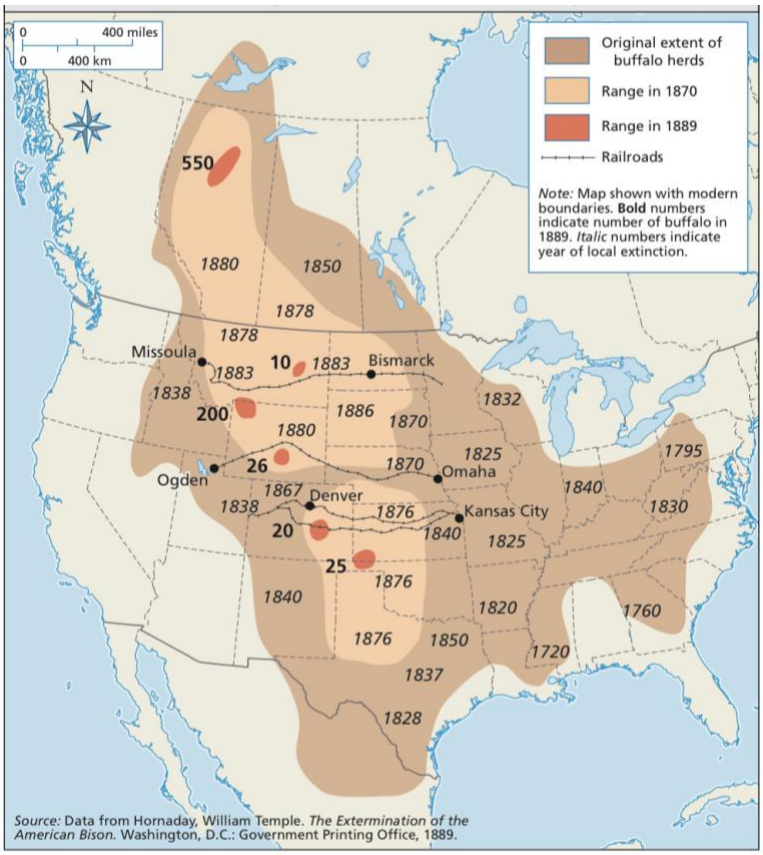
Buffaloes and Bacas in New Mexico and the Jemez

American bison (species name *Bison bison),* also known as "buffalo," are perhaps the most iconic land animals of North America. At one time, they ranged across grasslands and woodlands from Georgia and Pennsylvania to Oregon and New Mexico. The Great Plains herds numbered in the tens of millions, and their total biomass exceeded that of any single animal species on the continent. The rise of Native American horse and buffalo-hunting culture after about 1700, and then the wholesale slaughter of herds by Euro-Americans during the late 19th century, almost led to their extinction. By 1880, fewer than 1,000 buffalo remained.[1]

This lithograph, dating from about 1890, hung on a wall in a Union Pacific Railroad depot near Trinidad, Colorado, where my grandfather salvaged it when the depot was torn down sometime in the early 20th century.

As the historical map of dwindling buffalo herds shows (next page), these lumbering beasts used to inhabit large areas of what is now New Mexico. Their presence here is known from Indigenous knowledge, archaeology, and documentary history. However, the details of



where and when herds lived in the grasslands and woodlands of New Mexico remain obscure. For example, we know that large buffalo herds persisted well into the 19th century on the eastern plains of New Mexico, but despite the map of the former buffalo range (at left), it remains unclear whether sizable herds still existed in the Rio Grande Valley or further west after Spanish colonists arrived in large numbers, especially after the Reconquista of the 1690s.[2]

Palaeoecological evidence shows that bison were certainly here in the Jemez and in other places in New Mexico during the Pleistocene. Fossil leg bones of bison were found beneath El Cajete pumice near White Rock on the Pajarito Plateau dating to about 60 thousand years before the present.[3] Nearly complete skeletons of 14-thousand-year-old bison were discovered in fissures of the gypsum mined on White Star Mesa, south of San Ysidro.[4] Bison bones, hides, and hair found in archaeological studies of ancestral Puebloan sites show that people were utilizing bison products for hundreds of years. But the extent to which these materials were brought in via trade with tribes to the east of the Rio Grande, or long-range hunting expeditions to the eastern plains, versus nearby hunting, is not known.

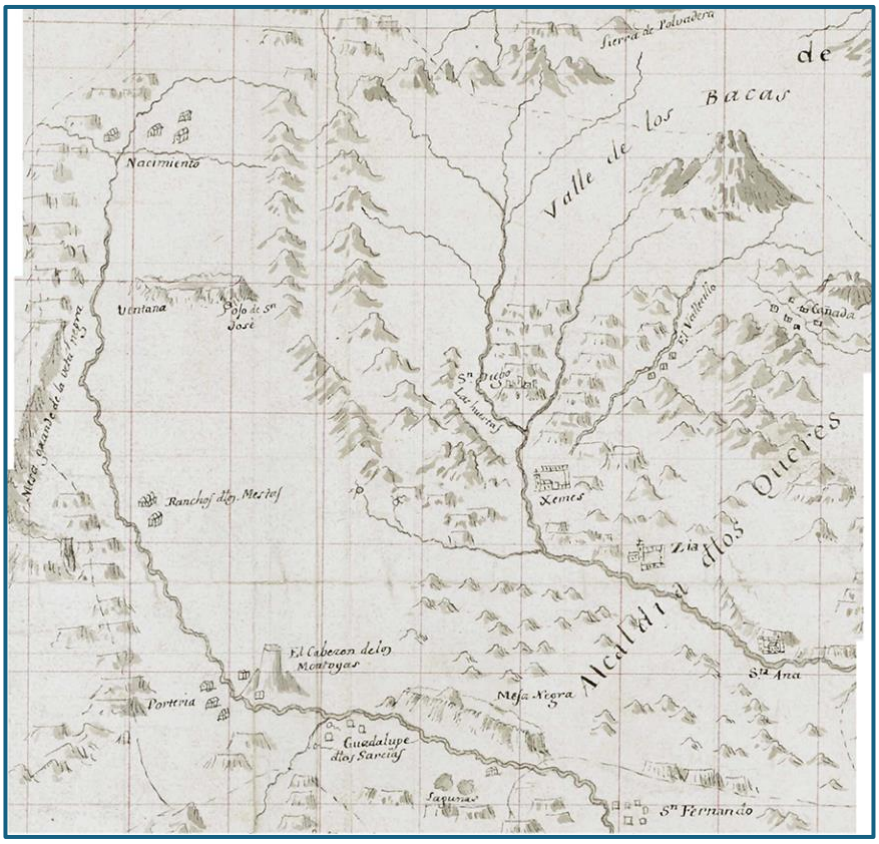
For many years, I have heard speculation that buffalo may have lived on the San Agustin Plains of southwestern New Mexico prior to the arrival of the Spanish. In the 1940s and later, buffalo bones, hair, and hide fragments were found during excavations at several archaeological sites within and near the Plains. Recently, a group of scientists studied these remains using state-of-the-art methods of carbon, lead, and strontium isotope analyses. Carbon-14 dates indicate these animals were harvested as late as 1300 CE. The lead and strontium isotope measurements provide evidence that the bison came from local, not distant herds beyond the San Agustin Plains.[5]

Given the findings from the San Agustin Plains, it seems natural to ask: Could buffalo once have roamed the high grassland valleys of the Jemez Mountains? I have wondered about this possibility, and my curiosity was further piqued a few years ago when I read a 1946 summary of Jemez cultural history by Lansing Bartlett Bloom (1880-1946). He was a

professor and eminent scholar of New Mexico documentary history at the University of New Mexico. Bloom was also a Presbyterian minister, and during his early years in New Mexico he was a missionary at Jemez Pueblo (1910-1916).[6]

In describing the mountains of the Valles Caldera and traditional Hemish uses of this landscape, Bloom wrote:

"*Cerro Conejo, Cerro Pino, Cerro Pelado, Cerro Redondo, and Cerra Venado, were all mountains of that early Jemez world which extended from the high mesa east of Vallecito westward to the Río Puerco, and from the region of the present pueblo of Jemez to the San Anton. It was a world of mountain and valley, of towering forest and living streams, of high majestic mesas which tapered into many a commanding potrero flanked by deep canyons. Even today the Jemez have community rabbit drives in the valley, and in the sierras they hunt the deer and bear, the wolf and fox, the gallina de tierra [wild turkey] and the eagle of the sky.* ***But gone is the buffalo which (if we may trust the maps of Miera y Pacheco) formerly ranged the prairie-like meadows of the upper Valles and the San Anton****."* [Valle San Antonio; my emphasis added][7]



This is a clip from the 1779 version of the Miera y Pacheco map (at left). There are least two other versions (1758 and 1776) and they all show the "Valle de los Bacas" placename in what is now the Jemez Mountains.[8]

Bernardo de Miera y Pacheco (1713-1785) was renowned as an explorer, soldier, and engineer, and he was among the earliest cartographers to create detailed maps of the Southwest. His most famous Southwest map depicted the landscape and route traversed by the Dominguez-Escalante Expedition in 1776. His earliest map for this region dates to 1758, and it (and later maps through the 1770s) shows a crude geography (by modern standards) of the Jemez Mountains, with labels for Jemez ("Xemes") and Zia Pueblos, and a line tracing the Jemez River to its headwaters, where he placed the label: "Valle de los Bacas." [9]

The placename Valle de los Bacas on Miera y Pacheco's maps was apparently interpreted with caution by Lansing Bloom as referring to buffalo rather than to the well-known New Mexico family. Given the context of these maps and the dates (1758 to 1779), this is not an unreasonable historical speculation. The history of buffaloes and Bacas in New Mexico is both complicated and fascinating, so bear with me:

"Vaca," of course, is the name for a cow. When the Spanish first saw buffalo, including Coronado in the 1540s, they referred to them by various cow-related names, such as "vacas de la tierra" (cows of the land), or "vacas de coruetas" or "vacas de corcovadas" (meaning humped cows). By the late 1500s, bison were sometimes referred to as "vacas de cibola" or "cibolo," apparently referencing Coronado's early description of them during his search for the mythical Seven Cities of Cibola.

This drawing (at left) is from Francisco López de Gómara's *La Istoria de las Indias* (1554). It represents one of the earliest European accounts and illustrations of the American bison, likely based on descriptions from the Coronado expedition.

An important point in this discussion is that the "v" and "b" were interchangeable in early Spanish documents, in part because the sounds of these letters overlap phonetically. Before the widespread standardization of Spanish spelling (late 18th to early 19th centuries), writers often followed their own preferences in the use of certain letters and spelling. In Mierra y Pacheco's maps and documents available to us, the "b" predominates in the spelling of the word baca/vaca. Similarly, by the 18th century, the original family name "Cabeza de Vaca" was most commonly spelled in New Mexico with a "B," as in "Cabeza de Baca."

Álvar Núñez Cabeza de Vaca is perhaps the most famous member of this Spanish family in New Mexico. He was the first European to travel across the Southwest after he and his intrepid colleagues were shipwrecked in 1527 on the Gulf Coast west of the Mississippi River. He saw and described bison in western Texas. Cabeza de Vaca survived the epic, eight-year journey on foot, and he eventually reached Mexico City. He was later appointed governor of a province in South America. According to historians and genealogists, he never returned to the Southwest, nor did any of his descendants. However, a colonist family named simply "Baca," likely related to the Cabeza de Vaca family of Spain, came to New Mexico in a second wave of arrivals around 1600, supporting the initial colonization led by Juan de Oñate y Salazar in 1598.[10]

These Bacas were founders of multiple family lines in New Mexico, including returnees following the Reconquista of the 1690s. Many distinguished New Mexicans are among their descendants. These include the renowned Socorro County marshal and lawyer Elfego Baca, and several political leaders, such as the second Governor of New Mexico (1917), Ezequiel Cabeza de Baca. He was also descended from the Bacas who arrived in New Mexico in 1600, but this branch of the family had re-adopted the ancient surname sometime in the early 19th century. According to New Mexico historian and genealogist Fray Angelico Chavez, they are not direct descendants of Álvar Núñez Cabeza de Vaca. Today, this New Mexico branch of the Baca family commonly goes by the abbreviated name, C de Baca.[11]

Returning to the question: What was the origin of the "Valle de los Bacas" placename shown in the Jemez Mountains on the Miera y Pacheco maps of 1758 to 1779? It seems to me there are three possibilities: First, as conjectured by Lansing Bloom, the "Bacas" placename suggests this area was once inhabited by buffalo (i.e., as the early Spanish observers called them, vacas or bacas de tierra or corvocada, etc.); second, it was used for grazing domestic cattle (i.e., vacas or bacas); or third, it was named after a Baca family that presumably lived nearby and used the area regularly before 1758. I consider each of these possibilities in more detail below.

Bison in the Jemez

As I described earlier, bison were present in the Jemez Mountains in the distant past, at least along the periphery of the range during the Pleistocene (i.e., before about 12 thousand years ago). It remains possible that they also inhabited the high grasslands of the Valles Caldera into the Holocene, and perhaps even during the historic period (i.e., post 1500s in New Mexico). However, so far, we lack direct evidence for their presence here as a living herd.

There is sufficient evidence to conclude that buffalo inhabited the Rio Grande Valley well into the 19th century. Two in-depth documentary studies of this question were conducted in 1876 (by J.A. Allen) and in 1889 (by W.T. Hornaday). The latter study and map presented by Hornaday drew heavily on Allen's work, and Allen's maps and descriptions argue that bison were present in at least "restricted" numbers in the upper Rio Grande as late as the 1830s. A notable quote from J.A. Allen's monograph is as follows:

"*According to Lieutenant Whipple, [Whipple Expedition 1853-54] "there do not seem to be any well-authenticated accounts of the existence of the buffalo west of the Rio Grande." He adds: "On inquiring how far west the buffalo had been seen, a Tegua [Tewa] Indian stated that many years ago his father killed two at Santo Domingo [Pueblo]. A Mexican from San Juan de Caballeros added that in 1835 he saw buffalo on the Rio del Norte [Rio Grande]." Lieutenant Whipple further says that "Father Escalante, in a manuscript journal of a trip from New Mexico to the Great Salt Lake, in 1776, mentioned having seen signs of their existence on his route; still, notwithstanding the location of the famed kingdom of Cibola by the early explorers, there do not seem to be any well-authenticated accounts of the existence of these animals west of the Rio Grande." It appears, however, that two*

centuries ago these animals were not unknown to the Indians of the Gila and Zuni Rivers, who obtained their skins from the tribes living several hundred miles to the eastward. Thus, Friar Marco de Niza, in 1539, found " ox-hides " in the possession of the Indians living on the tributaries of the Gila, which they had obtained by trading with the people of the kingdom of Cibola; the ancient pueblo of Cibola being generally supposed to be near the site of the present pueblo of Zuni, on the river of that name. The people of Cibola at this time not only used the skins as articles of dress, but for shields and other purposes." [12]

Archaeologists have also found buffalo remains in the Jemez, but we don't yet know whether they were brought here from distant herds or were from locally hunted animals. During Alexander and Reiter's archaeological excavations of Jemez Cave in 1934-35, they found bison bones, twined hair used as a two-strand rope, and fragments of a buffalo-hair blanket. These items were not carbon-14 dated (to my knowledge), but corn cobs from the excavation were, and they yielded dates of about 3,000 years before the present. However, the Cave showed long-term use into the historic period, with pottery, other artifacts, and a human burial dating to about 470 years ago.[13]

Domestic Cattle in the Jemez

It is doubtful that domestic cattle were grazed in the mountain grasslands of the Valles Caldera as early as 1758, when Miera y Pacheco drew his first map of this area. For one thing, relatively small numbers of cattle were kept by Spanish colonists and the Pueblo people at this time, whereas sheep (ovejas or carnero in colloquial New Mexico Spanish) were much more numerous livestock during that era and later. Sheep herding in New Mexico commonly used a seasonal transhumance grazing practice (i.e., winter grazing in lowlands and summer grazing in highlands). Second, grazing sheep or cattle in the grassland valles was a risky business until after the Navajos were defeated by Kit Carson in 1864 (see my essay on the history of Navajo raiding and killing of sheepherders in the Jemez here). However, there is a record of Baca families using the valles as a summertime sheep range in the 19th century, and a sheepherder named Juan Antonio Baca was killed by the Navajos there in 1835.[14]

Baca Family in the Jemez

As I just noted, documentary records indicate that the Baca families used the high grasslands of the Valles to graze sheep, and at least one family paid a heavy price for doing so. This was the family of Luis Maria Cabeza de Baca (1754-1833), a "rico" who purchased a large ranch in 1818 near Peña Blanca (in the southeastern part of the Jemez, near Cochiti and the Rio Grande). According to Fray Angelico Chavez, Luis Maria was born a Baca, in Santa Fe, and he was apparently the first of the family in New Mexico to re-adopt the "Cabeza de" part of the historic family name. Juan Antonio, who was killed by the Navajo in the Valles Caldera in 1835, was Luis Maria's son.[15]

In 1860, the U.S. Government reached a land-grant settlement with the descendants of Luis Maria, which led to the Baca Location No. 1 and, later, the Baca Ranch. This private sheep and cattle ranch was eventually reacquired in 2000 by the U.S. Government through

an Act of Congress and is now known as the Valles Caldera National Preserve. The 1860 Baca land grantees received the 99,000-acre property (plus four others of similar size, one other in New Mexico, one in Colorado, and two in Arizona) in exchange for their Spanish land grant that settlers near Las Vegas, New Mexico, had usurped. This Baca family's relationship to earlier and other branches of the family living in the Jemez is unknown to me. In any case, this historical development (i.e., the Baca Locations grant) occurred more than a century after Miera y Pacheco mapped the placename "Valle de los Bacas" in 1758.[16]

Although the 1860 naming of this area as the "Baca Location" and later the "Baca Ranch" was based on the U.S. land grant to the C de Bacas, there are two key historical clues that suggest that Miera y Pacheco's place naming in 1758 was related to an earlier Baca family living near or within the Jemez. The first clue is that a Baca family apparently lived not far from the grasslands of the Valles Caldera during the 1760s. In the baptismal records from the Mission Church at Jemez Pueblo, we find the following entry:

"BACA, Antonio de los Dolores [baptized child]
bap 29 Mar 1767; d/Juan BACA and Maria Francisca SANDOBAL [parents]; pad/ Juan Phelipe BACA and Maria Ysabel BACA [godparents], all of the place of Nacimiento" [17]

Notice that the parents and godparents home was in "Nacimiento" (meaning "birthplace"), an old name for the village now known as Cuba, New Mexico. Nacimiento was first settled in 1736, and more settlers came after a 1769 land grant.[18] Also, on the Miera y Pacheco map (page 3), Nacimiento is shown immediately to the west of Valle de los Bacas. The current village of Cuba is about 20 air miles from the western edge of Valle San Antonio within the Caldera. Old trails of only slightly greater length link these places, with highly grazable "vallecitos" along the way. Hence, it is plausible that this Baca family living in Nacimiento during the 1700s may be the eponym, the source name, for Valle de los Bacas, as used by the cartographer Miera y Pacheco. Although Navajo, Apache, and Ute raiding was often a threat during the 18th and early 19th centuries in the Jemez (Nacimiento was abandoned for some years in the late 1800s due to raids), there were relatively peaceful years when use of the high valles grasslands for grazing would be a reduced, calculated risk.

It is also worth noting that there are dozens of Baca parent and godparent names listed in the baptismal records from the 1701 to 1829 transcribed registries of the three old churches located in the Jemez Valley and area. These churches are at Jemez Pueblo, Vallecitos ["Vallecillo" in Miera y Pacheco's map, and called "Ponderosa" today], and in San Ysidro. Baca is one of 21 families listed as recipients of the largest Spanish land grant in the Jemez Mountains, the 1798 Cañon de San Diego grant from the King of Spain.[19] Baca is also a longstanding surname among Jemez Tribal members, as shown in multiple decades of US Census records dating back to the 1840s.[20] All of this demonstrates the Baca family presence (and intermarriage) in the Jemez Mountains goes back at least as far as the mid-1700s.

A second clue comes from examining Spanish grammar as used by Miera y Pacheco on his 1750s-1770s maps. All three versions of this map (that I have seen) consistently use the masculine article "los" instead of the feminine "las" for family surnames ending in "a" (feminine). Ordinarily, in Spanish grammar, the plural article matches the gender of the object, *except* in the case of family surnames when the family being referred to is headed by a male. As with early Spanish spelling, grammatical rules were somewhat flexible before circa 1800, but Miera y Pacheco's use of "los" for placenames associated with family surnames ending in "a" is demonstrated multiple times in his maps. For example, in addition to the "Bacas" placename, see those to the south and west of the Jemez on the map (page 3), listed as "*Ranchos d[e]los Mestas*," "*El Cabezon de los Montoyas*," and "*Guadalupe d[e]los Garcias*." These clearly are placenames using the masculine plural article and an associated family surname with the feminine "a."

Another grammatical and spelling clue is the placename given to a river and a creek. One of the chroniclers of the 1540s Coronado expedition referred to the modern-named Pecos River, as the "*Rio de las Vacas*." This was based on the presence of large numbers of buffalo ("vacas") in that river valley.[21] Note the use of the feminine "las," matching the gender of "vacas." Likewise, and perhaps coincidentally, one of the tributaries of the Rio Guadalupe in the Jemez, roughly sketched on Miera y Pacheco's 1779 map that is immediately west of the Bacas placename (page 3), is today also called the "*Rio de las Vacas*." The earliest appearance of that placename on a map, to my knowledge, is a US Geological Survey topographic map of the Jemez dated 1890. It seems likely that this name was applied in the late 19th century due to presence of cattle along that reach of the creek.

It seems then, the Spanish New Mexicans used the "v" letter and feminine plural article when cows or buffalos were being referenced, both in the 16th and later centuries. And they used the letter "B" and masculine "los" plural article when referring to a family.[22]

In conclusion, the bulk of evidence supports the interpretation that the Valle de los Bacas appellation used in 1758 and later by the illustrious New Mexico cartographer refers to the family, rather than to four-legged beasts. However, there is a distinction to be made: Miera y Pacheco's original meaning – a family or a buffalo herd – is ultimately a separate issue from whether or not buffaloes ever roamed the grassy, high plains of the Valles Caldera. It could be that both are true; the Bacas may have used these grasslands in the 1750s, and bison may have lived in the Caldera sometime in the past. Only more evidence and science will help us determine this.

One weakness of certain paleoenvironmental hypotheses is that they are not disprovable; they are only provable. Absence of evidence is not evidence of absence. So, one day, a great rainstorm and flood may erode a deep arroyo down through a valle, and there, exposed in the sediments, will be a bison skull with curved horns embedded in the cut bank. Or maybe not.[23]

Endnotes:

[1] A thorough review of the demise of the Great Plains buffalo herds is covered in Elliot West's *The Way to the West: Essays on the Central Plains*. UNM Press, 1995; and Ken Burns et. al's recent documentary series: https://www.pbs.org/kenburns/the-american-buffalo

[2] The map shown here is derived from *The Extinction of the American Bison*, by William T. Hornaday, U.S. Government Printing Office, Washington, DC, 1889, and it was largely based on the map and historical review in the monograph by Joel A. Allen. *The American Bisons, Living and Extinct*. Vol. 1. University Press, Welch, Bigelow, 1876; Allen's map generally shows buffalo persisting in the Rio Grande Valley only until about 1825.

[3] *Bison antiquus* occurrence and Pleistocene-Holocene stratigraphy, Cañada del Buey, Pajarito Plateau, New Mexico, Paul G. Drakos, Steven L. Reneau, and Gary S. Morgan, 2007, pp. 441-448. https://doi.org/10.56577/FFC-58.441; In: Geology of the Jemez Region II, Kues, Barry S., Kelley, Shari A., Lueth, Virgil W.; [eds.], New Mexico Geological Society 58th Annual Fall Field Conference Guidebook, 499 p. https://doi.org/10.56577/FFC-58; Perhaps it is merely coincidence that the name of this site "Cañada del Buey," Canyon of the Ox, given that buffalo and their hides, etc. were sometimes referred to by the Spanish as "buey."

[4] Morgan, Gary S., and Larry F. Rinehart. "Late Pleistocene (Rancholabrean) mammals from fissure deposits in the Jurassic todilto formation, White Mesa mine, Sandoval County, north-central New Mexico." *New Mexico Geology* 29, no. 2 (2007): 39-51.; The bison here were identified as the species *Bison antiquus*.

[5] Ashley E. Sharpe, Karl Laumbach, Michael Wylde, George Kamenov, John Krigbaum & Art Tawater (2025) Isotopic Evidence Supports Existence of Late Holocene Bison Herds in West Central New Mexico, KIVA, 91:2, 204-228, DOI: 10.1080/00231940.2024.2436267.

[6] Lansing Bloom was a missionary in Mexico with his wife, Maude from 1907 to 1910. While there, they began studying Franciscan mission records from the Spanish colonial era, a pursuit aided by Maude's fluency in Spanish. Upon returning to New Mexico, Bloom was transferred to the Presbyterian church at Jemez Pueblo. This assignment was transformative; he spent his time delving into the archaeology and lore of the Pueblo world. He supervised the removal of centuries of debris from the ruins of the San José de los Jémez mission church in Jemez Springs. He later was a professor at UNM, and he was a founder and editor in chief of The New Mexico Historical Review for 20 years.

[7] Bloom, Lansing B. "The West Jemez Culture Area." *New Mexico Historical Review* 21, no. 2 (1946): 8.

[8] The 1779 map of New Mexico by Bernardo de Miera y Pacheco can be viewed in detail online at the Newberry Library: **https://mappingmovement.newberry.org/maps-of-trails-and-roads/1779-map-of-the-province-of-new-mexico/** ; An extended text introduction on the map, written in Spanish reads as follows for the first paragraph, translated to English by Gemini Pro3: "*Map of the internal Province of New Mexico, made by order of the Lieutenant Colonel of Cavalry, Governor and Commander General of said Province, Don Juan Bautista de Anza, [by] Don Bernardo de Miera y Pacheco, distinguished soldier of the Royal Presidio of Santa Fe; with its settlements in the state they are currently found, very poorly formed and the houses of the neighbors who compose them scattered from one another. From this poor arrangement in which they have settled—each individual on the piece of land granted to him, building his own dwelling—have originated many damages, disasters, and desolation of settlements caused by the enemy Comanches and Apaches who surround said Province, killing and carrying off many families*."

[9] Versions of the Miera y Pacheco maps of New Mexico from 1758 to 1779 are in this useful biography of the cartographer by John L. Kessell: *Whither the Waters: Mapping the Great Basin from Bernardo de Miera to John C. Frémont*, University of New Mexico Press, Albuquerque, 2017; The 1758 map is included in this book, and also in Kessel's *Kiva, Cross & Crown: The Pecos Indians and New Mexico, 1540-1840*. Western National Parks Association. 587 pgs.

[10] Fray Angelico Chavez, pages, 9 and 152, Origins of New Mexico Families in the Spanish Colonial Period, Historical Society of New Mexico, Santa Fe,1954 (Internet Archive); Cristobal Baca was the family head that arrived in 1600 in New Mexico, and his descendants also returned during the Reconquista of the 1690s.

[11] Ibid, Chavez, 1954.

[12] Ibid, J.A. Allen, 1876.

[13] Hubert G. Alexander and Paul Reiter. 1935. Report on the Excavation of Jemez Cave, New Mexico. A Monograph of the University of New Mexico and the School of American Research. No 4. Santa Fe, NM. 67 pgs. + bibliography and 20 plates; A table on page 35 lists "Bison, or Domestic Cow"; page 41-42, "two-strand bison hair rope"; page 53, "Bison-Hair Blanket," with a "?," and suggestion that the rope and blanket fragments are possibly "early historic"; The C-14 dates of corn cobs and the child burial is reported in Richard I. Ford, 2013. The Cultural Ecology of Jemez Cave. pgs. 69-79, Chapter 4, In: From Mountain Top to Valley Bottom: Understanding Past Land Use in the Northern Rio Grande, New Mexico, edited by Bradley J. Vierra. University of Utah Press, Salt Lake City. 336 pgs.; Ford speculates that the bison material found in the Cave came from animals in lower elevations, possibly the lower Jemez River Valley, and shows them there on a map.

[14] Ibid, Chavez, 1954.

[15] Ibid, Chavez, 1954; As Craig Martin describes in his 2003 book (see endnote 16), Luis Maria Baca was a controversial character, with predilection for pretension, hence his adoption of "Cabeza de." His Peña Blanca rancho was disputed by Cochiti Pueblo, and the family ultimately lost it in a court battle. Luis Maria was killed in a dispute with a Mexican soldier in 1833.

[16] There are three extensive volumes reviewing the cultural history of the Valles Caldera landscape, and they are complementary sources on the Luis Maria Cabeza de Baca family and descendants, the land grants, Navajo raids and battles in the Jemez, and much more. As best I can tell, none of these three books grapple with or attempt to resolve Miera y Pacheco's ambiguous 1758-1779 mapping of the placename "Valle de los Bacas," or Lansing Bloom's conjecture about bison: Craig Martin. 2003. *Valle Grande, A History of the Baca Location No. 1, Background to the Creation of the Valles Caldera National Preserve*, All Seasons Publishing, Los Alamos, NM. 157 pages; Kurt F. Anschuetz and Thomas Merlan. 2007. *More Than a Scenic Mountain Landscape: Valles Caldera National Preserve Land Use History*, USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-196. 277 pages; Frank Norris, Michael L. Elliott. 2022. *Historic Resource Study, Valles Caldera National Preserve*, National Park Service, Santa Fe, VCNP CR Report R2022-012, NMCRIS Activity No. 153723. 328 pages.

[17] *New Mexico Baptisms: Church in Jemez, NM, 1701-1829, Extracted and Transcribed by Members of the New Mexico Genealogical Society*, Albuquerque, 2017, page 11; Perhaps even more pertinent is a baptism entry in the year 1757, with the padrino (godfather) listed as "El Senor Alcalde Don Antonio BACA," page 9. I'm not sure, but this is probably the church registry at Jemez Pueblo. In this case, this means a key Spanish colonial official named Baca was also located within about 20 air miles of the grassy valles of the Caldera, at about the time of Mierra y Pacheco's mapping of the placename Valle de los Bacas.

[18] The Jemez Valley History web pages includes a summary of the history of Nacimiento/Cuba, with photos, written by Judith Isaacs: https://jemezvalleyhistory.org/cuba/

[19] An English translated and typed version of the 1798 Cañon de San Diego grant document, prepared by the U.S. Surveyor General in 1860 is posted here on the Jemez Valley History web pages, Jemez Springs Public Library, Judith Isaacs: https://jemezvalleyhistory.org/typed-transcript-canon-de-san-diego-grant/ ; However, I have a copy of the original handwritten in Spanish document, and I used Gemini Pro 3 large language model to transcribe and translate this document. I discovered that the 1860 US government translation erroneously excluded the last name that *was* included among the 21 families listed in the original handwritten document, namely "Blas Baca."

[20] U.S. Census documents for Jemez Pueblo and Cañon de San Diego were accessed for 1850 and 1860, on Ancestry.com; Also, I have a document titled: *Mexican Census of 1845, For the Province of New Mexico*, microfilm roll no. 40, frames 361 to 560, Mexican Archives of New Mexico (1821-1846), Cañones.

[21] Ibid, Hornaday, 1889, page 27: "*1542 Coronado, while on his celebrated march, met with vast herds of buffalo on the Upper Pecos river, since which the presence of the species in the valley of the Pecos has been well known. In describing the journey of Espejo down the Pecos River in the year 1584, Davis says (Spanish Conquest of New Mexico, p. 260): "They passed down a river they called Rio de las Vacas, or the River of Oxen [the river Pecos], and the same Cow River that Yaca describes," says Professor. Allen, "and was so named because of the great number of buffaloes that fed upon its banks. They traveled down this river the distance of 120 leagues, all the way passing through great herds of buffaloes*."

[22] Interestingly, one of the other tributaries of the Rio Guadalupe, immediately west of Mierra y Pacheco's "Valle de los Bacas" label, is the Rio Cebolla. This is the drainage with Fenton Lake. "Cebolla" means onion, and so perhaps this creek was named after presence of wild onions there. However, I can't help but notice the coincidental (?) near-spelling of Cibola and Cebolla, although the pronunciations are different, I think.

[23] The imaginary event I describe here echoes an actual event that occurred in 1908 near Folsom, New Mexico (northeastern corner of the state). A massive rainstorm and erosive flood carved a deep arroyo. A local cowboy named George McJunkin saw the heavy bones sticking out of a cut bank. His curiosity and eventual contact with paleontologists led to the first confirmed discovery of 12,000-year-old bison fossils in the Southwest, along with clear evidence of human hunting; stone spear points were found embedded within some of the the bones. Tony Hillerman tells this story in a delightful 1973 book chapter: *Othello in Union County*, Chapter 7, in: *The Great Taos Bank Robbery, and Other Indian Country Affairs*, Harper-Collins Publisher, New York.