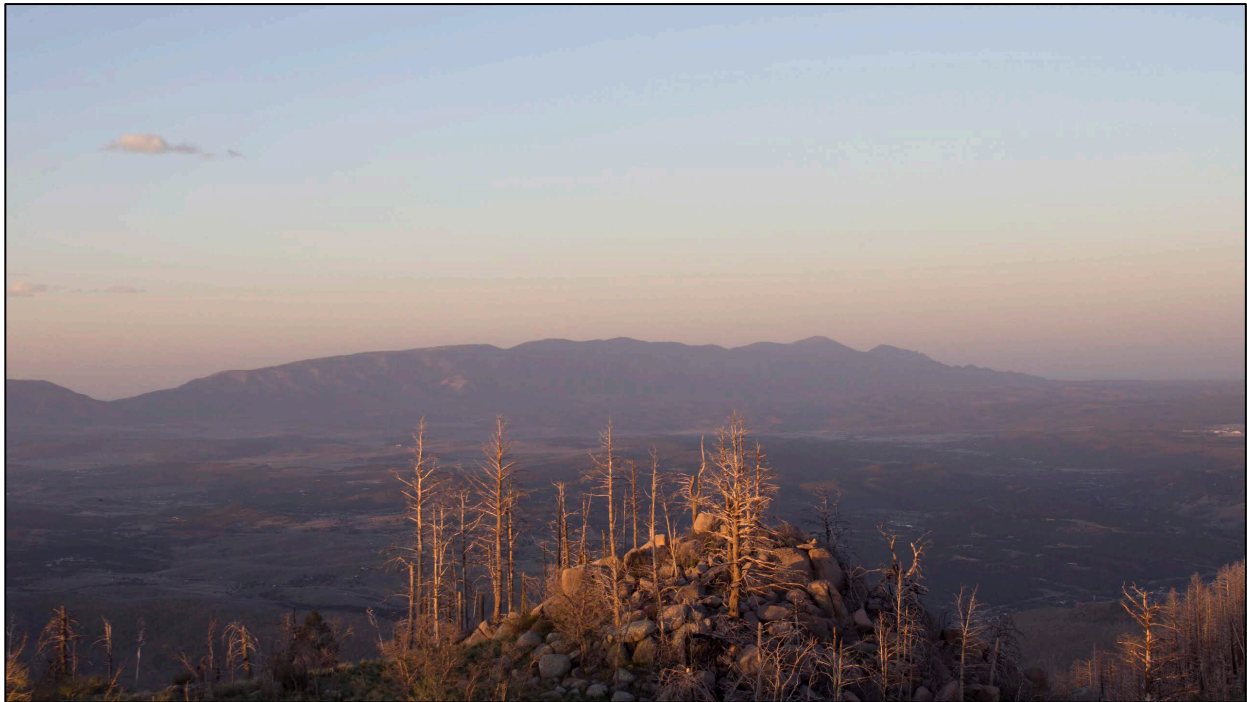


Top left: Smokey Bear shortly after being rescued from a forest fire (FOREST SERVICE/HAROLD WALTER); top right: 1985 Smokey Bear Wildfire Prevention Campaign Poster (SMOKEYBEAR.ORG); bottom: Capitan Gap where Smokey Bear was rescued (NM WILD/WILL RIBBANS).

Conclusion

In the midst of increasing human populations and a rapidly mechanizing world, places like the Capitan Mountains Wilderness only become more valuable. As public lands in the Southwest fall under threat from resource extraction, energy and urban development, and privatization, it is wilderness areas like these that can, with thoughtful and forward-thinking management, provide a sustainable refuge for plants, animals, and humans alike. However, the Capitan Mountains are not immune to external pressures mounting in the Age of the Anthropocene. As climate change and population pressures threaten this seemingly protected wilderness, dedicated stewardship of this irreplaceable resource will become ever more important.

Wilderness stewardship is complicated by the competing qualities of wilderness character, as highlighted throughout this Wilderness Character Narrative. Decisions benefiting one quality may degrade another. Therefore, wilderness managers must carefully weigh the benefits and drawbacks of their decisions and choose a course of action (or inaction) that best respects and preserves overall wilderness character. This narrative seeks to provide managers with a tool to approach wilderness stewardship in a humble and respectful manner, ultimately helping them to preserve wilderness character as a whole.



Capitan Mountains at sunset from Monjeau Peak (NM WILD/JESSE FURR).

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Sandstone rock formations adorn the southeastern flank of the Capitan Mountains (NM WILD/TOBIAS NICKEL).

The Promise

“The 1964 Wilderness Act promised citizens of this country they can forever find special places of solitude and refuge from sights and sounds of civilization, places where ecosystems remain undeveloped and intact and natural processes unfold without direct human intervention.”

– 2020 Vision: *Interagency Stewardship Priorities for America’s National Wilderness Preservation System*