Sangre de Cristo Mountains

The Sangre de Cristo Mountains are one of the longest mountain ranges in the world covering a span of 250 miles, starting from Poncha Pass in Colorado to the lowest point Las Vegas, N.M. The highest elevation within the range, is Blanca Peak at 14,345 feet, then Wheeler Peak at 13,161 feet, and Baldy Peak, also known to the Tewa's as "flower mountain," at 12,622 ft.

The ancestors of Pueblo Indians and the Apache, have lived within the mountains of the Sangres for thousands of years. The mountain peaks are sources of spiritual energy, and sacred places of reverence that encompass bodies of water which serve as doors to other realms. Rituals and prayers to these holy entities kept a balance of harmony between man and nature.

Land was not revered in the same way by Spanish colonists. In many cases, Spanish colonists did not individually own land; it was stewarded as a communal possession belonging to groups of settlers, or clusters of villages. In 1719, the Spanish explorer Antonio Valverde y Cosio, reportedly was awestruck by red-tinted snowy peaks at sunset, and called the mountain range, "Sangre de Cristo" or "Blood of Christ." At the time, the Spanish referred to the mountains as the "Sierra Madre" or "Mother Mountain" range.

According to a 1779 map, the river west of the pass near Walenburg, Colorado was named Sangre de Cristo. The pass, as well as the surrounding area, became known by the name, Sangre de Cristo, and later the entire mountain range. Some historians speculate that the name became famous for penitential practices such as self-flagellation and Lenten reenactments of the crucifixion of Christ by the religious Penitente Brotherhood who resided within mountain communities of northern New Mexico.

Anglo settlers during the 1800s bought and sold land as a commodity until the Land Revision Act of 1891, which created forest reserves, later called national forests, during the presidency of Benjamin Harrison. These areas were held in trust for the public, and to protect water quality, timber supplies and other natural resources from overuse.

In 1938, Benjamin Talbot Hyde, a successful businessman donated hundreds of acres to the state of New Mexico for public use; this area includes the lands that became Hyde Memorial State Park. Today, visitors enjoy the park's hiking trails, which traverse the forests of pine and aspen trees, and lead to cascading waterfalls with panoramic views of the City of Santa Fe. The Santa Fe Ski Basin is a popular place for sledding, snowboarding and skiing, with trailheads utilized for mountain biking and hiking recreation, as well as scenic drives for autumn aspen tree foliage enthusiasts.

The mountains serve as a source of snowmelt runoff, which feeds the ephemeral Santa Fe river and is a critical habitat for wildlife including bears, mountain lions, porcupines, coyotes, foxes, elk, deer, bighorn sheep, and migrating birds. Small farming and ranching communities continue to thrive throughout the lower elevations, however higher elevations of the range are experiencing impacts from climate change.

Research by Los Alamos National Laboratory scientists predict that the Southwest, including New Mexico, will lose the vast majority of its forests by 2050. High-altitude pine trees have decreased in numbers because of climate change, which may impact wildlife and alter the ecosystem. Whitebark pine seeds, for example, are a source of food for Yellowstone grizzly bears and other species, and provide shelter as well as wind blocks. Branches from pine trees retain snowmelt, which affects the hydrology of the watershed and stability of the mountain soil from erosion.

Rising temperatures and longer droughts are killing forests globally; without sufficient moisture, trees die of thirst or are devoured by beetle invasions, and thus are prone to burn in severe wildfires. Areas where forest fires have burned with high temperature intensity, caused soils to turn hydrophobic, meaning that the soils repelled water instead of allowing it to infiltrate into the ground. Denuded forests combined with hydrophobic soils have caused mudslides in upper mountain areas. Historic flooding events are also a symptom of climate change, which causes more soil erosion and can dramatically alter the geomorphology of the landscape. Debris and soil from storm events flow downstream choking riverine systems, thereby affecting aquatic life and water quality.

Based on a 2018 aerial forest health survey, conducted by the Colorado State Forest Service and U.S. Forest Service (CSFS), Rocky Mountain Region, Spruce beetle populations have caused widespread tree mortality for seven years and bark beetle outbreaks continue to spread into parts of Colorado. The result is tree loss, and means a loss of golden aspens in the fall and fewer pine trees in the Sangre de Cristo Mountains. Trees sequester carbon dioxide — one of the gases believed to contribute to climate change. As more trees die, higher carbon dioxide levels will be in the air we breathe.

Rare and endemic plant species are also in danger of going extinct. The *Ipomopsis sancti-spiritus, or* Holy Ghost ipomopsis, is a biennial to short-lived monocarpic perennial rare plant that is only found in only one canyon in the upper Pecos River drainage of the southern Sangre de Cristo Mountains, in San Miguel County. The sole location for this plant is along a road to a campground in a canyon, which had been developed for summer homes. Road maintenance, recreation and associated traffic, and catastrophic forest fires are immediate management concerns for rare plants and endemic species.

The Sangre de Cristo mountains includes the Sangre de Cristo Range, the Crestones, the Spanish Peaks, the Culebra Range, The Taos Mountains, the Cimarron Range, the Rincon Mountains, and the Santa Fe Mountains. This mountain range is composed of Permian-Pennsylvanian rock—a 250-million-year-old mixture of igneous intrusions, conglomerates, and shale, as well as pre-Cambrian rock dating back 1.7 billion years ago in some places.

Common soils in the Sangre de Cristo Mountains include the Teewinot, Leadville, Stunner, Uracca, and Lakehelen complexes, well-drained stony and sandy loams, and bedrock outcrops in the higher elevations. Land uses are livestock grazing, timber production, and natural pastureland.

The climate within the Sangre de Cristo National Heritage Area varies. At the San Luis Valley floor, the mean annual precipitation is 7.5 inches with a mean annual precipitation over 40 inches in the highest mountain ranges. August is the wettest month, with an average annual temperature of 58 degrees. Summer temperatures reach a high of 82 degrees Fahrenheit in July, with temperatures below zero in December and January.

The Sangres remain an integral part of Pueblo Indian culture and history, and continues to be a place of recreation, hunting, gathering of plants, as well as a spiritual retreat and place where they offer prayers for the sustainability of the world. The trees and species that live therein, are natural resources that provide critical wildlife habitat, and create clean air for us to breathe. Observers can capture the mountains illuminated with reddish hues at sunset, and during alpenglow, when the sun is just below the horizon, or when clouds are backlit over the mountains.

Sources:

1. Julyan, Robert. The Place Names of New Mexico, University of New Mexico Press, 1998.
2. Antonio Valverde y Cosio biography*:* Antonio de Valverde Cosío – New Mexico History.org
3. Apache history of the Sangre de Cristo Mountains shared in a presentation at the Museum of Indian Arts and Culture, 2017 by Fred and son Bo Kaydahzinne who represent a long line of traditional Mescalero Apache singers.
4. Weigle, Marta; Frances, Levine (editor). Telling New Mexico History. Museum of New Mexico Press; Illustrated edition (February 16, 2009), Chapter 3: The Sangre de Cristo Mountains, by William deBuys.
5. Los Alamos researcher: Dire forecast for state's forests | Health And Science | santafenewmexican.com
6. Climate Change is Killing Our Mountain Trees | NRDC
7. Aerial Survey: Bark Beetle Outbreaks Expanding in Colorado | Sangre de Cristo Sentinel
8. Fire Effect on Soil (nau.edu)
9. The Sangre de Cristo Mountains | Spanish Peaks County - Explore Southern Colorado's rich history, natural wonders, and artistic inspiration (spanishpeakscountry.com)
10. Ipomopsis sancti-spiritus (Holy Ghost ipomopsis) | New Mexico Rare Plants (unm.edu)
11. Landscape – Sangre Heritage – National Heritage Area
12. Sangre de Cristo Mountains - UNM CSWR Eduardo Fuss Photograph Collection - CONTENTdm Title
13. Sangre de Cristo Mountains at sunset, Santa Fe, New Mexico - Palace of the Governors Photo Archives Collection - CONTENTdm Title (unm.edu)