THREE CULTURES, FOUR HOOVES AND ONE RIVER: THE CANADIAN RIVER IN TEXAS AND NEW MEXICO, 1848-1939

by

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B.A., Agnes Scott College, 1995
M.A., Kansas State University, 2005

AN ABSTRACT OF A DISSERTATION

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Abstract

During the period between 1848 and 1938, a combination of land-use changes and regional climatic alterations caused changes in the physical structure of the Canadian River. The Canadian River begins in the southern Rocky Mountains and flows south and then northeast across the High Plains of New Mexico and Texas. The Comanche Indians used the river as a transportation corridor, as a winter shelter for themselves and for their horse herds, as well as hunting the bison that visited the valley. The Comanches also valued the spiritual power, *puha*, found in the running water and on the mesas within the river's lowlands.

After the defeat of the Comanches in the Red River Wars and the destruction of the bison herds, New Mexican Hispanos moved their flocks of sheep into the valley and established settlements along the tributary streams. These settlers practiced "extensive" land use, drawing from a broad array of the valley's resources and using them comparatively lightly in ways that drew from older Spanish laws and customs.

The enclosure of parts of the valley by Anglo-Texan ranchers drove the Hispanos out of the Canadian watershed in Texas, although access to the open range in New Mexico allowed other Hispanos to retain their settlements. Corporations including the Capitol Lands Syndicate and Prairie Cattle Company introduced large numbers of cattle to the region at the same time that regional rainfall patterns shifted. This combination of heavy grazing and altered precipitation patterns led to erosion in the uplands that caused changes in the physical structure of the Canadian River.

After 1903, the arrival of railroads into eastern New Mexico accelerated the development of dry-land farms in both states. Increasing calls for damming and controlling the Canadian led to the first interstate Canadian River Compact in 1928. The advent of a severe drought in the 1930s and the Great Depression led to federal resources becoming available and the first dam was built on the stream, ending the era of the free-flowing river and again starting physical changes to the Canadian.

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All errors are my own.

INTRODUCTION - Rio Colorado, Rio Cañadian

In November 1876, twelve heavily laden freight wagons creaked their way over the rough terrain, following a horse-drawn coach along an old trail first blazed by bison and those who hunted them. Behind the wagons, almost 3000 sheep grazed their way along the old trade trail, in the company of several cows and a number of horses. The caravan had left the foothills of the Sangre de Cristo Mountains, two hundred and fifty miles to the west, crossed the high, short-grass steppe of eastern New Mexico Territory and now approached its destination – the foot of a bluff on the banks of a spring-fed creek, near the stream's confluence with the Rio Colorado. It is easy to imagine don Casimero Romero's satisfaction as his family, their servants and relatives, and his flocks at last reached the green, well-watered site he had chosen for his new home. They were pioneers pushing the borders of Hispano settlement far to the east, into the Texas Panhandle.[1]

Casimero Romero had visited this place before, during his years as a *Comanchero* trader, and it is safe to assume that he'd liked what he had seen. The Comanches he had traded with used the valley for shelter and as a travel route to reach the farming villages to the east and west. They had little desire to share the Canadian Valley with permanent residents, such as Romero

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[1] Ernest R. Archambeau, "Panhandle Pioneer Settler Recalls Origin, Early Days of 'Old Tascosa'," *Amarillo Times* February 28, 1946, 2; José Ynocencio Romero to Ernest R. Archambeau, "Spanish Sheepmen on the Canadian at Old Tascosa," *Panhandle Plains Historical Review* Vo. 19 (1946), 47; Roy Riddle, "Casimero Romero as Benevolent Don in Brief Pastoral Era" *Amarillo Times/ Amarillo Globe News* Golden Anniversary Edition, August 14, 1938, 28c; John L. McCarty, *Maverick Town: The Story of Old Tascosa* Enlarged Edition (Norman: University of Oklahoma Press, 1968), 38-39.

wished to become, and in the later years before the Red River War had even taken to restricting the trade in bison meat and hides as a way to preserve their resources for themselves. Romero no doubt knew of the Comanches' defeat and surrender after losing their horse herd in Palo Duro canyon, just south of the Canadian Valley. Now Hispanos could move in without fear of Native American raiders carrying off sheep and shepherds both. In addition, Anglo-American commercial hunters had eliminated many of the bison, leaving the lush grasses and well-watered valley open for the flocks.[2]

For a pastoralist or rancher, the Canadian Valley provided all that was needed for success. Nutritious grass in plenty covered the uplands and the rough ground of the outer valley, free for the taking. At the bottom of the wide, broken lands, Romero noted marshy areas covered in *tule* reeds as high as the head of a man on horseback, stands of cottonwood, hackberry and a few oak trees, and meadows of tall grasses that waved in the constant wind. Spring-fed streams trickled or flowed into the river from the north and south, sometimes hesitating in beaver ponds before reaching the sandy valley floor. That was probably the origin of the broad, grassy area Romero intended to use as a hay meadow, not far from where he would build his house. He had not brought many meat-animals with him, aside from sheep, because the plentiful game would supply the family's needs.[3]

Animals besides humans found refuge and plenty in the broad, broken valley winding across the short-grass steppe. Bison moved into the valley in winter to find shelter from the harsh winds and blizzards that scoured the plains above. Wapiti, which the Anglos called "elk," passed

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[2] Charles R. Kenner, *The Comanchero Frontier: A History of New Mexican- Plains Indian Relations* (1969; repr., Norman: University of Oklahoma Press, 1994. Originally published as *A History of New Mexican-Plains Indian Relations*), 49; Riddle, "Benevolent Don," 29c.

[3] Romero, "Sheepmen," 48, 56-57.

east and west along the river, while mule and white-tailed deer took advantage of the cover and browse. Swift, tan and white pronghorn antelope lived on the plains surrounding the valley. Lobo wolves, their small cousins the coyotes, black bear, bobcats and cougar preyed on the grazers and browsers. Waterfowl of many kinds would provide Romero's family with entertainment, if not much food, while prairie chickens and turkeys filled the cook pot. This was a good land, Romero probably thought as he supervised the creation of his people's first camp.[4]

Sixty years later, Casimero's son José Ynocencio described the valley to local historian Ernest R. Archambeau and cataloged how it had changed. The grasses had vanished into the bellies of hungry sheep, but even more acres of grass and brush disappeared into the mouths of cattle. Hunters killed off the elk, bear, and wolves because they threatened the cattle. A town named Tascosa appeared on the west side of the bluff beside Romero's Plaza and then withered and died when the forces of corporate ranching, railroad location and farming in the uplands drew people away from the Breaks. Despite his efforts to make a place in this new social and economic environment, Casimero Romero found himself hemmed in and in 1893 claimed land farther away from the Canadian, over the border in New Mexico, where he moved to in 1896 and lived until his death in 1908. By then the river had also changed in places, alterations that Ynocencio blamed on the herds of hungry cattle that had crowded the stream and filled the valley in both Texas and New Mexico. The river as Ynocencio remembered it was gone, tamed by a dam and choked in sand.[5]

Ynocencio was correct, to a point. Overgrazing of the valley and uplands by cattle, and probably sheep, horses and bison as well, no doubt caused part of the change he witnessed. But

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[4] Romero, "Sheepmen," 55.

[5] Romero, "Sheepmen," 57; Michael E. Walsh, *A Mission in the Desert: Albuquerque District 1935-1985* (Washington D.C.: Government Printing Office, 1985), 49.

alterations in the regional rainfall patterns also played a role, as did the development of the uplands into stock farms and dryland wheat, sorghum and other small-grain acreages. By the time the gates closed on Conchas Dam in 1938, almost every environment around and in the valley had altered: physical, biotic, cultural, economic, political. The Canadian had always been a link between the low rolling plains and tallgrass prairies to the east and the mountains to the west. Now it connected Anglos and Hispanos, ranchers in New Mexico to cattle feeders in Iowa and to bankers and butchers in England. World economic fluctuations as well as local droughts and floods determined the fate of corporate ranches and land speculations in the Texas Panhandle and eastern New Mexico, while political decisions in Austin, Texas and Santa Fe, New Mexico, and Washington D.C. determined who could settle and farm, and who would dare to hold back the waters of the Canadian River in an attempt to tame the unpredictable stream and harness it for what seemed to be better uses.

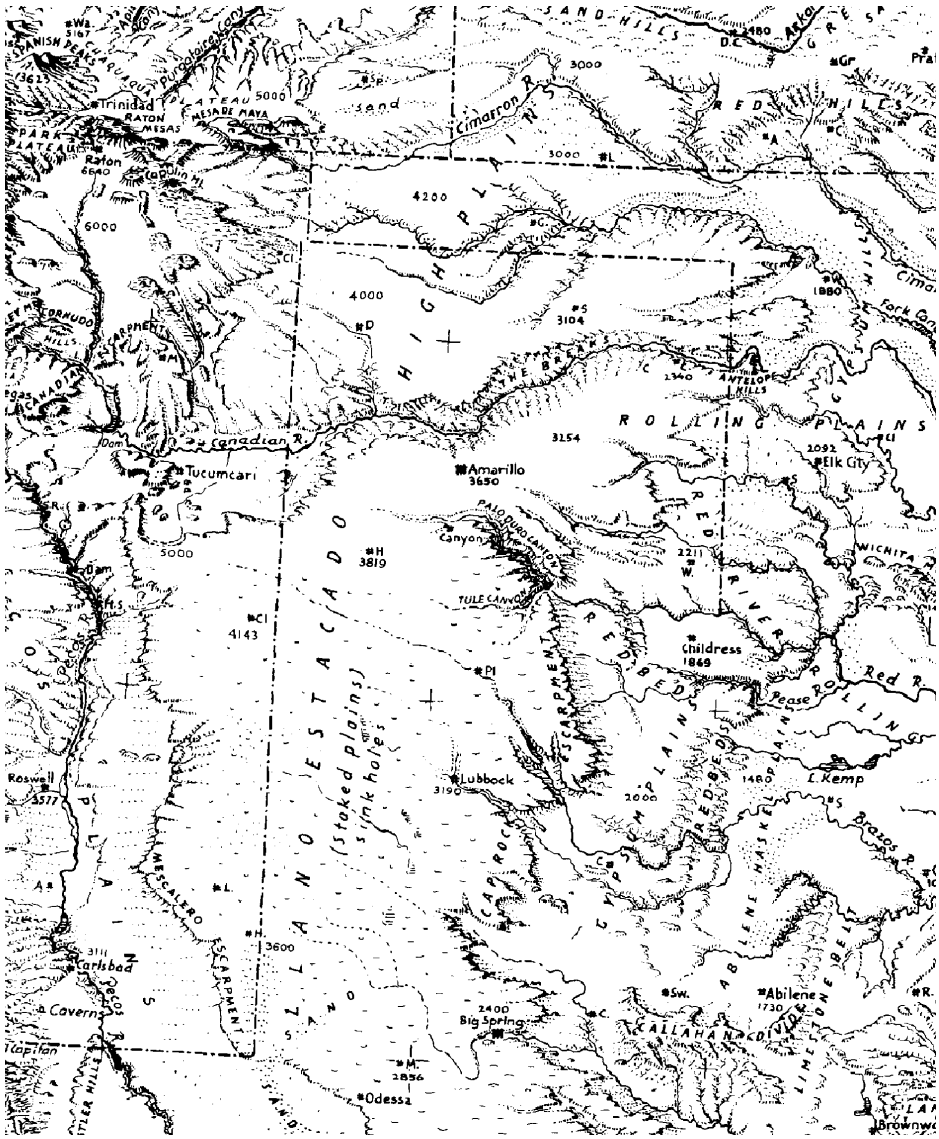

Figure 1: The Canadian and the High Plains. From "Landforms of the United States" © Louis Reisz, 1957.

This dissertation tells the story of how people tried to adapt to the area, or to mold the plains and the Canadian to fit their culture's visions of a good environment, and how the landscape's responses forced people to relocate, adapt and rework their survival methods. Between 1848 and 1938, a combination of land use changes and altered precipitation patterns led to physical changes in the Canadian River. Outside events including wars, the development of new technologies and the arrival of different cultural groups including the Comanche, Hispanos

and Anglo-Texans added other layers of transformations to the physical processes already underway. The peoples living in and around the Canadian Valley reacted to these alterations by accepting, rejecting and/or modifying aspects of the new cultures and by attempting to control the river. To do this they drew on resources from outside the Valley, intertwining the area more and more closely into national and world affairs, as the following chapters show.

This work is divided into four sections: the bison river, the sheep river, the cattle river, and the river of plows and of paper. The story begins with the Native Americans who claimed the area in the mid 1800s. Although the Antelope Creek people and others had lived in the region for at least 10,000 years, the Comanche truly made the High Plains and Canadian Valley the center of a bison and horse-based "empire." They lived around the river, drawing on its physical, biotic and spiritual resources to support their way of life. The Comanches were horse pastoralists who drew on the solar energy trapped by plants through bison and horses. Bison provided food, shelter and trade goods, while horses served as transportation, indicators of prestige and items of exchange. Running water like that of the Canadian both carried and washed away spiritual power, or *puha*. This "medicine" augmented the hunt and the raid, helping ensure bison and horse acquisition. Originally from the Great Basin, the Comanche seemed to have adapted to the Southern Plains, making it the heart of what historian Pekka Hämäläinen calls "The Comanche Empire," and that the Spanish and Mexican governments of New Mexico and Texas called *la Comancheria*. However, extended drought in the 1850s and the pressure of commercial hunting of bison by Anglos and Hispanos led to the collapse of the ecology that the Comanches depended on.

New Mexican Hispanos ventured into the Canadian Valley during the Comanche era as explorers, traders, captives, returning later as pioneers and settlers. They knew of the area

through their contacts with the Comanches and many Hispano pioneers used their experiences as *comancheros* and *ciboleros* to find places to establish homes and homesteads in and around the Canadian Valley. Arriving during a period of wetter-than-average years, the Hispanos made extensive use of the water, plants and animals available in the Canadian watershed. The most successful of these men and women combined traditional Spanish land-use and water-use patterns with Anglo-American economic and legal ideas to help them dominate the land around the river. Other Hispano settlers soon found themselves forced out of the river valley as Anglo-American ranchers moved into the Canadian watershed from the south and east, pushing the settlers and traveling shepherds back towards the open-range lands of New Mexico and into the Pecos River drainages.

Anglo-Texans also valued the Canadian River and made the valley into the core of their British-funded corporate ranches. Herds of cattle found shelter in the Canadian's Breaks as well as grazing the uplands to the north and south of the stream. At the same time, changing climatic and meteorologic patterns altered the timing and duration of the area's precipitation. Cattle and climate in turn contributed to accelerating the Canadian's shift from a temporarily degrading into an aggrading stream. At the same time, business "Panics," Populist political agitation against foreign corporations and the collision of federal land laws with the ecological and hydrological reality of the High Plains led to ranch failures and the eventual break-up of the largest "spreads." Farmers tried moving into the region but land tenure questions and discouraging drought in the 1880s and again in the 1890s slowed their progress.

The farmers persisted, however, and the combination of railroads and dry-land farming led to a regional population boom that soon busted in the wake of harsh weather and seemingly fickle agricultural markets. The Twentieth Century brought new technologies including gasoline-

powered tractors and automobiles to the area, but the unpredictable rainfall remained the deciding factor in regional prosperity. After a surge of farm creation prior to and during WWI, the population declined when drought returned. Ranches began expanding as farms contracted, until the severe drought of the 1930s combined with the Great Depression to further depopulate the area. Residents agitated for development and capture of the Canadian's waters so that the "wasted" water could be used in irrigation projects that might reclaim the "desert wastes" now advancing across the Plains. Controlling the river proved to be nearly impossible until the power of the federal government in the form of the Army Corps of Engineers was brought to bear on the erratic stream. Closing the gates at Conchas Dam led to new changes in the river, continuing the ages old pattern of alteration and adaptation that had shaped life along the Canadian River for so many years.

The people who lived along the Canadian valued the river as a lifeline and as a source of resources including food, shelter and spiritual benefits. However, each group viewed their environment differently. The Comanches found permanent water, *puha*, edible plants and animals, and other things necessary for preserving their culture. The Canadian Valley was one of the cores of their "Empire," but no specific Comanche band or ranchería owned the river valley or the water. Hispano shepherds grazed their sheep up and down the stream's banks and along the tributaries, while *ricos* such as Casimero Romero or Jesus María Gallegos founded *plazas* and nearly self-sufficient estates along the river. Here was free grazing and land for those who were being crowded out of their homeland in the Rio Grande watershed. Hispanos viewed the river and watershed as community resources, even when that community was led and owned by a *rico patron*. The Anglo-Texan ranchers who followed the Hispanos saw the stream as a private resource and a commodity, just one of the ingredients needed to turn domestic cattle into cash

money and corporate dividends. Undeveloped waters were useless, and the clamor to harness, channel and put the Canadian to use came from the newest arrivals to the watershed as Anglo-Americans tried to turn the region from a "frontier" into "civilized" and prosperous farms and small ranches.

The story encapsulated in the tale of the Canadian is both familiar and new. Familiar because the progression of Native American – Hispano – rancher – farmer – urbanite is common in the larger story of the American Southwest, but new because it has not been told in the context of the Canadian River. The pioneering regional historian Frederick Rathjen wrote a history of the Texas Panhandle from the paleo-Indians through to the arrival of ranches and barbed wire, but stopped there. J. Evetts Haley and David Remley told the tale of the greatest ranches and ranchers along the Canadian and Red Rivers, but no one has yet put the river at the center of the story. The Canadian is a river of connections, linking mountain and plains, farmers and hunters, ranchers with meat and money markets in Dundee, Scotland and Chicago, and irrigation farmers to engineers in Washington D.C. The Canadian watershed's story complicates what we think we know about the west by adding the environment back into the tale. And here as well one can see the confusions and complexities of water's roles in society, albeit on a smaller scale than in the tales of California or of the Colorado River. Although small compared to the Colorado, the Canadian still attracted national and international attention on the occasions when it added to massive floods, sheltered "renegade Indians," fed the beef bonanza and ranching frenzy of the 1880s, or played a supporting role in Dust Bowl documentaries. More prosaically, the Canadian served as a communications and transportation corridor much as later railroads and highways did, and do. Ideas, animals, pathogens and goods traveled east and west along its banks and north and south from this rung in the "ladder of rivers." The Canadian's story helps us see the larger

picture, adding a new piece to the puzzle, a new thread to the tapestry of history western and of environmental history.

Also new is the incorporation of geology and hydrology into the river's story. Environmental history brings the river "to life" by adding physical details back into the tale. The effects of droughts and floods on the people of the area have been well described in the studies about the Dust Bowl and in more limited discussions of ranch life, but the saga of how changing physical climate and new human cultures altered the river, and how people then dealt with the new limitations and possibilities imposed and provided by the "new" Canadian remains untold until now. The Canadian is as much a character in the history of the High Plains as are Ten Bears, Charles O'Donel and Governor Clyde K. Tingly, and the story of how it reacted to human endeavors and meteorologic events deepens our understanding of the region's history and of human and environmental interactions at large.

One question that scholars of environmental history have considered is that of environmental degradation and pauperization over time, of species loss and changes to the regional ecosystem caused by human and specifically by European activities in the Americas. Setting aside the tricky matter of "degraded from what baseline," the question as applied to the High Plains is a valid one. The environmental and science historian Carolyn Merchant describes a process of "ecological revolutions" in the early history of New England that included human cultural shifts from viewing "nature" as "self-active" i. e. as endowed with an identity and spiritual force (the Comanches' *puha*), to "nature" as subordinate to but a critical part of God's plans and will, and finally as something to be acted upon and shaped by humans. Merchant suggests that in this process, as "nature" lost status, environmental degradation followed due to over-use and abuse of resources that had been somewhat protected by tradition and custom, if not

by laws. This pattern does not seem to fit the story of the Canadian River Valley as well as in New England, in part because of the late date of Comanche arrival. Their mentality, as best as can be determined, was close to that of the entrepreneurial Spanish and Anglo-Americans, and while the Comanches did see parts of their environment as possessing spiritual power, or *puha*, they do not appear to have seen the landscape as being sacred in and of itself, or in need of some form of perservation. There is no known Comanche equivalent of the Navajos' sacred homeland, for example. In terms of effect on the landscape, the ecological revolution occurred around 1900, when farming replaced pastoralism and ranching as the predominant land use and economic engine in the region. Comanche, Hispano and early Anglo land use differed more in scale than in actual effect on the Canadian River Valley. Although the three groups had relatively different cultural "drivers," their effects on the landscape remained similar until plows broke the plains.[6]

A Word on Terms

"Frontier" has become a loaded word in the history of the U.S. West and one with multiple perceived meanings. Frontier conjures up images gunfights and wild Indians, saloons and stampedes and young Anglo men on horseback fleeing from the sight of an honest woman. In this case, "frontier" refers to a borderland, a place of exchange and adaptation where ideas and technology as well as people advance and retreat as conditions demand. Here Hispanos taught Comanches how to hunt bison with the lance and traded their maize, bread and fabric for jerky,

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[6] For an example of the question of degradation proposed and then later revised, see Elinor G. K. Melville, *A Plague of Sheep: Environmental Consequences of the Conquest of Mexico* (New York: Cambridge University press, 1997) and Karl W. Buntzer and David M. Helgren "Livestock, Landcover and Environmental History: The Tablelands of New South Wales, Australia, 1820-1920," *Annals of the American Association of Geographers* 95, No. 1 (2005) and Karl W. and E. K. Buntzer, "The Sixteenth-Century Environment of the Central Mexican Bajío: Archival Reconstruction from Colonial Land Grants" in K. Mathewson, ed. *Culture, Place and Form* (Baton Rouge: Geoscience and Man Publications, 1993); Carolyn Merchant, *Ecological Revolutions: Nature, Gender and Science in New England* (Chapel Hill: University of North Carolina Press, 1989), 2, 6, 24.

hides, horses and slaves. The Comanches taught Hispanos how to survive on the Plains, and contributed to the legends and gene pool of those living near *Comanchería*. Anglos adapted Hispano cow handling techniques to English cattle-raising practices, adding technology in the form of windmills, barbed wire, railroads and refrigeration to create an empire of cattle that outpaced the Hispanos' empire of sheep. All three cultures had to deal with the vagaries of the High Plains environment.

This work uses "environment" rather than "nature" or "natural" to describe peoples' non-human surroundings. "Nature," from the Latin *natura* and Greek *physis*, has changed meanings over time depending on the author and the age. "Wilderness," another term that can be used to refer to the non-human environment, also carries too many meanings and connotations. Therefore, in order to minimize misunderstanding and confusion, this writer prefers "environment," from the old French term meaning "to house" or "enclose within a circle." The Comanches had no term for either concept, using instead specific descriptions of locations. The Hispanos who settled the Canadian Valley seem to have been more interested in surviving and developing their farms and ranches than in musing about their surroundings, at least judging by the surviving sources. That was certainly true of the Anglo-Texan ranch managers who followed, although some set pen to paper to describe how attractive and rich the area could be at the best of times.[7]

For similar reasons the author uses Comanche, Hispano and Anglo-Texan instead of *Numunuh*, Latino/Mexican/Chicano and Euro-American respectively. Readers not familiar with

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[7] Terry G. Jordan, *North American Cattle-Ranching Frontiers: Origins, Diffusion and Differentiation* (Albuquerque: University of New Mexico Press, 1993) 7; Roderick Frazier Nash, *Wilderness and the American Mind* 4th Edition (New Haven: Yale University Press, 2001), xiii, 2, 6.

trends in academic discussions and historiography will probably find Comanche more familiar and less confusing, and the modern *Numuhu* call themselves 'Comanche' as well as "the people." Hispano/a is the specific name for those people of Spanish and Native American descent who lived within the Rio Grande watershed of what is now New Mexico prior to 1848 and who possess specific cultural and genetic attributes. Despite later migrations of people from Mexico and Latin America, Hispanos remain culturally distinct and during the period covered by this dissertation did not consider themselves to be the same as the "newcomers," either Anglo or Latino/a. However, since they are descended from Europeans, it makes use of the term "Euro-American" impractical and confusing. Since Texans, people from Scotland, and Hispanos could all be correctly described as "Euro-Americans," this author prefers to use Anglo-Texan or Anglo-American for the Yankees, Anglos, gringos and other non-Hispanos and non-Indians who eventually came to dominate the economy and culture of the Canadian River watershed. The African-American presence in the area remained quite limited during the period covered in this work and they lived and worked primarily in Amarillo. Although a factor in the history of that city, African-Americans as a group played only a very limited role in the homesteading, ranching and trading in the area, and their story is told elsewhere.[8]

Other terms are defined in Appendix B, found at the end of the work.

Having clarified the words used to tell the river's story, now let us turn our attention back to the river itself.

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[8] Richard L. Nostrand, *The Hispano Homeland* (Norman: University of Oklahoma Press, 1992), xiv, 8. The author found less than ten known African-American ranch employees between 1875 and 1910, including the well-known figures of 'Bones' Hooks and George McJunkin. More African-Americans were employed by the railroad, but they had very little to do with the Canadian River proper.

The Place and Its Origins

Where was this river of connections, and what did it look like? Imagine a red-tailed hawk or turkey buzzard soaring in the early morning sky over the center of the Texas Panhandle, two thousand feet above the ground. It is late spring in a good year, 1840 perhaps, a year where the rains have come and the grass on the plains is green and fresh. Below the bird's wings, a gash cuts the High Plains of the Llano Estacado Plateau in two north and south. The bird flies west, the sunshine warm on her back as she follows the river upstream. A broad double valley surrounds the Canadian River. The inner valley, containing the stream and its floodplains, is perhaps two to four miles (3.2 – 6.43 km) across and relatively level, dotted here and there with trees and interrupted by the green and brown strips and sprawls of reedy wetlands and marshy areas. Rolling, broken lands stretch north and south away from the river, covered in short grass and cut by streams and arroyos, dotted with collapse caverns and steep-sided mesas. Here and there broad trails cut across the valleys where bison have found the easiest ways and places to cross the rough ground. These are the Canadian River Breaks, and they extend forty miles across (64.4 km) and more in the area known as Texas.

As the bird soars westward, the Breaks begin opening wider, their northern rim softening into sand hills and eventually blending into a smooth rise that slopes onto the plains in New Mexico. Far to the north, the extinct volcanoes of northeastern New Mexico rise over a sea of whispering grass. To the south, the Breaks flatten into a broad lowland that stops abruptly at the near-vertical four-hundred foot wall of the southern Llano Estacado. Now the river dips into a narrow, bedrock-lined canyon for a time, and mesas dominate the landscape: Tucumcari Mountain, Mesa Rica, Mesa Redondo, and other remnants of rock layers long since washed away. The air has grown drier and clearer, and keen eyes spot rodents and pronghorn amid the

clump grasses below, while strong wings catch rising warm air and use it to climb higher into the early afternoon sky. The river's inner valley leaves the rock-walled cut and spreads back out in a sandy channel. The banks and floodplain are lined with brushy willows and a few cottonwood, hackberry, and other water-loving trees, while hard and twisted cedar and a few piñon pines dot the gentler slopes of the mesas. Abruptly the river turns almost due north and winds snake-like through a gorge cut through layers of volcanic ash and basalt. To the west and north a wall of stone, the Canadian Escarpment, forces the river to remain east of the mountains until the stream reaches Raton, NM. Now the bird's flight curves west, riding thermals up, up and into the shadow of a building storm. Off to the west, up in the snowfields and aspen forests of the Sangre de Cristo Mountains, the Canadian River's first waters collect to make their long journey to the sea. The bird wheels and swings back to the east, seeing the towering storms exploding up from the moist spring air to rake the plains and feed the river, but the bird does not care. She has other things in her mind.[9]

The story of the Canadian River and its valley begins where most rivers end: the sea, and the salts left behind by the retreat of ancient oceans. In the earliest time, the Precambrian through the Triassic, the Amarillo-Wichita Mountains dominated the regional landscape. A river flowed from what is now Amarillo Texas, west until it vanished somewhere in modern Nevada or California. Erosion and time wore the old mountains away, eventually burying them. Meanwhile, over ages and eons, the prehistoric seas advanced and retreated as the land under the modern High Plains rose, then eroded, then rose again as tectonic forces lifted the ancestral Rocky Mountains, created volcanoes and elevated the Sangre de Cristo mountains to the west of the

[9] Based on author's observations on flights and drives through the area, 1980-2010.

area. In time, sand dunes, marshes, salt-flats and eventually grassy savannas and semi-arid steppes characterized the region, all part of a long sweep of land formation and erosion.[10]

During the Pennsylvanian Period (325-286 million years ago [mya]), the area now called the Sierra Grande Arch rose to the west and north of what became the Canadian River Valley, providing a source of debris that washed over the lowlands to the east. At the same time, areas far below the modern surface of the High Plains sank or remained stable compared to the uplift taking place farther west, initiating the formation of the Permian Basin to the south of the High Plains and of the Dalhart Basin, which underlies part of the Canadian Valley. In time the seas advanced again and during the Triassic Period, roughly 245 to 210 m.y.a., shallow seawaters covered much of the area that is now the Texas Panhandle and eastern New Mexico. To the west and north, rivers drained the ancestral Rocky Mountains and eroded them, carrying sand, silt and gravel to the shores of the Permian sea. Mudflats, saltpans, salt-flats and beaches formed where the land and waters met. Saltwater left behind by high tides and floods evaporated quickly in the warm climate, depositing layers of salt and gypsum before the next cycle of advance and retreat buried the minerals in sediment or added another layer of salts to the earlier mass. These layers grew thicker and thicker, slowly filling in the older low area of the Dalhart Basin, lapping around the relatively high ground of the Amarillo Arch/ Amarillo Mountains east of the basin, and

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[10] Nancy R. Riggs, T. M. Lehman, G.E. Gehrels and W.R. Dickinson, "Detrital Zircon Link Between headwaters and Terminus of the Upper Triassic Chinle River – Dockum Paleoriver System." *Science* 273, No. 5271 (July 1996), abstract on Web of Science; Kelly Nicole Stair, Jennifer D. Fox, Thomas Lehman, Nancy R. Riggs, James D. Gleason, "Detrital Zircons in Upper Triassic Strata of the Lower Chinle and Dockum Groups, New Mexico and Texas," paper 10-5 presented at the Geological Society of America 2005 annual meeting, abstract, www.gsa.confex.com/gsa/2005CD/finalprogram/abstract_85428.htm

forming layers of salt and anhydrite tens of feet thick. It is from dissolution of these layers that the Canadian Valley was created.[11]

After the seas retreated, the land rose, and over time, streams cut valleys in the old sea-sediment, creating low spots in the earlier salt flats. The Cretaceous period (145 to 75 m.y.a.) marked the beginnings of the formation of the Sangre de Cristo highlands. The plains to the east were first inundated by the Western Interior Seaway and then also lifted up, eventually forming the High Plains. The subsequent Eocene Epoch of the Tertiary Period (beginning roughly 75 mya) was marked by the Laramide Orogony (70-55 mya), a period of mountain building and volcanic activity that further raised the southern Rocky Mountains, notably the Sangre de Cristo Range in what is now New Mexico. The climate of the time was wetter than modern regional climate, and the larger amounts of precipitation eroded vast amounts of gravel, sand and other material off the young mountains and spread them first through the old valleys, then across the surrounding plains as the lowlands filled with sand, silt, clay and gravel. This blanket of porous sediment, called the Ogallala Formation, formed over the layers of salt and gypsum-laced Triassic redbeds. As the area became more arid during the Pleistocene ice ages (2.5 mya to

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[11] Mark W. Presley, "Salt Deposition Systems: An Example from the Tubbs Formation" in *Geology and Geohydrology of the Palo Duro Basin, Texas Panhandle: A Report on the Progress of Nuclear Waste Soil Feasibility Studies 1979* ed. Thomas C. Gustavson (Austin: University of Texas Press for Texas Bureau of Economic Geography, 1980) 24, 25; Douglas A. McGookey and Arthur G. Goldstein, "Structural Influence on Deposition and Deformation of the Northwest Margin of the Palo Duro Basin," in *Geology and Geohydrology of the Palo Duro Basin, Texas Panhandle: A Report on the Progress of Nuclear Waste Soil Feasibility Studies 1981* ed. Thomas C. Gustavson (Austin: University of Texas Press for Texas Bureau of Economic Geography, 1982), 28, 30; Thomas C. Gustavson, "Structural Control of Major Drainage Elements Surrounding the Southern High Plains" in *Geology and Geohydrology of the Palo Duro Basin, Texas Panhandle: A Report on the Progress of Nuclear Waste Soil Feasibility Studies 1981* ed. Thomas C. Gustavson (Austin: University of Texas Press for Texas Bureau of Economic Geography, 1982), 176, 177; William R. Muehlberger, Sally J. Muehlberger, L. Greer Price, *High Plains of Northeastern New Mexico: A Giude to Geology and Culture* (Socorro, NM: New Mexico Bureau of Geology and Mineral Resources of the new Mexico Institute of Mining and Technology, 2005), 12, 14, 102.

12,000 BCE), layers of wind-blown dust covered the Ogallala. The Ogallala became the source of the groundwater that fed springs and streams in many parts of the southern High Plains, as well as contributing greatly to the creation of the Canadian River Valley.[12]

At the same time, erosion of the highland created by the Laramide orogony continued from both east and west. Streams re-developed their drainages, slowly cutting away the eastern edges of the Llano Estacado plateau and washing the Ogallala material down into the Gulf of Mexico. At the same time, streams arising the Rocky Mountains sought their way downhill and seaward, eroding new valleys. While surface water attacked the High Plains from above, water seeping out of the Ogallala dissolved the anhydrites, gypsum and salt layers in the buried Triassic redbeds, causing sink holes and depressions that in turn captured more water and accelerated the sub-surface erosion in a continuing process. Chemical analyses of water from the Canadian and Prairie Dog Fork of the Red River, a younger stream flowing just south of the Canadian, reveal large volumes of salt and other chemicals that give the waters a brackish taste even after it is purified for drinking. Early residents of the region used saline springs within the Canadian Valley to make salt for trade with mountain settlements, for domestic use, and later for sale to local ranches.[13]

This subsurface dissolution led to the creation of the double valley called the Canadian Breaks. As the land eroded from below, streams took the developing path of least resistance for their main channel. This in turn lowered the water table and accelerated local erosion, as did

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[12] Muhlenberger et al, *High Plains of Northeastern New Mexico,* 102, 14-15; Paul N. Dolliver, "Cenozoic Evolution of the Canadian River Basin." *Baylor Geological Studies Bulletin No. 42*, Spring. (Waco, TX: Baylor University Press, 1984), 13, 27, 40, 70-71. This work uses the "Common Era" / "Before Common Era" dating system for post Pleistocene dates.

[13] Dolliver, *Cenozoic*, 70;Thomas C. Gustavson, "Rates of Salt Dissolution" in Gustavson et al, *Geology and Geohydrology*, 1980, 73.

alternating periods of wetter and drier climate during the Ice Ages and interglacials. This caused the Canadian to erode upstream, or "headwards," capturing smaller streams and becoming the primary drainage between the Cimarron to the north and the Pecos. Evidence of this process is visible today in breccia columns, the pillars of lightly-cemented debris that piled up in what were once sink holes, in the on-going formation of sink holes to the south and east of the Canadian, and in the remains of old faults caused by the dissolution of salts far below the current surface of the High Plains and the Breaks.[14]

By the end of the Pleistocene, roughly 12,000 years ago, a human walking along the edges of the Canadian Breaks would have seen a broad cut in the uplands very similar to the one modern visitors see. He or she would probably have noticed more trees and brush scattered over the uplands, making them appear much like the modern African savannah. Mammoth and giant bison, armadillos five feet (1.52 m) long from nose to tail, giant land tortoises and other long-vanished species populated the region, but the geological valley would have looked much as it does now. The river itself, however, might have appeared quite different depending on our imaginary traveler's time of visit.[15]

Like all rivers and streams, the Canadian alternated between deposition and erosion. In times of increased rainfall and snowmelt, including the period between 2.5 and 3.0 mya, when

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[14] Thomas C. Gustavson, "Collapse Chimneys, Collapse Surfaces and Breccia Zones," in Gustavson et al, *Geology and Geohydrology*, 1980, 88; P.A. Wisniewski and F.J. Pazzaglia, "Epeirogenic Controls on Canadian River Incision and Landscape Evolution, Great Plains of Northern New Mexico," *The Journal of Geology* 110, No. 4 (July 2002), 439, 441; Thomas C. Gustavson, "Geomorphic Development of the Canadian River Valley, Texas Panhandle: An Example of Regional Salt Dissolution and Subsidence" *Geological Society of American Bulletin* 97, No. 4, (April 1986), 470, 471, 472.

[15] E.C. Pielou, *After the Ice Age: The Return of Life to Glaciated North America* (Chicago: University of Chicago Press, 1991), 233; Paul H. Carlson, *Deep Time and the Texas High Plains: History and Geology* (Lubbock: Texas Tech University Press, 2005), 32-33.

scientists believe precipitation was three times modern levels but upland erosion was much less because of the increased plant cover, the Canadian and other streams cut into their beds as increased flow combined with decreased sediment to produce "hungry water."[16] The streams dug earlier sediments out of their beds and washed them away; dissipating energy as the hydrologic systems worked to balance water flow speed and volume with the decreased sediment volume and size in order to produce a more stable flow regime. This process made the Canadian into a **degrading** stream, one that cut down into its bed, leaving the earlier floodplain high and dry. The Canadian was wider and deeper, twisting back and forth across its valley and cutting a lower channel within its banks. At other times, when lower precipitation reduced river flows, or greater volumes of sediment loads caused by higher inflow of earlier-eroded rocks and sand overloaded the stream system, the Canadian and its tributaries **aggraded**, building up their beds and filling old channels in a pattern called "cutting and filling," just as the Ogallala sediments filled now-buried valleys. The Canadian would have looked much as it does in present times and climate conditions, although larger and with less variation in flow from season to season.[17]

The end of the ice ages brought changes to the region's climate that directly affected the Canadian and other streams. A shift in the pattern of where the jet stream flowed over North America produced a drier climate where yearly rainfall averaged between 24 and 19 inches (609.6 – 482.6 mm) per year. This is termed a semi-arid climate and in the High Plains is characterized by precipitation that falls mainly in April – June, with a secondary peak in August and September due to the influence of the "monsoon" rains farther west. Evaporation and

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[16] Dolliver, *Cenozoic,* 37.

[17] Dolliver, *Cenozoic,* 37, 40, 43; Thomas Dunn and Luna B. Leopold, *Water in Environmental Planning* (New York: W. H. Freeman and Company, 1978), 599, 605, 607.

transpiration rates are high, averaging 60 inches (1524 mm) per year because of clear skies and constant winds from the south-southwest that remove moisture. Most atmospheric moisture comes up from the Gulf of Mexico in spring, or from the Gulf of California and Pacific Oceans in late summer. Droughts of various kinds are common and have lasted for decades. The regional climate produces sunny and warm summers, stormy springs, cool, dry autumnal months and generally mild and dry winters that are occasionally interrupted by blizzards that can leave up to four feet of snow with much higher drifts. This episodic precipitation had a direct effect on the Canadian's flow. [18]

Like many other streams and rivers in the western North America, the Canadian was "flashy". Groundwater seeping out of the Ogallala Formation provided a minimum base flow for the Canadian by feeding the tributary springs and streams that drained into the river. Because the river and its tributaries the (Wet) Cimarron and Conchas head in the Rocky Mountains, spring snowmelt swelled them and led to an annual June rise of varying height and strength. In addition to these more-or-less predictable floods and flows, the Canadian frequently rose and fell without warning. Localized thunderstorms dropped large volumes of rain over small areas, saturating the ground so that any additional precipitation flowed quickly into the washes, arroyos and streams, then into the Canadian. This rapid inflow of water caused flash floods that would bring the river from only inches deep to feet deep within hours, then sinking almost as quickly to leave behind super-saturated quicksand that gave the Canadian an infamous reputation. These fast bursts of water and the soil they washed into the stream contributed to the Spanish name of the river.[19]

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[18]César N. Caviedes, *El Niño in History: Storming Through the Ages* (Gainesville, FL: University of Florida Press, 2001), 202, 207; Fred B. Pringle, *Soil Survey of Potter County, Texas* (Washington, D.C.: Government Printing Office, 1980), 2.

[19] Dunn and Leopold, *Water in Environmental Planning,* 281-282, 500. The Wet Cimarron flows due east out of the Sangre de Cristo Mountains into the Canadian. The "Dry Cimarron" heads

There are several stories about how the Canadian acquired its name. The Spanish initially called it the *Rio de la Magdalena* because it was first reached on the Feast of St. Mary Magdalene, or the *Rio Colorado*, the vermillion river, because of the red sediment the stream carried while in flood. Until the 1870s the New Mexicans referred to the stream as Rio Colorado, and that name appears on San Miguel County tax records as well as in the name of the Red River Valley Company that owned the Bell Ranch. Contrary to local legend the stream's official name does not derive from the presence of Canadian fur trappers, in part because the nation of Canada did not exist at the time that the French were present in the region. Instead "Canadian" derives from the Spanish word *cañada/ cañadian* meaning a box-canyon or sheepwalk, both of which describe the shape of the valley. At some point the tilde (ñ) wandered off, leaving the Canadian River with its current name. What the first residents of the valley called the biggest stream remains unknown.[20]

Humans have lived in the Canadian Valley and high plains for tens of thousands of years. Stone tools and bison kills dating to the Clovis and Folsom cultures are the earliest evidence of humans' presence in the area. It is quite likely that the large paleobison (*Bison antiquus, B. priscus*) sheltered in the Breaks just as modern bison did, and that human hunters followed them. The river also provided a natural trade corridor for Archaic peoples to exchange pottery, obsidian and cowry shells from the West Coast for native copper from the Great Lakes and bison hides and meat, much as later Native Americans did. The first people known to have lived permanently

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east of Raton, flows east into Oklahoma and Kansas, and has less water than the more southerly stream of the same name.

[20] Robert Julyan, *Place Names of New Mexico* Revised Edition (Albuquerque: University of New Mexico Press, 1998), 58-59; John Miller Morris, *El Llano Estacado: Exploration and Imagination on the High Plains of Texas and New Mexico, 1536 – 1860* (Austin: Texas State Historical Association, 1997), 254.

in the Canadian Valley in Texas and New Mexico, primarily in Texas, are called the Antelope Creek people.[21]

Antelope Creek people lived year around in the Canadian Valley. They built single-storey, multi room dwellings of stone slabs, wood and adobe on terraces and outcrops along the river in what is now Potter, Oldham and Moore counties in Texas. During the growing season they erected brush shelters closer to the streams and springs, where they cleared fields and raised corn (maize), beans, and squash. The Antelope Creek farmers also hunted bison on the uplands, and deer, turkey and other game, as well as catching fish from the Canadian. They did not irrigate directly from the Canadian, most likely because it was too unpredictable and silty. Instead they preferred to use the permanent spring-fed tributaries for their water sources. The Antelope Creek people also seem to have traded both eastward and westward with the farmers of the low rolling plains and the Pueblo peoples of the Rio Grande drainage.[22]

By 1520 CE the Antelope Creek people had abandoned the Canadian. Archaeologists are not certain why. Some suggest that the migration of a group of Athapaskan people, later called the Apaches, forced the sedentary valley dwellers out of the Breaks and into the plains to the east. Another possible cause was that an extended drought in the mid 1400s made farming

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[21] Vance T. Holliday, *Paleoindian Geoarchaeology of the Southern High Plains* (Austin: University of Texas Press, 1997), 124,125; Christopher Ray Lintz, *Architecture and Community Variability within the Antelope Creek Phase of the Texas Panhandle* Studies on Oklahoma's Past # 14 (Norman: University of Oklahoma for Oklahoma Archaeological Survey, 1986), 30. Although increasing numbers of archaeologists believe that people inhabited the plains before 12,000 BCE, Clovis remains the oldest confirmed and widely accepted Paleo-Indian cultural group in North America. See Jack L. Hoffman and Russell W. Graham "The Paleo-Indian Cultures of the Great Plains" in W. Raymond Wood, ed. *Archaeology of the Great Plains* (Lawrence: University Press of Kansas, 1998), for a good summery of the debate.

[22] Lintz, *Architecture and Community Variability,* 33, 214.

unreliable and diminished the bison hunt so much that it was no longer possible to survive in the Canadian Valley. If the latter proves true, then the Antelope Creek farmers were the first known people to realize that a sedentary, farming-based lifestyle is not feasible in the truly long term on the High Plains because of the unpredictable weather and semi-arid climate. Later peoples would also discover the difficulties of living on the High Plains, and it is with one of those peoples, the *Numunuh*, or Comanche, that the Canadian River's story unfolds. [23]

[23] Ibid., 253, 239.

CHAPTER 1 - River of Bison

Human activities have been shaping the Canadian River since the time of the bison. The setting would have been late autumn on the short grass plains south of the Canadian Breaks, sometime between the years 1730 and 1870. Picture a party of well-mounted horsemen armed with bows, arrows and lances. The black-haired men are determined to kill enough bison to secure food, and as importantly, thick-haired hides for winter robes and for trade. The hunters wait for the signal, their fastest horses ready and their lances and arrows sharp. A warm southwest wind carries the scent of dry soil and whiffs of urine and fresh dung. Upwind of the *Numunu*, or "the People," a herd of shaggy, dark-brown bovines grazes quietly on the tawny, knee-high short grass of the plains south of the river. Each hunter has prepared carefully, those with hunting "medicine" (*puha*) being sure to keep their *puha* free from contamination so that they will do well on the hunt. At last their leader gives a signal and they kicked their mounts into a fast run. The men charge into the startled herd, dropping the reins and guiding their horses with their knees while using their hands to fire arrows or to drive long-bladed lances into the animals' flanks like their Spanish trade-kin to the west do. An equine scream cuts the rumble of hooves and hunters' calls as a wounded bull turns suddenly and gores a horse, ripping open the animal's side with short, sharp horns as the rider throws himself clear. His adopted brother distracts and kills the bull.[1]

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[1] Gerald Betty, *Comanche Society: Before the Reservation* (College Station: Texas A&M University Press, 2002), 67; Ernest Wallace and E. Adamson Hoebel, *The Comanches: Lords of the South Plains* (Norman: University of Oklahoma Press, 1952), 57-58; Pekka Hämäläinen, *The Comanche Empire* (New Haven, CT: Yale University Press, 2008), 102; Joseph Daniel Gelo, *Comanche Belief and Ritual* (PhD diss., Rutgers University, 1986); Although the popular name

At last the rest of bison escape, leaving behind twenty of the herd dead or mortally wounded. The herd continues galloping farther away from the river until it reaches apparent safety. The tired animals mill around one of the few late-season ponds on the upland, drinking thirstily and then moving to graze on the grasses and leafy forbs around the water's edge. Soon blowing snow will cover the grass and the herd will seek shelter from the cold of winter in the rugged valleys at the edges of the plains and in the great cut that breaks the plains into north and south. But that will be later. Now the bison graze, drink and rest, wary of another attack from men or wolves, the two great predators of the plains.[2]

The story of how the hunters, their horses, and the bison used and shaped the plains and the Canadian Valley is a tale of cultural adaptation, practicality and eventual overuse of a seemingly limitless resource – the bison. By the time humans reintroduced horses to the plains of North America, bison had been shaping the ecology and economy of the plains for millennia. They, along with prairie dogs and humans, were a keystone species whose activities and needs shaped the flora and fauna of the region. The grasses and forbs of the plains and valleys converted solar energy into carbohydrates, which bison changed into protein, nitrogen and ammonia. These gregarious animals supported wolves and humans, as well as encouraging the dominance of short grasses, most notably blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloë dactyloides*), on the High Plains. Although fire played a role in determining the composition of the botanical community that dominated the uplands, bison played a greater part.

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is "buffalo," this work will use "bison" unless the person or document quoted used the popular term.

[2] Tom McHugh, *The Time of the Buffalo* (Lincoln: University of Nebraska Press, 1979), 20, 171; Dan Flores, "Bison Ecology and Bison Diplomacy Redux: Another Look at the Southern Plains from 1800 to 1850" in *The Natural West: Environmental History in the Great Plains and Rocky Mountains,* (Norman: University of Oklahoma Press, 2001), 66.

In turn, humans depended on the animals for food, shelter and fuel, and traded bison products east and west to supply needs that the resources of the plains could not meet. Of these southern plains traders and hunters, the last and perhaps most successful were the Numunuh - "the People;" or as the Ute named them, the "komantica," the Comanches. Horses brought the People onto the plains, but bison provided their sustenance. Later arrivals, most notably Anglo-American commercial buffalo hunters, brought the years of the bison to a close, but not before the Comanche and their trade associates left their mark on the Canadian River Valley.[3]

Some form of ungulate grazer has lived on the Great Plains of North America since the Pleistocene. Archaeologists have found skulls and bones of the very large and now-extinct *Bison antiquus* and *B. latifrons* in long-dried ponds, old streambeds, in sand-filled valleys, and at the base of steep slopes all across the plains. Their descendents, the modern bison (*B. bison*) were members of a "weedy" species; that is, one that was prolific and quick to fill available niches and habitats as they became available. The demise of the megafauna such as the older bison species, mastodon, and mammoth at the end of the most recent ice age left just such a vacancy and bison took advantage of the opening. Some scholars theorize that the decline of population of Native Americans between 1500 and 1800 allowed the species to expand its range even farther as human predation decreased. When Europeans first made note of the animal, they found bison in Mexico, north to the taiga, as far west as the Rocky Mountains and east into the Ohio River

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[3] Elliott West, *The Contested Plains: Indians, Goldseekers and the Rush to Colorado* (Lawrence: University Press of Kansas, 1998), 23,24; Benjamin Carrol Tharp, *Texas Range Grasses* (Austin: University of Texas Press, 1952), 60; Frank W. Gould, *The Grasses of Texas* (College Station: Texas A&M University Press, 1975), 351, 355; Flores, "Bison Ecology," 59.

Valley. Vast herds foraged over the grasslands and the only check on their numbers seemed to be humans, wolves, and events such as floods and droughts. Bison were supremely successful.[4]

If success is determined by the number of individuals in a species, then bison prospered on the plains. Early observers all commented on the seemingly endless herds of animals. Francisco Vasquez de Coronado said in 1541 that they were too numerous to count and at another point he claimed that the "plain is as full of hunch-backed kine as Serena in Spain of sheep." Later estimates of the total population of plains bison varied, although if one were to depend on the accounts of travelers who described oceans of dark-brown, shaggy animals eating, running and migrating, one might be tempted to borrow astronomer Carl Sagan's description of stars: "billions and billions" of bison. However, not all subsections of the Great Plains could support large numbers of bison, even in good years. Carrying capacity, or the number of acres required to support an animal, varied with the type of soil, the amount of precipitation and the type of grasses available. The short grass steppe supported fewer animals than did the lusher, wetter tall grass prairies of the eastern Great Plains. Historian Dan Flores, after considerable research, suggests that thirty million bison probably roamed the plains. Other authors, including naturalist Tom McHugh, support this number, which is based on the 1910 agricultural census and supported by detailed research into county-by-county carrying capacity, although there are some scholars who posit numbers as high as sixty million. The southern plains around the Canadian River probably supported approximately eight million bison, less in dry years. Even with

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[4] Flores, "Bison Ecology," 57; Jerry N. McDonald, *North American Bison: Their Classification and Evolution* (Berkeley: University of California Press, 1981), 57, cited in Paul H. Carlson, *Deep Time and the Texas High Plains: History and Geology* (Lubbock: Texas Tech University press, 2005), 56; McHugh, xviii, 25; Dale F. Lott and Harry W. Greene, *American Bison: A Natural History*, (Berkeley: University of California Press, 2002), 69-72; see also D. B. Bamforth, "Historical Documents and Bison Ecology on the Great Plains," *Plains Anthropologist* 32, No. 2.

Flores's and McHuges's estimates, it is no wonder that Native Americans thought the bison were without number, and Euro-Americans searched for ways to describe the huge numbers of large animals they encountered while crossing the plains. Obviously, the bison found the Great Plains to be a most suitable habitat.[5]

The anthropologist Douglas Bamforth states that bison were "the single most important resource in the [short grass plains] region." Without water and grass there would have been no bison, but if one considers only secondary resources, i.e. those that derive from the elements of water, air, earth, and grass, then Bamforth's point is valid. He argues, and other scholars concur, that peoples' great reliance on the bison determined both the social organization and the possible numbers of humans living on the plains. According to Bamforth, the scattered nature of bison herds, partly a result of the patchiness of the flora on the southern plains, led to less complex human societies than those found east and west of the region. Bamforth theorizes that as bison numbers increased or herds became more sedentary because of prolonged wet periods or a decline in predation, the plains ecosystem could support more complicated societies. That pattern held true to a limited extent prior to the arrival of Europeans and horses on the plains. Success for humans depended to a great extent on good conditions for the bison.[6]

Two keys for the bison's success were its adaptability and endurance. Although they are ruminant grazers and prefer grasses, bison are not as selective as domestic cattle and will browse succulents and forbs as well as graze. Their bite pattern differs from domestic cattle in that bison

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[5] McHugh, *Time of the Buffalo,* 13, 43; Carl Sagan in "Cosmos" Episode 1; Flores, "Bison Ecology" 58; McHugh, 17; James E. Sherow, *The Grasslands of the United States: A Environmental History* (Santa Barbara: ABC-Clio, 2007), 270; Dougals B. Bamforth. *Ecology and Human Organization on the Great Plains* New York: Plenum Press, 1988), vi; The population of the US in 1860 was thirty one million. U.S. Census Bureau, 1860 census.

[6] Bamforth, *Ecology and Human Organization,* vi, 30, 54, 108, 113.

can clip closer to the ground like domestic sheep, rather than grasping grasses with their tongues as cattle do. This allows them to eat more of each plant. Although they drink when water is available, bison can go for several days without water if necessary. Bison see very well and like many prey species have a very sensitive sense of smell. Their bulky frames and large size are deceptive – bison run very quickly when they need to, and have been clocked at up to forty miles per hour (64 kph) for short sprints. Their grazing habits may be responsible for the success of buffalo grass, which is tolerant of grazing and propagates either from seeds or through runners: shoots that extend from the base of the plant and take root. Blue grama also propagates via runners when heavily grazed, in a process called "tillering." Both buffalo grass and grama grasses remained common to the dry high plains surrounding the Canadian River valley, while the ephemeral playa lakes supported other species of grass, including the highly nutritious wheat grasses. Rancher Charles Goodnight reported that when he reached the Texas high plains he had found western wheat grass "which stood waist high and was [later] regularly cut for hay." The grassy uplands supported bison in the spring and summer and the valleys gave them cover in the cold season.[7]

The Canadian Valley and the broken lands around the Llano Estacado provided shelter and water for the southern bison herds. Bison found grazing and browse, open water and protection from blizzards and storms in the Breaks, Palo Duro, Tule and other canyons and

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[7] McHugh, *Time of the Buffalo,* 171;D.C. Hartentt, A.A. Steuter and K.R. Hickman, "Comparative Ecology of Native and Introduced Ungulates," in *Ecology and Conservation of Great Plains Vertebrates* eds. Fritz L. Knopf and Fred B. Samson (New York: Springer Verlag, 1997), 76, 80, 91; Charles Goodnight to Tharp, quoted in Tharp, *Texas Range Grasses,* 62; Mary Ann Vinton and Scott L. Colins, "Landscape Gradients and Habitat Structure in Native grasslands of the Central Great Plains" in Knopf and Samson, *Ecology and Conservation,* 10; Matthew R. Loeser, Timothy E. Crews and Thomas D. Sink, "Defoliation Increased Above-Ground Productivity in a Semi-Arid Grassland," *Journal of Range Management* 57, No. 5 (Sept 2004), 442-443.

sheltered areas. The herds spent warmer months on the plains above the Breaks, when the rain-filled playas provided water and the warm-season grasses greened up and grew. During droughts it is likely that larger numbers of bison stayed closer to the Canadian and other perennial streams, or migrated elsewhere as their ancestors had done during the centuries-long drought of the Altithermal (or Atlantic climate period) between 5000 and 3000 BCE.

It is difficult to judge how this long-term presence and the grazing habits of the bison affected the geomorphology of the Canadian. They grazed the waterside and valley-bottom vegetation primarily in winter, when the grasses and forbs were dormant, so the plants would have been able to recover during the normal growing season. Bison are more destructive of young trees than are cattle, and may have been partly responsible for the lack of trees reported by early surveyors and residents of the western portions of the Canadian Valley. No doubt the bison broke down stream banks by trampling them and the sheer mass of thousands of bovines weighting from 750 pounds (341 kg) to 2200 pounds (1000 kg) had to have caused at least short-term stream-bank erosion. More importantly, bison had been trampling, grazing, rolling in, fording and drowning in the Canadian and other rivers for thousands of years by the time Spanish, French and Anglo observers compiled their accounts of bison and the plains, so that the river described in the first written records and that later settlers recalled so fondly was the river with bison. If bison shaped the Canadian River's banks and bed, drought also played a role in the lives of the bison and their river.[8]

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[8] Stanley W. Trimble and Alexandra C. Mendel, "The Cow as a Geomorphic Agent: A Critical Review," *Geomorphology* (1995) No. 13, 243; Hartnett et al, "Comparative Ecology," 81, 91; Chad S. Boyd and Tony J. Svejcar, "Regrowth and Production of Herbacious Riparian Vegetation Following Defoliation" *Journal of Range Management* 57, No. 5 (September 2004), 448, 451.

Like all residents of the Canadian Valley and the high plains, drought caused hardships for the bison and their predators. Even drought-resistant plants such as the deep-rooted short-grasses require water, and without adequate grazing, bison weakened and became more likely to bog in the mud around playas or in the quicksand of the Canadian. Winter-kills and calf deaths also increased, providing a temporary bounty for wolves, coyotes, buzzards and all other carrion eaters. And although bison need less water than do domestic cattle, they still must drink. In years with low spring rainfall, the playa lakes that doted the uplands dried up early in the season and might not have filled at all. That left spring-fed ponds, including Wildhorse Lake (now in Martin Luther King Jr. Park near downtown Amarillo), Rita Blanca Lake (Dallam County, TX), and the groundwater-fed streams in the Breaks and canyons as the only reliable water supplies. Even these could go dry if the precipitation remained scant for extended periods and the local water table declined. During the worst dry periods, such as the Altithermal or in the 1850s-60s, the bison apparently left the plains and migrated east or south, and possibly west into the flanks of the Rocky Mountains. Some of the human bison hunters followed them, leaving the plains to the pronghorn, prairie dog, and the grass-searing southwesterly winds.[9]

Humans have lived in and around the Canadian River as long as the bison have. The first two groups of Paleo-Indians, the Clovis and Folsom cultures, were named for archaeological sites located on or near the high plains in eastern New Mexico. Folsom points are found with the remains of *B. antiquus*, making them the earliest currently known bison hunters. Other peoples came and went through the millennia, including some who augmented hunting by gathering wild

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[9] Hartnentt et al, "Comparative Ecology," 90-91; Marvin Kay, "The Great Plains Setting," in W. Raymond Wood, ed. *Archaeology of the Great Plains* (Lawrence: University Press of Kansas, 1998), 25-27; Marvin Kay, "The Central and Southern Plains Archaic," in Wood, 186; Carlson, *Deep Time,* 60; Gunnar Brunne, *The Springs of Texas* 2nd Edition (College Station: Texas A&M University Press, 2002), 25, 35.

plants and later by also raising corn (*Zea maize*) and beans *(Phasolus vulgaris*). However, hunting and gathering appears to have remained the predominant lifestyle of people living in and around the Canadian until the time of the Antelope Creek people sometime in the 1200s C.E. The later Athapascan *Diné* or Apache also took up a semi-sedentary lifestyle in the Canadian valley and near other plains streams.[10]

Both the Antelope Creek people and the Apache farmed and gardened the tributaries of the Canadian. The Antelope Creek culture appears to have been truly sedentary; groups or individuals left the valley to hunt bison on the uplands but most people remained in the pueblo-like communities within the Breaks. The Antelope Creek people also hunted the deer in the Breaks and fished, caught waterfowl and gathered wild fruits and other plants growing in the Canadian Valley. Pottery shards, turquoise, obsidian, and seashells and other artifacts from excavations and surveys of Antelope Creek sites show that the people traded with the Rio Grande Valley settlements and probably exchanged bison meat and hides much as later plains residents would. Despite their varied resource uses and trade network, by 1500 C.E. people abandoned the Antelope Creek settlements. Archaeologists do not know why, but theories include the effects of a long and severe regional drought and the arrival of the Apache.[11]

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[10] McHugh, *Time of the Bison,* 30-32; Carlson, *Deep Time,* 44-45; Christopher Ray Lintz, *Architecture and Community variability within the Antelope Creek Phase of the Texas Panhandle* (Norman: University of Oklahoma Press/ Oklahoma Archaeological Survey, 1986) Studies in Oklahoma's Past Number 14. Although increasing numbers of archaeologists believe that people inhabited the plains before 12,000 BCE, Clovis remains the oldest confirmed and widely accepted Paleo-Indian cultural group in North America. See Jack L. Hoffman and Russell W. Graham "The Paleo-Indian Cultures of the Great Plains" in Wood, *Archaeology of the Great Plains,* for a good summery of the debate.

[11] Richard R. Drass, "The Southern Plains Villagers," in Woods, *Archaeology of the Great Plains* 421-422; Lintz, *Architecture,* 253; Carlson, *Deep Time,* 76; John D. Speth. *Bison Kills and Bone Counts: Decision Making by Ancient Hunters* (Chicago: University of Chicago Press, 1983), 169, 132-33.

Historic Times

Drought has always been part of life on the southern plains, but some dry spells were far worse than others. As described in the Introduction, collisions of warm, moist air from the Gulf of Mexico with colder air from Canada triggers storms during the spring and early summer. Larger-scale planetary cycles and systems also shape the plains' weather, including the El Niño – Southern Oscillation (ENSO) patterns. Wind shifts in the sub-equatorial Pacific Ocean, driven by relatively high atmospheric pressure off the coast of South America and relatively low pressure over Indonesia, cause changes in air flow that in turn effect sea-surface temperatures off the west coast of South America. Extended periods of time when cold water reaches the ocean surface, called La Niñas, contribute to droughts in southwestern North America by causing the winter storm tracks to shift north and contributing to cooler summer temperatures. These cooler summers weaken the so-called monsoon, reducing the amount of precipitation the region receives between July and September. If this pattern continues for an extended period of time, as seems to have happened during the "Medieval Climate Anomaly" between 1000 and 1300 C.E., it can produce droughts that extend over decades. One of these episodes, possibly combined with or followed by the arrival of the Athapascans onto the southern plains, may have led to the abandonment of the Canadian Valley by the Antelope Creek people and their replacement by the Apaches by 1500.[12]

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[12] César N. Caviedes, *El Niño in History: Storming Through the Ages*, (Gainesville, FL: University of Florida Press, 2001), 8, 202; Daniel R. Cayan, Kelly T. Redmond and Laurence G. Riddel, "ENSO and Hydrologic Extremes in the Western United States, " *Journal of Climate* 12, No. 9 (Sept 1999), 2886, 2892; Celine Herweijer, Richard Seager, Edward R. Cook and Julien Emile-Geay, "North American Droughts of the Last Millennium from a Gridded Network of Tree-ring Data, " *Journal of Climate* 20, No.7, (April 2007), 1354, 1357, 1371.

The newly–arrived Apaches also used the resources of the Canadian Valley. Bands of Apaches grew maize, beans, squash and other crops, while hunting the uplands and river breaks as had their predecessors. The Apaches also raided and traded east and west along the river, obtaining pottery and goods from the Pueblo peoples and Spanish colonists in the Rio Grande valley. However, the Apaches' adoption of a semi-sedentary lifestyle proved to be a disadvantage when the Shoshonean *Numunu,* or Comanches, rode onto the southern plains after 1700. An alliance of Spanish and Comanches gradually drove the Apaches out of the Canadian watershed and eventually out of the south plains as well, leaving the former Great Basin natives as "lords of the south plains."[13]

The Comanches and their Shoshone kindred lived in the Great Basin until after acquiring horses some time in the late 1600s. According to both Comanche and Shoshone traditions, the groups divided following a dispute over a game and after illness broke out in camp, with the Comanches moving south and east. The Comanches, like other Native Americans, probably obtained horses first after 1680 when the Pueblo Revolt in Northern New Spain (modern New Mexico) temporarily drove the Spanish out. Puebloan people traded the horses, sheep and cattle, while other groups raided the abandoned herds. However it happened, by 1706 Spanish documents refer to a group of raiding equestrian Indians as the "Komantica," or Comanches. This group of people adapted quickly to the life of horse pastoralists and made use of Spanish technologies such as the saddle, bridle and lance, as well as techniques including gelding animals deemed not worth breeding. According to Post Oak Jim and other later Comanches, male horses deemed inferior were gelded between ages two and three years. The owner, "roped the horse

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[13] Gary Clayton Anderson, *The Indian Southwest 1580 – 1830: Ethnogenesis and Reinvention* (Norman: University of Oklahoma Press, 1999), 139, 213; Hämäläinen, *Comanche Empire*, 18, 23; Wallace and Hoebel, *The Comanches*, 11.

around the forefeet and tied them to a stake, then drew back the hind-legs and cut. It was not proper to draw [only] one leg back, as it might dislocate it." Mares were not ridden into battle, and Comanche men were ridiculed if he was seen riding a mare, another trait they shared with the Spanish. The Comanches also valued mules because, "mules were tougher than horses, [mules] feet did not get thin and slippery like horses' hooves did in the summer on grass." Apparently the Comanches obtained mules by raiding rather than breeding, although the sources are vague on this topic. The Comanches soon gained a reputation as being some of the best horsemen on the plains, able to do everything from horseback. In his memoirs, retired United States Army Colonel Richard Irving Dodge wrote that all Comanches tended to be "rather low" in stature" and often heavyset, while the men were "short and stout" and awkward while walking, but graceful and excellent warriors once mounted, an observation others concurred with. The earlier commentator and artist George Catlin observed that "[i]n their movements they are heavy and ungraceful; and on their feet one of the most unattractive and slovenly-looking race of Indians I have ever seen; but the moment they mount their horses they seem at once metamorphosed, and surprise the spectator with the ease and grace of their movements." Almost all commentators also noted the men's long hair, which the warriors frequently decorated with horsehair, beads and pieces of metal.[14]

Within fifty years of first emerging onto the plains, the Comanches dominated the High and Southern plains, trading and raiding from the Arkansas River south to the Gulf of Mexico, and from the Rio Grande Valley east to the woodlands of modern Louisiana and Missouri. The

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[14] Thomas W. Kavanagh, Ed. *Comanche Ethnography: Field Notes of E. Adamson Hoebel, Waldo R. Wedel, Gustav C. Carlson and Robert H. Lowie* (Lincoln: University of Nebraska Press, 2008), 188-189; Betty, *Comanche Society,* 77; Kavanaugh, *Ethnography,* 135-36, 154; Hämäläinen, *Comanche Empire,* 246; quoted in Wallace and Hoebel, *The Comanches,* 17.

Spanish called the high plains *la Comancheria*, the land of the Comanches, and as the historians Elizabeth John and Pekka Hämäläinen describe, the Indians established a trading and raiding empire that influenced international powers including France, Britain and Spain.[15]

The western Comanche bands, the Yamparikas ("root eaters") and their successors the Kwahadis (or Quahadis) ("antelope people") used the resources of the High Plains and Canadian Valley as the foundation of their trade system. Water and solar energy in the form of grass and trees supported the bison and horses, while the comparatively mild winters meant that the Comanches' horse herds not only survived the winters but also increased in numbers. This allowed the Comanches to trade and raid all year around, as well as providing a surplus of animals for exchange. Bison provided skins and dried meat that found ready markets in New Mexico and with the settled peoples of the Cross Timbers and eastern plains, such as the Wichita. Slaves captured on raids could be traded for metal goods, cloth or carbohydrates in the form of maize and bread (all items scarce on the plains), while horses taken in Texas were often traded to the French and later the Americans for guns. The Comanche also exported horses to northern peoples who could not support horses through the harsh winters. As Hämäläinen describes the scene, a regional "trade mart" developed in what is now southeastern Colorado, where various Comanche bands or *rancherías* met to trade, renew alliances and exchange goods, while members of other groups, including Hispanos, French traders and others also took part. These practices, combined with the Comanche's skill at raiding and warfare, led to the formation

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[15] Elizabeth A. H. John, *Storms Brewed in Other Men's Worlds: The Confrontation of Indians, Spanish, and French in the Southwest, 1540 – 1795* 2nd Edition, (Norman: University of Oklahoma Press, 1996), xix; Hämäläinen, *Comanche Empire,* 9, 65.

of the "Comanche Empire," an economic and political entity with one center on the Llano Estacado and Canadian Valley.[16]

Although the Comanche lived in and made extensive use of the Canadian Valley, they never settled there as the Antelope Creek or Athapascan groups had. The Comanches remained nomadic pastoralists. A nomad, from the Greek meaning "those who pasture herds," is a person who has no fixed residence and who wanders an area based on the seasons and the availability of resources, while a pastoralist is one who owns his or her own animals, can inherit the owned animal or its offspring, whose livestock reproduce, and "who make use of some consequence of the animal's behavior." For example, the Spanish who attempted to settle the western edge of the high plains were sheep pastoralists but they were not nomadic. The term "nomadic pastoralist" applies to the Comanches, who grazed their horse herds in the uplands in summer, but also sought the Canadian Breaks and other riparian areas in summer to gather fruit, especially wild plums and grapes, and in winter for shelter, water and forage. The inner bark of young cottonwood trees has enough sugars in it to keep horses alive if the Comanches' herds grazed out the Canadian Valley's stands of tall-grasses in winter. Because the Comanche did not farm, they relied on bison, antelope and other game for protein, and on some wild plants as well as imported bread and maize for carbohydrates. This dependence on bison and horses meant that the Comanche bands, or *rancherías*, moved frequently.[17]

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[16] John, *Storms Brewed,* 305, 314; Hämäläinen, *Comanche Empire,* 167-172; Wallace and Hoebel, *The Comanches,* 287.

[17] Betty, *Comanche Society,* 77; Kavanagh, *Ethnography,* 513, 514; James E. Sherow, "Workings of the Geodialectic: High Plains Indians and their Horses in the Region of the Arkansas River Valley, 1800 – 1870" in *A Sense of the American West* ed. James E. Sherow, (Albuquerque: University of New Mexico Press, 1998), 100; Dan Flores, "Bringing Home All the Pretty Horses: The Horse Trade and the Early American West, 1775 – 1825," *Montana: the Magazine of Western History*, 58, No. 2 (Summer 2008), 5, 11,14.

Bison provided food, shelter and trade resources that complemented the Comanches' horse raising and trading. Bison meat was the primary protein source for the Comanches, although they also hunted deer, elk, bear and on occasion prairie dog, and ate horses if the situation required. Bison provided the highest ratio of meat for amount of effort and mounted hunters could kill a reasonable number of the gregarious animals in a single hunt, if the hunt was successful. The hides of female bison were tanned with the hair on into heavy winter robes, or tanned into leather for teepee covers, bags and pouches, horse tack, shoes and clothing. The thicker bull hides formed the cover of warriors' shields and other things where durability was more important than flexibility or comfort. Comanche women used bison bones to make tools such as needles and awls, while the hair could be spun into rope or used as decorative fringe, or even worn as part of a man's long braids. The meat, when dried into jerky or prepared with fat and fruit into pemmican, served as a vital trade item with peoples east and west of the *Comancheria* and provided one solution to a dietary dearth that faced the Comanche.[18]

The Comanche diet lacked carbohydrates, leading them to trade hides and meat with Indian groups such as the Pueblo peoples, who lived and farmed away from the plains and had less access to game animals, in order to make up for the undersupply. Although bison, deer and horses provided many vital supplies, the protein heavy diet of southern plains Indians left them at risk for health problems. Humans require carbohydrates in order for their bodies to effectively process amino acids and protein from food, and one reason the Comanche birth rate remained low even after the cession of infanticide was the women's high protein diet apparently caused chronic ketoacidosis. Without enough starch and sugar in their diet, the women's bodies burned body fat for fuel, leading to a build up of ketones in the blood stream, which over an extended

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[18] McHugh, *Time of the Buffalo,* 89, 95-96, 103, 106; Betty, *Comanche Society,* 137; Hämäläinen, *Comanche Empire,* 101-102.

period of time led to health problems including miscarriage. After the collapse of bison numbers affected both trade and hunting in the 1850s, observers reported that the Comanche children suffered from a form of protein deficiency called kwashiorkor that was exacerbated by the lack of fat and carbohydrates in their diet.[19]

This was not a new problem for plains dwellers, and neither were the solutions new. Archaeological sites dating to the Paleo-Indian period show selective seasonal hunting took place in order to obtain animals with the most fat on them – females in the autumn and males in spring, when birth and lactation drained female animals' fat reserves. This was necessary because without enough fat and carbohydrates, the protein from lean meat is not used well by the human body, and carbohydrates were especially scarce in early spring. The Comanches and other Native groups practiced similar hunting techniques, as well as making use of starchy plants that grew on the plains (Jerusalem artichoke, prairie turnip, arrowhead, cattails) and trading for grain. The Comanches in particular exchanged large amounts of bison meat products with the Pueblo and Hispano peoples living west of the High Plains. Of course, hides, horses and slaves also flowed from the plains to the mountains, but bison meat was equally important. And the Comanche consumed a great deal of bison![20]

In 1855 an Indian agent (a federal representative to the Indian Nations) named W. D. Whitfield attempted to determine just how many bison were necessary for various Indian peoples to survive and to trade. He studied the Comanches, Cheyenne, Arapahoe and other groups that he came into contact, and Whitfield calculated that for 400 lodges of Comanches, or roughly 3200

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[19] Hämäläinen, *Comanche Empire,* 31, 302.

[20] Bamforth, *Ecology and Human Organization on the Great Plains*, vi, 6, 113; Dr. Peter W. Bickers, personal communication, June 4, 2009; Speth, *Bison Kills and Bone Counts* , xiii, 120, 155.

individuals, the Numunu needed 19,200 bison per year, or at least six animals per person at the absolute minimum. However, after 1845 and even before the advent of commercial bison hunting by Anglos, the Comanches experienced resource strain as their population numbers increased while the number of bison remained steady or declined. Pekka Hämäläinen estimates that closer to 280,000 bison per year were needed by the Comanches and their allies. The late 19th Century conservationist William Temple Hornaday decried earlier wastage of bison by the Comanche and other peoples and estimated that the Comanche, Kiowa, Cheyenne and other "southern" tribes killed at least 390,000 bison between 1872 and 1874. At the same time, Anglo commercial hunters were also shooting hundreds of thousands of bison. A period of reduced summer and winter precipitation in the southern plains that lasted from 1845 until the 1860s compounded the problem. The Comanches responded by relaxing their food taboos and by attempts to restrict hunting by non-Comanches, including Hispanos. However, because of drought, pressure from increasing numbers of hunters and the need to trade ever more hides for items such as metal goods and firearms, bison numbers began declining ever more rapidly. This eventually caused subsistence, economic and political problems as the trade surpluses that had supported the "Comanche Empire" disappeared along with food and hides. But before then, the Comanches culture and population flourished, leaving a mark on the politics and economy of the Southern Plains for over 150 years.[21]

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[21] W.D. Whitefield, "Census of the Cheyenne, Comanche, Arapaho, Plains Apache and Kiowa of the Upper Arkansas Agency, 15 August 1855. U.S. Dept. of Interior, Bureau of Indian Affairs, Letters Received by office of Indian Affairs, 1824-1881, Record Group 75, M234, Roll 878; Sherow, *Grasslands*, 58; Hämäläinen, *Comanche Empire,* 295; David W. Stahle and Malcom K. Cleveland, "Texas Drought History Reconstructed and Analyzed from 1698 to 1980," *Journal of Climate* 1, No. 1 (January 1994), 64; William Temple Hornaday, *The Extermination of the Bison* with an Introduction by Hanna Rose Shell and Foreword by John Mack Faragher, (Washington, D.C.: Smithsonian Institution Press, 2002; reprint of 1889), 481, 501;Flores, "Bison Ecology," 68.

CHAPTER 2 - *Numunu:* The People

The anthropologist and historian Ernest Wallace and E. Adamson Hoebel called the Comanches "the lords of the south plains," because the Comanches so dominated the region and shaped the behavior of the peoples living around borders of the Canadian watershed. The Comanche language offers a window into how the *Numunu* saw the world and the value they placed on the Canadian River Valley and other watercourses. Anthropologist and Comanche language specialist Daniel Gelo points out that the Comanches brought landscape names with them from the Great Basin, applying them to features on the Great Plains that resembled ones in the people's former territory. They also had very precise terms for geographic features, including at least six terms for hills – low hills, hills that were almost mountains, a hill by itself, a hill as the son of a larger hill, hills that looked different when viewed from a different direction, et cetera. Tucumcari Mountain, "towards the far end of the most workable routes between the Texas drainages and northern New Mexico across the forbidding Staked Plains" drew its proper name from *tikamikati*, meaning "ambush." Water features received similar treatments: *imahapaa?* – rainwater pond/lake (a playa), *paritsohpe?* – spring, *uparitsohpe?* – abandoned spring, *okwéeti* – river or river channel, and *pahtsi okwe* for clear, running water are a few of the many general terms. Comanche names were very visual – Wolf Creek, Beaver River, River of the Hills that look like Prairie Dog Mounds (the Red River in Palo Duro Canyon), and *Guadal paa*, the Red River, better known as the Canadian River. Almost all the important landmarks on the High Plains were water related – the Canadian and other streams, important springs, especially large rainwater lakes and so on. As will be shown later, the Comanches saw the High

Plains grasslands as empty of people while the valleys were refuges and shelters. This very realistic view of the landscape fit the practical nature of Comanche life and philosophy.[1]

In all aspects of life, the Comanches' worldview could best be summarized as "practical." Although they believed in ghosts, malevolent and benevolent spirits and *puha*, or what could be called medicine power, the Comanche were less ritualistic than the Cheyenne or Kiowa. Religion was a matter for the individual, although there were communal ceremonies such as a beaver dance and possibly a Sundance. As a people they were also much less formal in their social organization than groups such as the Pawnee. The *Numunu* ("the People" or "us") were willing to adapt and borrow anything that could be of use. This allowed them to adjust very quickly to life with horses, keeping or discarding various Great Basin practices as needed or desired. Among Basin traditions they maintained was a social organization based on the family, family bands, and real or fictive kinships.[2]

Comanches organized themselves into groups that later observers called bands and *rancherías*. Bands consisted of related families who stayed close together while camping, hunting and raiding. Members of several bands joined into a larger organization that the Spanish called a *ranchería.* Each *ranchería* formed around a senior man, such as the legendary Cornu

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[1] Daniel J. Gelo, " 'Comanche Land and Ever Has Been:' A Native Geography of the Nineteenth-Century Comanchería," *Southwest Historical Quarterly* 103, No. 3, (January 2000), 279, ff.275, 303, 305.

[2] Joseph Daniel Gelo, *Comanche Belief and Ritual,*(PhD diss., Rutgers University, 1986), ii; Gerald Betty, *Comanche Society: Before the Reservation*, (College Station: Texas A&M University Press, 2002)*,* 10; Ernest Wallace and E. Adamson Hoebel, *The Comanches: Lords of the South Plains,* (Norman: University of Oklahoma Press, 1952), 155, 186; Kavanaugh, *Ethnography,* 171, 173; James F. Brooks, *Captives and Cousins: Slavery, Kinship and Community in the Southwest Borderlands* (Chapel Hill: University of North Carolina Press, 2002), 29, 78. For clarity, band refers to a family group, *ranchería* to the group under the leadership of a *paraibo*, and division is the larger regional political and cultural association (Penateka, Kwahada, Jupe, et al).

Verde (Green Horn) a *paraibo* and probably his son or a close male relative by the same name who led the Jupe division (several *rancherías*) in the late 1700s, or a man like the older warrior and diplomat Ecueracapa of the Cuchanec Comanches who negotiated peace with New Mexico's governor Juan Bautista de Anza in 1786. The *paraibo* decided when and where to move camp, organized and led raids and conducted diplomacy. Should an individual decide he did not care for the *paraibo*'s decision, or if the *paraibo* seemed to be losing *puha*, other Comanches were free to leave and join another group, or even to form a completely new division of the Comanche nation. For example, the Kwahada division that dominated the High Plains at the end of the time of the bison seems to have formed first around a man that outsiders called Peta Nocona, and later around Quanah Parker. This flexibility also allowed the Comanches to disperse easily when environmental conditions such as drought made it easier for small groups to find enough water and grass (and bison), or to move to the edges of the *Comanchería* where conditions might be more favorable. Within the bands and *rancherías*, Comanche organization was based on married men and their wives, in-laws, children and adoptive kin.[3]

At the core, Comanche society and governance centered on families and created kinships. Once he had proven himself and acquired enough wealth through raiding, hunting, and trade, a Comanche man exchanged some of those horses and goods for a wife. As he gained wealth, the warrior often married second and third wives, as well as taking slaves to help in camp. Even though the Comanches stopped their earlier practices of infanticide and birth control after they

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[3] Betty, *Comanche Society,* 20, 21, 26; Brooks, *Captives and Cousins,* 77; Morris W. Foster, *Being Comanche: A Social History of an American Indian Community* (Tucson: University of Arizona Press, 1991), 68; Wallace and Hoebel, *The Comanches,* 23-24; Pekka Hämäläinen, *The Comanche Empire,*(New Haven, CT: Yale University Press, 2008), 270-271; Thomas W. Kavanagh, *The Comanches: A History, 1706 -1875* (Lincoln: University of Nebraska Press, 1996), 110-111.

moved onto the plains, Comanche women seem to have had comparatively few children. Reasons for this include their high-protein and low carbohydrate diet and the difficulties of carrying a pregnancy to term while riding and working, augmented by the practice of nursing for two years. Boy children were prized and somewhat spoiled as future warriors and companions for their grandfathers and uncles. Female children did not have as much status and were put to work doing chores at a younger age then were the boys. However, one possible "advantage" to having multiple female children lay in the fact that sororate marriage, where a man married sisters, was common and encouraged by the prospective father-in-law because it tied the families closer together. If a man died from illness, or was killed while hunting or on a raid, his brothers would often marry the man's widows in what is called leverite marriage, again keeping the kinship relations close.[4]

Like their Spanish neighbors to the west, the Comanches possessed what could best be described as a strong sense of personal honor. As the historian James F. Brooks discusses at great lengths in his work *Captives and Cousins*, the Comanches placed importance on keeping their alliances and agreements made between individuals. This emphasis on personal values and integrity within the group caused European observers to comment favorably on how honest the Comanche were – with each other. One man's agreement did not necessarily bind others, however. In a common example, while the leader of a band or *ranchería* might agree not to raid a *plaza* or Native American village, young men within his group or members of other bands did not always see themselves as restricted by his decision. If the *paraibo* lost his status due to a defeat in battle, failure on the hunt or a general loss of prestige, members of his *ranchería* might

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[4] Wallace and Hoebel, *The Comanches,* 139, 141, 23; Thomas W. Kavanagh, Ed. *Comanche Ethnography: Field Notes of E. Adamson Hoebel, Waldo R. Wedel, Gustav C. Carlson and Robert H. Lowie* (Lincoln: University of Nebraska Press, 2008)*,* 34, 36-37; Hämäläinen, *Comanche Empire,* 248, 263, 265; Foster, *Being Comanche,* 70.

leave and join a different group and would no longer be restrained by the earlier band's agreements. This did not affect a Comanche man's honor, although it did frustrate the Spanish, Mexican and later American and Texan administrators who sought to limit and stop Comanche raiding! One method these officials and *paraibos* tried was the development of fictive kinships, especially between the governors of Spanish New Mexico and the *paraibos* of the Yamparika and Jupe groups.[5]

The agreement reached by New Mexico's Spanish governor De Anza and the Kotsoteka *paraibo* Ecueracapa ("Iron shirt") in 1786 serves as an example of how fictive kinships helped the Comanches and other groups reach agreements and compromises. The Spanish settlers of New Mexico had been trading with and raiding (and more often raided by) members of various Comanche divisions since the Comanches first moved into the Plains. What had been a nuisance for the Spanish in New Mexico became a major threat to the colony's survival starting in the 1740s, as Comanches used their large numbers of horses and access to French firearms to stage more frequent and more devastating raids into the Rio Grande valley. Although Governor Vélez Cachupín's night battle with a Comanche *ranchería* and his resounding defeat of the raiders in 1751 calmed the eastern frontier for a while, raids soon began anew. Unhappily for those trying to farm and trade in New Mexico, Governor Don Pedro Fermín de Medinueta undid much of Cachupin's policies and successes after his arrival in 1767, leading to more raids and deaths. Where Cachupin had distinguished between the various *rancherías* and divisions of the Comanches, Mindinueta punished any Comanche he encountered as he avenged the raids, rather

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[5] Brooks, *Captives and Cousins,* 8, 40; see Bartram Wyatt Brown, *Honor and Violence in the Old South* for a detailed study of "primal honor" in another cultural group; Foster, *Being Comanche,* 24, 67.

than working to find the truly guilty. The unrest that followed continued until the term of Governor Juan Bautista de Anza and his dealings with Cuerno Verde.[6]

One, more probably two, chiefs who were called Cuerno Verde ("Green Horn") had raided extensively into New Mexico. De Anza's forces surrounded Cuerno Verde's *ranchería* and killed the warriors in 1779. Shortly after, the Kotsoteka *paraibo* Ecueracapa decided to enter into peace negotiations with the Spanish. Anza was receptive, and after many consultations, missions back and forth between the groups and careful negotiations, a peace agreement resulted in May 1786. In announcing the peace, Governor de Anza announced that he "was watching with the tenderness of a father" the progress of the negotiations. A few years later, Ecueracapa sent three of his sons to Anza to help with raids on the Apaches, formalizing the kinship relationship between the "brother" governors/ chiefs. This peace, which lasted into the 1840s, was just in time for the Kotsoteka, Jupe, and Cuchanek divisions in the Canadian River watershed because a regional drought was causing problems, including heavy stress on their all-critical horse herds.[7]

Horses made the Comanche "the Comanche." As described above, the Comanche were horse pastoralists who used their equine wealth to create an empire centered on the high plains of the Canadian, Brazos and Arkansas watersheds that extended to the Rocky Mountains and as far east as the Piney Woods of the Louisiana Territory. Horse fodder was more easily obtainable than was meat for dogs. Horses also provided rapid transportation of people and goods when compared to dog travois and human locomotion, functioned as desirable and self-reproducing

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[6] Elizabeth A. H. John, *Storms Brewed in Other Men's Worlds: The Confrontation of Indians, Spanish and French in the Southwest, 1540-1795* 2nd Edition, (Norman: University of Oklahoma Press, 1996), 322, 325-326, 465, 468; Hämäläinen, *Comanche Empire,* 110, 118, 125, 128.

[7] Johns, *Storms Brewed,* 469, 587-589; Hämäläinen, *Comanche Empire,* 125, 128; Betty, *Comanche Society,* 29-31.

items of international trade, and could be eaten in times of scarcity, unlike taboo dog flesh. The water and grasses of the plains and the Breaks that supported the bison also allowed the Comanche to keep herds of horses. Even without human assistance, horses prospered on the southern plains, providing a third source of supply for the Comanche (breeding their own, raiding, capturing wild horses). The Comanches first acquired horses through raiding or trading for the herds abandoned by the Spanish after the Pueblo Revolt in 1680. Over time, their herds on the southern plains became self-sustaining and when combined with animals gained through raiding, produced a tradable surplus of animals. This surplus was used to purchase wives or as evidence of the owner's *puha*. The Comanches practiced some selective breeding and gelded inferior animals within their own herds, but also did not hesitate to acquire horses from other people.[8]

The Comanches raided for horses that they then exchanged or gave as diplomatic gifts east, west, and north of the *Comancheria*. The Comanches traded with other Native Americans, as well as with Spanish, French and Yankee settlers and traders. After 1820, traders from the United States purchased large numbers of horses for use in the Deep South and into Missouri. Horses also functioned as a medium of exchange and the Spanish governors of New Mexico set prices for horses and horse gear to ensure peace at trade fairs held at Taos and other border settlements. This form of wealth may also have produced a shift in the Comanches attitude and practice of slavery.[9]

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[8] Betty, *Comanche Society,* 85, 86, 94; Wallace and Hoebel, *The Comanches,* 46; Kavanaugh *Ethnography*, 40, 229.

[9] Dan Flores, "Bringing Home All the Pretty Horses: The Horse Trade and the Early American West, 1775-1825," *Montana: The Magazine of Western History* 58, No. 2 (Summer 2008), 11, 17-18; Hämäläinen, *Comanche Empire,* 170, 190.

Pekka Hämäläinen argues that horses contributed to the Comanches' gradually developing from people who owned slaves into a slave society closer to that of the Antebellum South or early Spanish America. The Comanches had been a society with slaves almost from the time they emerged onto the plains and slaves had been treated as inferior members of the family or more often were eventually adopted and treated as Comanche. Within this system, young boys and male captives cared for and guarded the horse herds, while older male slaves made saddles, bridles, and other horse gear. Girls were taught the skills needed to be good wives and mothers and frequently became chore wives or even primary wives of Comanche warriors. Over time, the need for increasing numbers of horse tenders may have begun shifting the Comanches into a true slave society, where slaves formed a separate and permanent class, but the transition into a true slave society remained incomplete at the end of Comanche independence. And these slave-tended horses helped make Comanche raiding and warfare even more deadly and effective.[10]

The Comanches have a lasting reputation as warriors and raiders and for good reason. They practiced systematic warfare to protect resources and territory, to gain revenge for the deaths or capture of kindred, and as a way to gain status within their society. As the anthropologist and historian Gerald Betty suggests in *Comanche Society*, the same kinship ties that could strengthen a treaty or trade relationship also demanded harsh reprisals for the killing of kindred by non-kin. A Comanche man gained the highest status in warfare for counting coup on an enemy – striking him but not killing him – and for rescuing a fallen or wounded comrade. Gaining scalps of the enemy also showed bravery and prowess and had the extra benefit of blocking the fallen enemy from any afterlife. Successful horse raiding was ranked just behind these military activities and often led to retaliation by the aggrieved party, or by Comanches who

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[10] Hämäläinen, *Comanche Empire,* 252, 290-91.

might have lost relatives in a horse raid. For example, suppose Spanish colonists killed a man who was raiding their horse herd. In response, the man's relatives and friends would respond by attacking Spanish settlements and herds, trying to take prisoners, kill Spanish soldiers and capture their horses. The revenge raid might be conducted against a settlement that had nothing to do with the first death, a fact that often led to retaliation in kind and a seemingly endless series of raids and revenge. It is interesting to note that despite their reputation as very skilled horsemen and light cavalry, the Comanches never developed soldier societies such as those found among the Cheyennes, although there were individual "crazy warriors," *pukutsi* or sometimes "Wolf Soldiers." Because the Comanches *were* a soldier society, they had no place for a separate soldier group. Men had no other role or way to gain prestige than through warfare and raiding. Some historians of the pre-reservation Comanches speculate that the Numunu found old men to be slightly shameful, because the ideal was to die in battle while still young. However, it was the older men who became *paraibos* and who conducted diplomacy with other nations.[11]

Different *rancherías* and *paraibos* might have different approaches to diplomacy. Those groups who lost kindred to Osages, Spanish or Texans would be much less likely or willing to consider truces and trade relations with their current enemies than would a different group of Comanches. For example, the Kwahadi, who lived in the Canadian watershed, might consider the settlements north and west of San Antonio to be fair game for raiding, while the Penateka who lived in the area near modern Wichita Falls had a trade and peace treaty with the Texans (albeit one based on tribute received from the Texans). The Spanish, Mexicans and Anglos commonly assumed that the Comanches had a paramount chief who could speak for all members

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[11] Betty, *Comanche Society,* 126, 131; Wallace and Hoebel, *The Comanches,* 245, 246, 269; Hämäläinen, *Comanche Empire,* 183-84, 279.

of the nation, and also that the *paraibo* of a *ranchería* could force the younger warriors to abide by peace agreements. Neither were the case, because of the independence of all Comanches and the need for younger men to prove their status. This caused a great deal of confusion, frustration and misapprehension by officials who treated Comanche negotiations as they would diplomatic relations with the French or Germans. The longest lasting peace agreements were those based on mutual strength, mutual benefit and often fictive or actual kinship, as the earlier cited example of Gov. Anza shows. However, an intangible force also shaped diplomacy, warfare and more peaceful activities in the Comanches' lives. It is possible that the survivors of Cachúpin's night battle decided that the Spaniard's *puha* had exceeded that of Cuerno Verde and contributed to the Comanches' defeat.[12]

Like the water in the Canadian River, *puha* flowed through the lives of the Comanches. The word can be translated "power" but more often as "medicine." It signifies the supernatural force that exists and that can be tapped for good or for ill by those willing to undertake a vision quest and to abide by the taboos and requirements of having *puha*. High places, such as Tucumcari Mountain, a butte south of the Canadian River in modern New Mexico, or the bluff overlooking Ute Creek at Rincon Colorado, or the Medicine Mounds near Quitaque, Texas were places to seek for *puha*, as were gorges and clefts. A high butte on the plains or within the eroded Canadian Breaks, or a canyon in the plains was a place of opposites and for that reason a location where access to *puha* sources was greatest and easiest. Flowing water had the power to remove *puha* and a medicine man's prayer bundle was often disposed of by dropping it into flowing water, while menstruating women cleansed themselves by bathing in running water, because reproductive power cancelled out *puha*. Water carried *puha*, and "running water and streams

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[12] Hämäläinen, *Comanche Empire,* 281; John, *Storms Brewed,* 591-592; Wallace and Hoebel, *The Comanches,* 276-277.

[were] thought to have a very powerful sacralizing effect." This made the Canadian Valley and the surrounding Breaks very valuable places for the Comanches, because the landscape provided spiritual as well as physical resources. It is easy to look at an isolated mesa within the breaks, a high place within lowlands, near cleansing water and in a place where some *puha* rich plants grew, and to imagine how the Comanches must have valued the all the resources of the valley.[13]

Although water and high or low places were important, one could not gain *puha* from water or mesas and bluffs. Instead, a person asked the spirit of a deceased medicine man or approached the spirits directly. Both methods required the seeker to visit a solitary place, often a butte or hilltop, and fast while waiting at least one night for a vision. A man might gain skill in healing wounds or curing ghost sickness. He might also gain special strength for battle, or the support of a totem creature such as a wolf or eagle. The vision and granting of *puha* always included taboos. The most common were the avoidance of grease and fat and not going near women during their menses. Grease, because it was neither liquid nor solid, represented an "opposition to sacred, flowing water," and menses' "negative power flow" has already been mentioned. The Comanche captive Bianca Babb describes going for water and taking the wrong path back to where her adoptive mother camped. An ugly old (post-menopausal) woman attacked the girl, driving her away from where the men were encamped. Babb did not understand what she had done wrong, if anything, but it is quite possible that the woman was guarding the men from accidental contamination. Women could gain *puha*, usually from a family member, but they could not use it until after menopause, at which time they were under the same restrictions as a

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[13] Gelo, *Comanche Belief,* 126, 135, 133, 148, 150, 151; David E. Jones, *Sanapia: Comanche Medicine Woman* (1972; repr., Prospect Heights, IL: Waveland Press Inc., 1984), 34; Nancy A. Kenmotsu, Timothy R. Pettula; Patricia Mercedo-Allinger; James E. Bruseth; Sergio Iruegas and Curtis Tunnell, *Archaeological and Documentary Research at Medicine Mounds Ranch, Hardeman County, Texas* Texas Historical Commission, Antiquities Protection, Cultural Resource Management Report No. 4. Austin: Texas Historical Commission, 1994, 20.

man would be. However, not all taboos and restrictions in Comanche culture related to *puha,* or at least not directly.[14]

Comanches avoided certain foods and even feared certain ways of death because of the supernatural aspects. The principle of magical transfer applied to fish and birds. Except in times of dire need, most Comanches refused to eat doves, quail and waterfowl, because they feared that certain properties of the animals might transfer to the person eating them – they would become nervous and startle easily like a quail, for example. They also avoided fish, although why is uncertain and it should be noted that the Wichita also avoided fish. Some authors suggest that fish were seen as being sluggish and cold, or "slimy," not desirable traits in a warrior. This author wonders if the Comanches had concerns about eating creatures that lived in *puha*-removing water. Many Plains groups, including the Kiowa, Crow, Peigan and Apache also eschewed fish for ritual (Apache) or other unstated reasons, leading anthropologist M. Malainey and others to wonder if the deleterious digestive effects of eating fatty fish after living on a low-fat diet may have contributed to avoiding fish as food. Or it could simply be that the Comanches did not fish while they were in the Great Basin, did not adopt the practice once on the plains, and so made a virtue of necessity by declaring fish undesirable. Pork was added to the do-not-eat list because of its association with sedentary white farmers. The Comanche word for pig translates "dirty nose digger." Foods and certain aspects of gender relations had taboos and concerns

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[14] Gelo, *Comanche Belief,* 126, 135, 133, 148, 150, 151; Jones, *Sanapia,* 34; Kenmotsu, et al, *Medicine Mounds,* 20; Mrs J. D. Bell (Bianca Babb) "A True Story of my Capture By and Life With the Comanche Indians," C. Boone McClure Papers, Folder 8, Box 1, PPHM, 15.

associated with them, and so did death. These spiritual beliefs dictated some aspects of Comanche living and fighting.[15]

Comanche men and women tried to avoid certain deaths and moved camp after an individual died there. No one could gain admittance to the afterlife, a comfortable and enjoyable version of a person's current existence, if he or she died at night, drowned, or was scalped. When Governor Tomas Vélez Cachupín trapped a group of Comanches in a pond at night during a series of running battles in 1729, the Spanish recorded the terror the Comanches expressed and noted how many surrendered. The chronicler attributed this to the overwhelming power of the Spanish, but later historians and anthropologists believe that the Comanches were driven more by the fear of dying in water at night, possibly because the water that removed *puha* might also remove their spirits and bar them from the afterlife. Like their Great Basin cousins, the Comanches retained a fear of ghosts, which is one reason why they moved camp when someone died. It is easy to see that the Comanches, long considered unsophisticated in their belief systems, actually had more complicated approaches to living and dealing with the supernatural, and to using forces and resources such as the Canadian River, than early anthropologists and observers believed.[16]

The Comanche made great use of the Canadian, even if they did not tap the stream as did peoples farther west or later Anglo residents of the watershed. The Comanches' term for the

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[15] Bell, "True Story," 15; "Caddo," informer C.C.W., March 14, 1949 Folder 23, Box 1, Karl and Iva Schmitt Collection, Western History Collection, University of Oklahoma, Norman, OK; "Customs and Conventions," Folder 7, Box 1, C. H. Detrick Collection, Western History Collection, University of Oklahoma, Norman, OK, 2; M.E. Malainey, R. Przyblski and B.L. Sherriff, "One Person's Food: How and Why Fish Avoidance May affect the Settlement and Subsistence patterns of Hunter-Gatherers," *American Antiquities* Vol. 66, No. 1, (January 2001), 146, 145.

[16] John, *Storms Brewed,* 322; Wallace and Hoebel, *The Comanches,* 153-54.

short grass plains surrounding the Canadian Breaks and Palo Duro Canyon is *numuhwata,* meaning "place without [the] people," as compared to the Canadian Valley, the valleys of the Red River's branches, and other streams. The term for a river, not specifically the Canadian, is *hunguv*, literally, "a declivity" or valley. The Comanches lived around the river, using the valley for winter shelter and as a resource base. They gathered the plums and grapes that grew in thickets and hunted the bear, deer and other animals of the valley. The Comanches also used cottonwood, hackberry and other trees for firewood and tipi poles, while harvesting the inner bark of young cottonwoods as winter horse fodder. Unlike the Antelope Creek people and Apache, the Comanches neither grew crops nor fished or hunted waterfowl. Tucumcari Peak and other isolated buttes within the outer valley probably served ritual purposes for vision quests. The Comanches swam in the river despite the water's medicine power, as well as using the stream to dispose of ritual items and uncleanliness and to water their horses. However, they did not venerate the stream or personify it in stories as they did some animals. It also appears that the Comanches did not use some of the available plant resources, such as starchy tubers of cattails or arrowhead (*Sattiga sp*), or if they did, that usage has not been identified by ethnographers and later Comanches. The Numunu also made use of that other important valley visitor, the bison, in the creation of their economic and political empire.[17]

The Comanches used their access to the grass and water resources of the southern Plains and High Plains in the secondary forms of horses and bison, in conjunction with diplomacy and military power to develop an "empire" that stretched from northern Mexico to the Arkansas

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[17] Kavanagh, *Ethnography*, 513; Robert H. Lowie, *Indians of the Plains* (New York: McGraw Hill, 1954), 31; Daniel Gelo, "Comanche Landscapes: Context and Concepts" lecture at "The Red River War: A Clash of Cultures on the Southern Plains" and personal communication, Panhandle Plains Historical Museum, Canyon, TX, November 8, 2009. Kenmotsu et al, *Medicine Mounds,* 89.

River, according to the historian Pekka Hämäläinen. Empire, derived from the Latin *imperium* meaning power or a ruled territory and as defined by Hämäläinen, is a political and economic system that allows a group to control trade by controlling resources, and to use these resources to shape the behavior of other groups (Wichitas, Spanish governors, the Mexican government). Empire also includes the spread of the dominant power's language and culture over the controlled area, and beyond. The Comanches' control over resources and their skill in warfare forced other nations, be they Native American, European, or Anglo-American, to trade with, negotiate with or to submit to the economic and military power of the Comanches. Although this "empire" was not a centralized political unit such as those of ancient Rome or China, the entity that developed fits the imperial pattern of dominance and politics. The Comanche Empire derived its existence from control of vital resources, in this case the grass and water used by horses and bison. Other peoples who wanted or needed access to these resources and their byproducts had to deal with the Comanches, often on terms dictated by the Numunu.[18]

Among the European powers, the Spanish, French and later Anglo-American were forced to negotiate with the Comanches. Chroniclers of Spanish New Mexico focus much attention on the successes of governors such as Velez Cachupín and Anza who seemingly subdued the fierce Comanches and convinced them to honor treaties and cease raiding. However, the larger picture suggests that instances of the Spanish dictating to the Comanches were rather rarer than the Hispanos would have preferred. The governors of Texas, both under the Spanish and Mexican governments as well as presidents of the Republic and governors of the state often found themselves to be the victims of Comanche economic practices rather than the masters. Several historians even argue that the raids undertaken by the Comanches into the northern Mexican

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[18] Hämäläinen, *Comanche Empire,* 47, 65; John, *Storms Brewed,* 432, 465.

states of Chihuahua, Sonora and Durango affected the process of Mexican national development by disrupting daily life, economics and complicating national politics as tensions arose between the people and the central government over policies and the lack of protection from raids. Even the New Mexicans, who had the most success at reaching a *modus vivendi* with their eastern neighbors, found themselves changing to match the needs of the Comanches and not vice versa.[19]

Spanish governors intended for eastern New Mexico, primarily the settlements along the eastern slopes of the Manzano and Sangre de Christo mountain ranges, to serve as a frontier and buffer zone. According to historian James F. Brooks, the officials in charge of settling converted Plains Indians located their communities of *genezarios*, Christianized Indians and their descendents, just east of the Rio Grande watershed in hopes that the Comanches would see how well and comfortably their cousins lived, and would be persuaded to convert to Christianity, settle down and join the others in peaceful lives as good Christians under the rule of Spain. Instead, the settlers became more Comanche than the Comanche became Spanish, according to Brooks and others. Anton Chico, Mora, and other settlements and grants formed a true frontier, a place where different cultures met, overlapped and borrowed from each other. This frontier was dictated by the Comanches and their needs instead of being shaped by the Spanish government, and several Spanish governors bemoaned how the *genezarios* seemed to focus less on agriculture than on hunting and trade with their Plains "cousins." Along with the officially approved trade goods, the Hispanos of New Mexico and Texas continued (involuntarily) providing some of the horses demanded by native peoples to the north and by Yankee traders to the east.[20]

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[19] Hämäläinen, *Comanche Empire,* 2, 19, 47; John, *Storms brewed,* 322, 425; Gary Clayton Anderson *The Indian Southwest 1580-1830: Ethnogenesis and Reinvention* (Norman: University of Oklahoma Press, 1999)*,* 249, 213; Brooks, *Captives and Cousins,* 200.

[20] Brooks, *Captives and Cousins,* 199 – 202.

Geography boosted the market-reach that the Comanches developed and enjoyed. Generally mild winters on the southern plains and High Plains made it possible for the Comanches to keep large numbers of horses through the winter. Unlike more northern groups, even those living along the Arkansas River and Platte, the Comanches rarely needed to feed their horse herds cottonwood bark in winter. Instead they grazed the short-grasses, and the mid-grasses of the Canadian Valley, Palo Duro Canyon and other sheltered places, or moved farther south. As a result, every spring a brisk demand for horses arose among the Lakota, Blackfeet and other northern plains groups. The Comanches traded through the Wichitas, and later via the Cheyennes and Kiowas, passing horses north. Anglo-Americans in Louisiana and eastern Texas also bought large numbers of horses and mules to use in farming. The Comanches frequently raided central Texas around San Antonio, New Mexico, and into old Mexico for horses and mules, then passed them north and east, as well as trading horses they raised themselves. Bison products also flowed from the plains, both east and west.[21]

The Wichita, Caddo and other sedentary agricultural peoples traded with the Comanches for bison meat. Hispanos and Pueblo Indians also wanted bison meat, hides and other items. In exchange, maize, slaves and manufactured goods including cloth went onto the plains as horses and bison-products traveled out. The Hispanos and their Puebloan allies developed specialized trade goods such as *belduque* knives and a type of hard and very portable trade bread specifically to sell to the Comanche consumer market. However, as the volume of trading and hunting increased, the ecological foundations of the Comanches' trade empire began wearing away.[22]

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[21] Hämäläinen, *Comanche Empire,* 70, 73, 170, 165; Flores "Pretty Horses," 13.

[22] Hämäläinen, *Comanche Empire,* 296; Dan Flores, "Bison Ecology and Bison Diplomacy Redux: Another Look at the Southern Plains from 1800-1850" in *The Natural West: Environmental History in the Great Plains and Rocky Mountains* (Norman: University of

For all its great geographic extent and flexibility, the Comanches' "empire," their prosperity and control over the southern plains depended on water and grass and on the horse and bison that converted water and grass into protein and kinetic energy. As a result, this system contained inherent problems that in all likelihood would have led to the collapse of the Comanches' power even without the Anglo-American buffalo hunting and the military campaigns against the plains peoples in the 1870s. Horses ate what bison ate, leading to problems for the people who depended on both, especially in the years when the rains failed to come. Horses also required a great deal of care and management, tying up labor and encouraging the acquisition of slaves whose only duty was care of the horses. Movement of the *ranchería* was often predicated on the needs of the horse herds for water and fodder. In addition, frequently used camping places such as favored springs or parts of the Canadian Breaks, became overgrazed and then de-forested as the Comanche cut down small saplings for winter fodder when the grass ran low. The nutritional difficulties of a bison-centric, high protein, low fat and low carbohydrate diet have already been discussed, and the need to trade for starches encouraged a form of dependence on the Puebloan and Hispano farmers of the Rio Grande watershed and more eastern farming peoples. However, regional droughts affected everyone living in and around this semi-arid upland. When the rains failed on the plains, the mountains also frequently experienced droughts that reduced the corn crop. This meant that there was nothing to trade when the Comanches came to the fairs in Taos and other places. In need of food to replace low numbers of bison, the Comanche then raided the Pueblos, but found little because of the poor harvests. Drought exacerbated enmities and caused problems that lingered into the fat years. In

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Oklahoma Press, 2001) 62, 68; James E. Sherow, "Workings of the Geodialectic: High Plains Indians and their Horses in the Region of the Arkansas River Valley, 1800-1870," in *A Sense of the American West* ed. James E. Sherow (Albuquerque: University of New Mexico Press, 1998) 107.

addition the Comanches were not the only hunters of the bison who visited the Canadian River watershed.[23]

[23] Flores, "Bison" 62; David W. Stahle and Malcom K.Cleveland, "Texas Drought History Recostructed and Analyzed from 1698 and 1980," *Journal of Climate* 1, No. 1 (January 1994), 64; Sherow, "Geodialectic," 100, 102. For a discussion of the sustainability of Native American hunting practices and the Indian as noble savage/early ecologist, see Shepard Krech III, *The Ecological Indian* (New York: W. W. Norton and Co., 1999).

CHAPTER 3 - Comanche Confrontations

Within years of the first Spanish settlements on the upper Rio Grande River, Hispano explorers ventured onto the plains. Francisco Vasquez de Coronado, Juan de Oñate and others described the herds of "shaggy cows," or *cíbolos* that covered the land east of the mountains. Over time, groups of Hispano men began venturing onto the plains to hunt the creatures and to trade with the Indians living there for dried bison meat and pemmican, hides and robes and other goods. Comanches in turn, as the Apache and others had done, visited the pueblos such as Taos and Pecos much as their predecessors on the Plains had done. These trading and scouting visits lead to the development of trade fairs (as well to thefts, murders, raids, and counter raids). By the early 1800s a regular pattern of Hispano visits to the *llanos*, the plains, developed. *Ciboleros* ("buffalo hunters") ventured east with carts, horses and assistants to hunt the bison. Others, called *Comancheros*, or "those who traded with the Comanche," preferred to trade for meat and hides rather than hunting. In general, *ciboleros* concentrated on hunting and only traded when necessary, while *comancheros* sought out Comanche *rancherías* to trade and did very little hunting while they were out on the plains.[1]

The *ciboleros*, like the Comanches, hunted on horseback with lances. The "thrill of the chase" was almost as important as the actual results of the hunt, and Hispano hunters kept their less efficient ways even after other techniques became available. The Comanches learned

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[1] John Miller Morris, *El Llano Estacado: Exploration and Imagination on the High Plains of Texas and New Mexico, 1536-1860* (Austin: Texas State historical Association, 1997), 154; Chares L. Kenner, *The Comanchero Frontier: A History of New Mexican-Plains Indian Relations* (Norman: University of Oklahoma Press, 1994. Originally published as *A History of New Mexican – Plains Indian Relations*, 1969), 78, 80; Fabiola Cabeza de Baca *We Fed them Cactus* 2nd ed with introduction by Tey Diana Rebolledo (Albuquerque: University of New Mexico Press, 1994) 40, 47.

probably their mounted hunting techniques from the Spanish, whose skills with horse and lance were almost identical to the Comanches'. In the autumn, after harvest was completed, each *cibolero* brought one or two trained horses and his weapons onto the plains. His supporters and assistants, poorer men and women who could not afford horses or weapons and who were called *agregados*, drove *carretas* drawn by oxen or mules. The group followed the rivers down onto the plains in search of the southern bison herds. The hunters would mount, then charge into the herd as a group on a run, or *corrida*, stabbing bison with their lances. Once they finished, the *agregados* skinned and butchered the bison, preparing the meat for drying and staking out the hides. The process continued until the wagons and pack animals had full loads and then the company returned to their home village or grant. Although the *ciboleros* did carry some goods, such as trade bread, with them to exchange with the Comanches, it was the *Comancheros* who did more actual trading with the Comanches.[2]

If the *ciboleros* were dashing horsemen spearing the mighty bison, *Comancheros* were the traveling salesmen of the *llano*. Almost as soon as the ink on the report to the Viceroy containing the news of the peace of 1786 had dried, *genezarios* and other "frontiersmen," as the historian Charles Kenner describes them, petitioned for permission to trade and explore the *Comanchería*. This was granted, albeit with some reluctance, by Governor Fernando de la Concha in the 1790s. Concha soon banned the trade of horses, unless initiated by the Comanches, because of the problems it caused with other tribes, such as the Ute, who were intermittently at war with the Comanches. However, after the first American traders were apprehended in Spanish territory in 1810, the governors became much freer with trade licenses

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[2] Cabeza de Baca, *Cactus,* 40-43; Anselmo F. Arrellano and Julian Josue Vigil, *Las Vegas Grandes on the Gallinas 1835-1985* (Las Vegas, NM: Editorial Teleraña, 1985), 108; Antonio Barriero *Ojeda Sobre Nuevo Mexico*, 19.

until 1821, when New Spain became Mexico. Despite varying official policies, the *Comanchero* trade flourished as both Hispanos and Pueblo Indians ventured out onto the eastern plains, eventually wearing easy-to-follow trails in the short grass along the south side of the Canadian River, as well as to other permanent watering sites and camping areas on the southern reaches of the Llano Estacado.[3]

The Comanches were eager to trade with the New Mexicans, in part because some of the "Spanish" were related to the Comanches through marriage, capture, or fictive kinship. For the purposes of diplomacy and trade, the Comanches would declare the outsider to be a brother, much as Equeracapa did with Governor De Anza, a practice that maintained the Comanche practice of equitable gift exchange. Once the traders arrived at the Comanche *ranchería*, the *comancheros* would unload their goods. From packhorses, burros, mules and eventually *carretas*, the wooden-wheeled Spanish carts, came corn meal and trade bread (something much like hard-tack), wheat flour, cones of sugar, coffee, dried pumpkin and some vegetables, tobacco, fabric and other dry goods. Eventually the *Comancheros* also traded guns, power, and ammunition. These, along with knives, lances and iron arrowheads, were almost the only manufactured goods that the New Mexicans with the Comanches, in part because New Mexico did not have many manufactured goods to trade. In exchange, the *Comancheros* received horses, jerky and bison hides and mules. By the mid 1800s, open slave trade with Hispanos was decreasing because the Mexican government banned slavery. There was also very little alcohol traded until after the 1850s because of the desire for self-preservation on the part of the Hispano and Pueblo traders![4]

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[3] Cabeza de Baca, *Cactus,* 47; Kenner, *Comanchero Frontier,* 78, 80.

[4] Kenner, *Comanchero Frontier,* 84-86.

Dependent on horses and bison and the grasses that fed them, the Comanche fought off other groups of Native Americans as well as Spanish and Anglos who competed for increasingly scarce resources and for territory. During the 1830s the Southern Cheyenne and their Arapaho allies warred with the Yamparika Comanches over use possession of the Arkansas River valley in eastern Colorado, and over the bison that lived in the area. Raids and counter raids crossed the plains: in 1837 a group of Kiowa and Comanche beat off an attack by a group of Cheyenne Bow String society warriors and "wiped out" the Cheyenne. The Comanches traded with Paul Chauteau, a trader who established a small post on the Canadian River in Texas, and complained about intrusions from the north and east. The following year the Cheyennes and their allies staged a larger revenge raid against the Comanches in the Texas Panhandle and although they succeeded in killing several Kiowas and some Comanche women, the keeper of the Cheyennes' medicine bundle, Grey Thunder, was also killed and the Kiowa and Comanche again repulsed their attackers. This led to reconsideration and eventual negotiations between the warring groups and in 1840 hundreds of Comanches, Cheyennes, Kiowas and Arapahoes met on the Arkansas River plains not far from the Bent Brothers' trading post. Comanche captive and fur trader John Hobbs described how the Comanches gave so many horses to the Cheyennes that the northern Indians ran out of lead ropes to hold all their new horses. In turn, the Cheyennes gave a feast and offered trade goods as gifts, while opening their territory to Comanche traders and bison hunters, and vice versa. This truce opened the Colorado plains to Comanche bison hunters and allowed the Cheyennes and Arapahos access to the huge Comanche horse herds for trade and replenishment.[5]

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[5] Thomas W. Kavanagh, *The Comanches: A History, 1706 -1875* (Lincoln: University of Nebraska Press, 1996), 243, 248; Janet Lecompte, "Bent, St. Vrain and Company Among the Comanche and Kiowa," *The Colorado Magazine* 89, No.4 (Fall 1972), 275, 279; James Hobbs,

Farther south, the situation remained more tenuous for those interested in the products of the *Comancheria*. Some Comanche bands and *rancherías* would trade with *Comancheros* or leave a party of *ciboleros* in peace; others would attack and rob the Hispanos and Pueblo traders as they returned to the uplands. In the 1850s, when drought and overhunting reduced the number of bison on the southern plains and in the Canadian River watershed, the Comanche tried to restrict hunting by New Mexican *ciboleros* to only what the New Mexicans' horses could carry. The would allow subsistence hunting but no more, and the Kwahada band turned back at least one party and destroyed or confiscated the supplies and hides and jerky of those who insisted on hunting for trade as well as for food during the lean years: pack animals were permitted, *carretas* were not. As resources within and around the Canadian Valley became scarcer, the Comanches tried to protect what they had, even as they unintentionally degraded those resources by overgrazing their horse herds and deforesting the valley. Cottonwoods probably fell victim to hungry horses, reducing some sites in the well-wooded valley to isolated clumps of mature trees. The bare ground of the dry uplands would blow, producing dust storms that may have been seen and commented on in Kansas during the 1840s and 1850s. Because the deer, elk and other inhabitants of the Canadian Breaks depended on the same resources that the Comanches' horses did, the wildlife would have been pushed away from the most easily accessible parts of the valley, into the steep and broken upland edges of the Breaks and the border of the Caprock. The Comanches would also have increased pressure on the game as the people stayed longer in the wetter Breaks and hunted more elk, deer, bear, and otter, and cut down the trees that the beaver needed for food and shelter. Farther south and east, the Comanche and the Texans raided and counter raided each other as Anglos attempted to settle what the Penateka Comanches viewed as

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Wild Life in the Far West (Hartford, CT: ?, 1872) quoted in David Lavender, *Bent's Fort* (Garden City, NY: Doubleday and Co., 1954), 187-188.

their prime hunting and horse-raising lands along the Brazos, Red and Trinity Rivers in central and northern Texas.[6]

After 1845 the fat years became rarer for the lords of the plains. Below average precipitation affected the high plains from 1845 well into the 1860s, stressing bison herds already under pressure due to probable over-hunting. According to tree-ring and sediment-core based weather record reconstructions done by Malcom Cleveland and David Stahle, of the twenty five years between 1845 and 1870, eighteen were below average precipitation years, and every year between 1854 and 1866 was either below average or a severe drought. Upland water sources, such as playas, would have gone dry, forcing the Comanches, the bison, wild horses and other animals to concentrate in places where there was water, such as the Canadian Valley, or to relocate out of the driest areas. Some springs probably went dry as well, further limiting the range of water-dependent species. As Pekka Hämäläinen, Dan Flores and other environmental historians have shown, the Comanches exceeded the carrying capacity of the Canadian watershed because of their growing populations of humans and horses. Extended drought, pressure from Hispanos, Anglos and the relocated Eastern Indians, and diseases such as brucellosis that had been introduced by domestic livestock, all pushed bison numbers lower and lower and bringing years of hunger to the *Comancheria.* The Comanches' horse herds also suffered and the Comanches would have been forced to spend more time at the permanent water sources, their herds grazing down potential winter fodder in the dry summer. With less grass available in winter, the Comanches, Kiowas and other people in the Canadian Valley would have cut more young cottonwoods for horse fodder, stripping the groves of the next "generations" of

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[6] Kenner, *Comanchero Frontier,* 89; Pekka Hämäläinen, *The Comanche Empire,*(New Haven, CT: Yale University Press, 2008), 271-218, 302.

trees that could replace older individuals. They would also have competed with beaver for food, stressing rodents already at the edge of their range. It is probable that the deforestation reported by surveyors in the late 1850s and mid-1870s, and by later Hispano residents of the Canadian Valley, dated in part to this quarter-century of drought. The reduced trees and grasses would also have contributed to erosion when rains did fall, but the extant records do not provide any indications as to how much or if anyone observed changes to the streams and valleys. Confined to smaller areas, the Comanches' horse herds also competed with bison for forage, especially around the watercourses where so many plains residents overwintered. With fewer bison and not as many spare horses, the Comanches were unable to trade as much or as far as they had previously. This opened a commercial niche that Anglo-Americans exploited by attempting to regulate the *Comancheros* and through the creation of other trade sites.[7]

The opening up of the Santa Fe Trail also hurt Comanche economics in the long term. Anglo-American traders from St. Joseph, Missouri and other places brought much-needed goods into New Mexico, often including items that the Comanches had supplied. Anglo traders including George and William Bent among others drew New Mexicans and plains Indians into their own business spheres, most notably the Cheyenne, who made great use of Bent's Fort on

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[7] David W. Stahle and Malcom K. Cleveland, "Texas Drought History Reconstructed and Analyzed from 1698 to 1980," *Journal of Climate* 1 No. 1 (January 1994), 64; U.S. Senate, "Report of an Expedition Led by Lieutenant Abert, on the Upper Arkansas and through the Country of the Comanche Indians, in the Fall of the Year 1845, by Lieutenant J. W. Abert" 29th Congress, 1st Sess., 1846, S. Doc. 438, 9, accessed via www.web.Lexis-Nexis.com; William E. Emmerich and R. K. Heitschmidt, "Drought and Grazing II: Effects on Runoff and water Quality," *Journal of Range Management*, Vol. 55, No. 3, (May 2002), 230, 233; for descriptions of geographic extent of the 1850s-60s drought, see James C. Malin, "Dust Storms Part One, 1850 – 1860," *Kansas Historical Quarterly* 14, No. 2, (May, 1946) and "Part Two, 1860-1880" *Kansas Historical Quarterly* 14, No. 2, (August 1946). Stahle and Cleveland draw on tree-rings for their reconstruction, while Malin uses news paper accounts and diaries from those living in eastern Kansas.

the Arkansas River in what is now southeastern Colorado. Because declining bison numbers meant that the Comanches could no longer meet the needs of the Kiowa, Cheyennes and Wichitas, those peoples often went elsewhere or took up hunting for themselves and competing directly against the Comanches for control of resources. An added complication stemmed from the United States government's forcible relocation of eastern peoples onto the rolling plains of Indian Territory (now Oklahoma). As if environment and business competition were not enough to cause the Comanches problems, Anglo-American commercial hunters turned their sights onto the bison and accelerated the collapse of the Comanches' empire.[8]

Anglo-American commercial hunters hurt the Comanches through the use of modern firearms and good cover as they killed the southern bison in dozens at a time. The demise of the southern bison herds began in Kansas as the railroad advanced south and west and pot hunters as well as adventurous sportsmen began shooting the shaggy bovines for trophies and to feed railroad work crews. Meanwhile, some hunters desired bison hides for robes and sold the tongues for luxury food. The Anglo market for bison products remained relatively limited, consisting primarily of leather for military use in India, until a British firm developed a method for turning bison hides into thick and strong leather for industrial belting. This caused demand for the hides to soar and encouraged the rise of industrial hunting on the plains. To see how this affected the plains and the Comanches, imagine the great workshops of the eastern United States and industrial Britain, with their rows of belt-driven machines turning out steel tools, weapons, fabric, and other goods. The rapidly-expanding railroads divided the grasslands and carried these goods back into the plains through depots such as Fort Dodge and Wichita, Kansas, where

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[8] Hämäläinen, *Comanche Empire,* 296, 301; William Wilmon Newcomb, *The Indians of Texas: From Prehistoric to Modern Times* (Austin: University of Texas Press, 1972), 349.

Anglo-Americans bought them and took them farther into the plains to exchange with the Kiowas, Cheyennes, and New Mexicans for more hides. Those factories also produced the guns that Anglo-American hunters used to eliminate the great bison herds, while the railroads brought settlers who pushed farther and farther westwards in search of free land and homesteads. By 1874 an Anglo family had moved into the Canadian River Valley not far from the old Bent Brothers trading post called Adobe Walls and planted a little corn in the valley soil. Although they could not see the whirling lathes or hear the hum of bison-hide drive belts, the Comanches knew that a new interloper had begun trying to move into their territory, and they and other Indians and the Hispanos tried to protect their way of living against the advance of Anglo-American policies and power.[9]

As soon as the Americans took over the western Canadian River Valley, along with the Rio Grande watershed and the lands to the west from Mexico following the Mexican-American war in 1848, U.S. officials tried to regulate the trade with the plains. Reasons for this included *Comanchero* competition with the Anglo traders licensed to work with the Cheyenne and Arapahos, limiting both the slave trade and raids on Anglo settlements and wagon trains, the desire by the U.S. federal government to restrict the whisky trade (and tax it), and growing complaints about the *Comancheros* dealing in stolen Texas cattle. Between 1850 and 1870 the commanders of the Army in New Mexico and members of the office of the Indian Superintendent waged a back and forth argument over the issuance of passes and licenses to

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[9] Tom McHugh, *Time of the Buffalo* (Lincoln: University of Nebraska Press, 1979), 253; John R. Cook, *The Border and the Buffalo: An Untold Story of the Southwest Plains* (Topeka: Crane and Company, 1907), 129, 132-133, 165-167; Donald S. Frazier, "Red River Wars: Bewilderment and the Problem of Changing with the Times," lecture given at "The Red River Wars: A Clash of Cultures on the Southern Plains" November 7, 2009. Bison hide was acceptable to both Hindu and Moslem soldiers and was considered a "neutral" leather.

Comancheros, with the Superintendent generally willing to provide them (for a fee, official or otherwise) and the Army stopping almost any *Comanchero* they caught, as well as some unlicensed Anglo Indian traders. The Comanches soon found that while Anglos disrupted their trade, they also provided the Comanches with an acceptable substitute for wild bovines: domesticated ones.[10]

Anglo-Americans pushed east from the mountains as well as west from the Great Plains, attempting to establish ranches along the Canadian, Gallinas and Pecos Rivers. The Comanches in turn helped themselves to the ranchers' livestock and garden produce, just as they had done with the Hispanos and Pueblo Indians. In 1855, Territorial Governor David Meriwether tried ordering the Comanches to remain in Texas or return to that state, with no success. The Comanches also took offense at the groups of U.S. Government surveyors attempting to map, classify and subdivide the heart of the buffalo lands along the New Mexican stretch of the Canadian River Valley. The surveyors were measuring and dividing the area into townships and ranges suitable for Anglo-American settlers (and land speculators) to purchase. According to the tenants of the culture represented by the men dragging survey chains across the river and busily recording theodelite and compass readings, the Canadian Valley and its uplands were unoccupied, under-used and in need of civilizing via the sod-breaking plow and the cadastral survey system. Small farms with domesticated cattle should replace the "wild Indians" and herds of shaggy, scraggly and undomestic-able bison, at least according to settlement boosters. The Comanches knew exactly what the surveyors symbolized and had no desire to have the Anglo-Texans, Anglo-Americans or anyone else subdividing or otherwise trespassing on Comanche lands. Anthropologist and adopted Comanche Daniel Gelo argues that the Comanches possessed

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[10] Kenner, *Comanchero Frontier,* 93, 96, 120, 126.

a very definite sense of place and possession, and viewed occupation and the evidence of occupation of an area as being "nine-tenths of possession." The Anglos leaving their marks in the form of cairns, blazes on trees or survey stakes were directly challenging the Comanches for the *Comanchería* and the then-current owners would have none of it; forcing the survey parties to request armed escorts of troops from Fort Union at Las Vegas, New Mexico. The onset of the American Civil War and the continuing drought further complicated matters for *Comancheros*, Comanches and Anglos.[11]

In June 1860 the U.S. Army launched the first of a series of attempts to defeat the Comanches in and around the Canadian River Valley. A three-pronged attack was planned, with one group leaving the post at Hatch's Ranch under the command of Major C. F. Ruff. Although his troops located and destroyed one Comanche camp, Ruff traveled as far east as modern Stinett, Texas in the central Panhandle without accomplishing anything besides exhausting his horses. Follow-up efforts from Ft. Union (near Las Vegas, NM) were equally unproductive, in part because the New Mexicans were not inclined to assist the U.S. Army in destroying a vital part of the Territorial economy. In 1861, Territorial and Army officials wary of the pending civil war and desiring to free troops from frontier defense reached out to the Comanches. The western bands of *Numunu*, suffering from attacks by the Texans and Kansas-based Army troops, as well as from the lingering effects of the regional drought, responded to the proposed peace council and agreed to meet with the federal agents and officials. In May Captain R. A. Wainwright and Territorial Superintendent of Indians J. L. Collins met with Comanche chiefs Esaquipa, Pluma de Aguilar and Paracasqua at Alamo Gordo Creek near the Pecos River. The Comanche agreed to

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[11] Kenner, *Comanchero Frontier,* 93, 96, 120, 126; General Land Office Field Notes Township 13N, Range 32E, VR 26, D309, April 1856, microfilm at Bureau of Land Management, Santa Fe, NM, 141.

stop raiding wagon trains and to trade only at Ft. Union or other "approved" locations, a concession the Americans hoped would terminate the *Comanchero* trade.[12]

The truce failed before the end of May, and the departure of soldiers to fight in the Civil War allowed the Comanches to resume trading Texas cattle and former Texas residents to the New Mexicans, despite the presence of a new Army post at Camp Easton (renamed Ft. Bascom in August 1863) on the Canadian River near modern Tucumcari, NM. The cattle in some ways replaced the bison that the Comanche had traded westwards, just as the Anglo-Texan and Mexican captives replaced the Native Americans that the Comanche had exchanged for Hispano goods and produce. One difference between the current and earlier trading patterns was that the bovines drew their energy from the grass of the southern High Plains rather than the Canadian River watershed. As previous residents of the Canadian Valley had done, the Comanche shifted their range to match that of the bovines when the animals left during extended drought. In this case, however, the bovines belonged not to other Native Americans' territories but to Anglo-Texan ranchers who sought redress for the stolen animals by petitioning the federal government for repayment or return of the animals. As a result, the Territorial Government urged the Army to act against the Comanches.[13]

In 1864 the U.S. again declared war on the Comanches and Kiowas, sending Col. Christopher "Kit" Carson out to defeat the Comanches in October of that year. Lt. Colonel Francisco Abreu captured four Kiowas near Ft. Bascom at the Ute Creek – Canadian confluence,

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[12] Kenner, *Comanchero Frontier,* 136, 144.

[13] Kenner, *Comanchero Frontier,* 136, 144, 148; J. Evetts Haley, *Charles Goodnight: Cowman and Plainsman* (Norman: University of Oklahoma Press, 1949), 186, 194. The Navajo held at the Bosque de Redondo also took a toll on passing herds, but the Comanche and *Comancheros* deserved much of the "credit" for Texan cattle losses, according to Haley and Goodnight.

and they told him that the main Kiowa and Comanche winter village was farther downstream, near the abandoned Bent trading post. Colonel Christopher "Kit" Carson led 407 U.S. Army soldiers, Utes and Jicarillas down the river in November, hoping to catch the Comanches unawares. However, the environment that supported the Indians proved problematic for the Anglo-Americans to cope with.[14]

It was winter, and the Comanches and Kiowa had taken refuge in the familiar comfort of the Canadian Valley. They were camped at the red bluff on the north side of the Canadian near the flood plain along a tight bend in the river. The Comanches and their allies had good water, shelter from the winter winds and good grazing for their horse herds, and knew the terrain very well. Captain George Pettis, a soldier with Carson's expedition, later described advancing through the tall grass in the Canadian Valley and explained how piles of driftwood left from the river's "freshets" made moving the Army's mountain howitzers very difficult. The cold, the lack of good grass and delays because of winter storms meant that Carson's horses (and men) were hungry and relatively weak by the time they neared the Kiowa-Comanche encampment in what is now Hansford County, Texas. After a cold camp, Carson ordered his men to attack the closest group of Indian lodges, those of Tohasen and his band of Kiowas. The Kiowa warriors fought as the women and children fled into the canyons and high ground while Tohasen and others rode downstream to warn the Comanches. The American soldiers and their Indian allies pushed through the camp and came around the bend towards the main encampment but were outnumbered and forced to retreat. The attacking warriors pushed Carson and his men into rough terrain, burned the grass around them, and made off with almost all the Indian horses that Carson had been trying to capture. Indeed, Carson later admitted that it was only the use of modern

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[14] C. Boone McClure, ed., "The Battle of Adobe Walls," *Panhandle Plains Historical Review*, 21 (1948), 30, 42.

military technology in the form of grape shot and other shells from the mountain howitzers that allowed him and his men to fall back to cover. George Bent, Charles Bent's son, was at the battle and later stated that it was only the soldiers' getting behind the shelter of the old trading post that saved them. Kiowa survivors told anthropologist James Moony that their warriors had gone, that the camp was defended by old men and striplings, and that all their women and children had escaped to the shelter of the broken terrain of the Breaks. The army horses were too weak to pursue the Comanches and Kiowas, although the Army soldiers did loot and burn 150 Kiowa lodges and all the winter supplies stored in them. Lacking the supplies necessary to pursue the Comanches or even to remain on the High Plains, Carson brought his troops back to Ft. Bascom and Ft. Union, urging in his final report that although they failed to achieve the goal of stopping the plains Indians and interrupting the *Comanchero* trade, attacks in winter seemed the best way to break the Comanches.[15]

In an effort to find a peaceful solution to the problem of warfare on the High Plains, in 1867 the United States government arranged for a treaty meeting at Medicine Lodge, Kansas. Groups of Cheyenne, Kiowa Arapahoe, Comanche and Apache gathered to meet representatives of the Secretary of the Interior and Department of the Army. Messengers traveled to the various trading posts and meeting places, and in mid October 1867 a meeting took place on Medicine Lodge Creek in southern Kansas. Traders, reporters and other curious observers joined the official delegation and the various interpreters at the meeting, which lasted from October 8 to October 28. Gifts and speeches passed back and forth between the Anglo-Americans and the

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[15] George H. Pettis, *Kit Carson's Fight with the Comanche and Kiowa Indians at the Adobe Walls on the Canadian River November 25th 1864* (Providence, RI: Sidney S. Rider, 1878), 18, 31, 38. Pettis claims to have seen 176 lodges burned. C. Boone McClure, ed., "Adobe Walls," 45, 52, 55, 56-57; Mildred P. Mayhall, *The Kiowas* 2nd edition. (Norman: University of Oklahoma Press, 1971), 230, 231.

Indian groups, and the visiting reporters were in awe of the Kiowa leader Satanta and wrote detailed descriptions of him and of other Native American leaders who visited the pressmen's camping area. On October 20, Satanta voiced his opinion of the treaty proposal this way, "When the buffalo leave the country, we will let [the Great Father] know. By that time we will be ready to live in houses," as the treaty required and Senator John B. Harrison of Missouri, a negotiator, urged the Indians to do. The Comanche *paraibo* Parauasemena (Ten Bears) spoke the next day, and although the translator probably added a few flourishes, his words sum up the Comanches' ideas.[16]

Parauasemena began by pointing out that the Anglos started the fights, although his own "young men ha[d] danced the war dance." "Blue soldiers" had shot at the Comanches when they came into Kansas after the bison, and soldiers had ventured into the Canadian Valley as well, pursuing the Comanches, Utes and others. The Comanche in turn went to war and "[T]he white women cried and our women laughed." There were things the U.S. did that Parauasemena did not like, including the promise of making the Comanches live in houses. The Comanches wanted to live on the plains and hunt bison as their ancestors had done. "So why do you ask us to leave the rivers and the sun and the wind and live in houses. Do not ask us to give up the buffalo for the sheep." Parauasemena then laid much blame on the Texans, who took "away the places where the grass grew thickest and the timber was the best." The 67 year-old chief wanted peace, but on the Comanches' terms, much as they had made peace with the Spanish Colonial government in New Mexico in 1786. If the government would let the Comanches roam and keep the Anglos out of the buffalo prairies, the Natives would have all that they wanted, or so the government translation suggests. Instead, the Medicine Lodge Treaty promised the Comanches

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[16] John, *Storms Brewed,* 51, 127; Kavanagh, *Comanches*, 414-415.

annuities, farmland, assistance with learning to farm, and protection from interlopers so long as they gave up occupation of any land outside their designated reservations. Article 11 of the treaty stated that the Indians could hunt south of the Arkansas River "so long as the buffalo may remain thereon in sufficient numbers as to justify the chase," and that white settlement would be prohibited in that area, as per an earlier treaty.[17]

However, the Medicine Lodge Treaty did not solve any problems. The Kwahada (Quahadi or "antelope") division of the Comanches lived in the Canadian River watershed. None of their leaders had attended the signing and so they did not feel themselves bound by any treaty. Then a group of Comanche camping along with Black Kettle's Cheyenne on the Washita in western Oklahoma were caught when Col. George A. Custer attacked the Cheyenne camp in December 1868. Custer lost a small detachment to the Comanche warriors' counterattack. The Comanches who stayed on the designated lands in Indian Territory found their annuities reduced by the amount of money removed to pay for damages caused by raids committed by off-reservation Comanches. The bison remained (apparently) plentiful, and the incentives to stay on the Indian Territory reservation seemed to be declining rapidly. But the Anglo hide hunters pushed farther and farther into the Llano Estacado and the Canadian Valley. The hunters nearly extirpated the Kansas bison herd by 1872, and despite protests by the Comanches, Kiowa, and others about the promise in Article 1 of the treaty, Anglo hunters pushed into the Canadian watershed in increasing numbers.[18]

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[17] Kavanagh, *Comanches,* 414-415; Jones, *Medicine Lodge,* 205; "Treaty with the Kiowa and Comanche, 1867" in *Indian Affairs: Laws and Treaties Vol. II: Treaties* Compiled and Edited by Charles J. Kappler (Washington, D.C.: Government Printing Office, 1904), 980-81.

[18] Kavanagh *Comanches*, 422; Ernest Wallace and E. Adamson Hoebel, *The Comanches: Lords of the South Plains,*(Norman: University of Oklahoma Press, 1952), 314-315.

Unlike the Comanches and the Hispanos, Anglos hunted for commercial profit, not food and sport. Their goal was to obtain bison hides for the leather trade, and perhaps tongues for the luxury meat market. Armed with .50 caliber Sharps and other rifles, men like Billy Dixon, J. Wright Moorer and others organized small groups to travel onto the southern plains. They would make a camp and set up their gear, then go in search of the bison. Then the hunter would find a group of bison, the larger the better, and identify the lead animal, often an older female. He would then shoot that animal first, trying to kill her instantly. Then he'd shoot another and another, for as long as he could until the bison moved out of range. If done this way, in a "stand," the animals would not bolt and flee because they did not realize the threat or know its location. Hunters could kill up to 90 animals at a time in this manner. Then their assistants would come and skin the carcasses and cut out the tongues, leaving the rest of the animal to rot while the hunter sought out another group of bison. It was an efficient way to kill the animals and drew the wrath of the Comanches and *ciboleros* both.[19]

In 1874 a group of Kwahada Comanches attacked the buffalo hunters' base of operations in the Texas Panhandle; the former Bent Brothers trading post near the Canadian River called Adobe Walls. The medicine maker, Isatai (as he was later known), believed that he had *puha* that could make the Comanches and others resistant to Anglo bullets. A group of Comanche, Cheyenne, Kiowa and Arapaho warriors led by the Kwahada *paraibo* Quanah Parker gathered in the Canadian Valley in June. On June 27, just before dawn, the warriors attacked the newly-established store and gathered Anglo hunters at Adobe Walls. The hunters managed to hold off the attackers, who discovered that the *puha* failed to be as effective as advertised. After a four-

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[19] Hornaday, *Extermination of the Bison,* 468-470, 494, 496; John R. Cook, *The Border and the Buffalo: An Untold Story of the Southwest Plains* (Topeka: Crane and Company, 1907), 129, 132-133, 165-167.

day siege the Comanches and other Indians were driven off with considerable loss of life when Anglo reinforcements arrived at the post. This "battle" provided the U.S. government with justification for removing both the bison and the Comanches from the Canadian River Valley in what is called the Red River War or the Buffalo War of 1874-1876.[20]

Soldiers from Camp Supply and Ft. Sill, Indian Territory, Fort Union in New Mexico and Ft. Concho, Texas pushed into the *Comancheria* as commercial hunters continued slaughtering the bison. On September 27, 1874, Col. Ranald McKenzie surprised a Comanche *ranchería* in the Palo Duro canyon, 20 miles south of the Canadian River. Although the people were able to get away, McKenzie's men captured and destroyed their lodges, winter supplies and hundreds of horses. Other groups of soldiers followed the same method of starving and freezing the Kwahada and Nocona divisions, and the few others who had remained on the plains, into surrender. The bison followed shortly after the Comanches as hunters and Anglo ranchers began killing them off, until the last group that could be called a "herd" was killed in No Man's Land (modern Oklahoma Panhandle) in 1888, when C. J. "Buffalo" Jones found a group of 37. The time of the bison had come to an end in the Canadian River valley.[21]

Although they were the supreme rulers and master horsemen of the southern plains, controlling trade and forcing representatives of world empires to bend to their dictates, the Comanches' success could not last when unfavorable international politics, environmental processes and declining resources combined. As the United States came to dominate the plains, the Comanches could no longer "play" the Spanish or Mexicans against the French and Anglo-Americans. The removal and decline of former trading partners worsened the situation further

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[20] Wallace and Hoebel, *The Comanches,* 325-326.

[21] Wallace and Hoebel, *The Comanches,* 326-327; Hornaday, *Extermination,* 523.

because it reduced markets, reduced barriers to other hunters, and increased pressure on resources as more and more groups competed for bison and horses. A dry period that began in the 1840s and spread from the Rio Grande Valley across the *Comancheria* into the rolling plains to the east lasted into the 1860s and brought hardship to bison, antelope and humans alike. Within the Comanche divisions, the increasing human population faced decreasing bison numbers which made it harder to obtain the minimum number of animals, let alone enough to trade the surplus, while drought reduced the size of the critical horse herds. Pekka Hämäläinen poses the interesting theory that cattle raiding may have helped the Comanche stabilize bison numbers in the late 1860s and early 1870s by providing a second source of meat products and hides. Even if the Comanche did manage to slow the bison's decline, competition from American industrial hunters undid the precarious balance. As the strength of the Comanches and the numbers of bison waned, Hispanos from New Mexico took advantage of the vacuum left on the plains to expand eastwards, advancing their frontier. Even before the Red River wars terminated the Comanche's presence in the Canadian River watershed, Hispano sheep flocks began grazing their way out of the mountains and along the riparian corridors, the vanguard of a new presence in the river valley. The bison river became a stream of sheep.[22]

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[22] Hämäläinen, *Comanche Empire,* 329, 360-61; Flores, "Bison Ecology," 68-69; Jose Ynocencio Romero to Earnest R. Archambeau. "Spanish Sheepmen on the Canadian at Old Tascosa" *Panhandle Plains Historical Review* 19 (1946).

CHAPTER 4 - River of Sheep

Imagine a young man walking beside a pack-laden burro. It is mid-August, 1876, and the early-evening sun beats down on the young Hispano. The hot southwest wind blowing over the plains and into the river breaks does little to cool the *pastor,* the shepherd. Eight hundred hardy *churro* sheep walk around the shepherd as he drives them out of a small side canyon and toward a sheltered area not far from the Rio Colorado, as he calls the Canadian. The sheep need water because of the heat; their thick late season coats are heavy, and soon it will be time to shear the flock, bundle the fleeces and cart them west to the railhead in Las Vegas, or northeast to Dodge City. But the *pastor* worries about lobo wolves and coyotes. He has contracted for a *partida* and one fifth of the lambs belong to him. His uncle, a former *comanchero*, helped him get the contract with the flock owner. Uncle Pedro also told the shepherd where the best springs and tall-grass were to be found. Now, the shepherd must get his sheep settled and a fire built for protection. He has heard lobos calling from nearby the last few nights. They grew fat on the bodies of the dead bison, but now much of that meat is gone, and they are hungry. The shepherd and his dog hurry the flock. He has heard stories that solitary *pastores* like him are not the only Hispanos venturing east onto the plains, but he has not seen anyone or their sheep for the past month, and does not think too much about it. His flock is much more important than vague tales.[1]

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[1] Fictional account, details drawn from: Anna Jean Taylor, "Pastores in the Texas Panhandle 1876-1884" Unpublished Manuscript, Wayland Baptist College, 1976, in Taylor File, Panhandle Plains Historical Museum (PPHM), 9; Ralph Charles, "Development of the Partido System in the New Mexico Sheep Industry" (State College, New Mexico, 1940) WPA File # 106, New Mexico State Record Center and Archive (NMSRCA), 36; José Ynoccencio Romero "Spanish Sheepmen on the Canadian at Old Tascosa" as told to Ernest R. Archambeau. *Panhandle Plains Historical*

The *pastor* imagined above is only one of a number of Hispano New Mexicans who moved into and out of the Canadian River valley and watershed between 1860 and 1890. Transhumant shepherds following their slow flocks, ambitions *ricos* moving east to establish ranches and town-like *plazas*, and families and groups of neighbors looking for more room all followed the streams and rivers draining east from the Sangre de Christo Mountains and onto the plains. They used the land *extensively;* that is they spread their activities over a large area and a variety of habitats. These Hispanos, descendents of the Spanish who settled northern New Spain between 1580 and 1820 and who retained distinctive cultural and linguistic traits, shaped the Canadian River Valley by farming along its tributaries and grazing their large flocks of sheep in the well-watered lowlands. Although their activities left fewer traces than did those of the next wave of settlement to wash into the Canadian Valley, the Hispano presence left lasting marks on the area. One example of a Hispano family that left a mark in the Canadian Valley in Texas is that of don Casimero Romero.

In November 1876, twelve wagons loaded with household supplies, seed and tools rumble off the plains on a *comanchero* wagon trail that follows the south side of the Rio Colorado. The slow procession of horses, cattle, wagons and over three thousand sheep crosses the river at an old bison trail and comes to a stop on the north bank of the Rio Colorado beside a spring and stream called Atascosa. Don Casimero Romero visited here when he traded with the Comanches and now returns to settle and found a *plaza*. Relatives and neighbors from Mora County, New Mexico Territory, have joined him, scattering along the streams that feed the Rio Colorado. The valleys at the feet of the mountains in New Mexico have become crowded, but the

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Review 19, 1946, 61; Churro sheep observed by author at Rancho de las Golondrinas, Santa Fe, NM, October 12, 2008.

Comancheria remains open and is free for the taking now that the Comanches are gone. Romero surveys the river, tall grass meadows and stream as his people begin unloading and preparing for camp. There are no trees, but cottonwoods grow in other parts of the valley, and he can get shoots from there. There is grazing and forage for his animals, and a place for a garden and orchard as well as level ground for a good house. Don Casimero is satisfied.[2]

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[2] Romero, "Spanish Sheepmen" 45; Ernest Archambeau, "Pioneer Panhandle Settler Recalls Origin, Early Days of 'Old Tascosa'" *Amarillo Times* Thursday, February 28, 1946, 3; John R. Van Ness, "Hispanic Land Grants: Ecology and Subsistence in the Uplands of Northern New Mexico and Southern Colorado" in. *Land, Water, Culture: New Perspectives on Hispanic Land Grants* ed. Charles L. Briggs and John R. Van Ness (Albuquerque: University of New Mexico Press, 1987), 184; the Hispano and federal survey name for the river was Rio Colorado, "Vermillion River." Romero's arrival is factual, as are the circumstances around it. His thoughts are suppositions of the author.

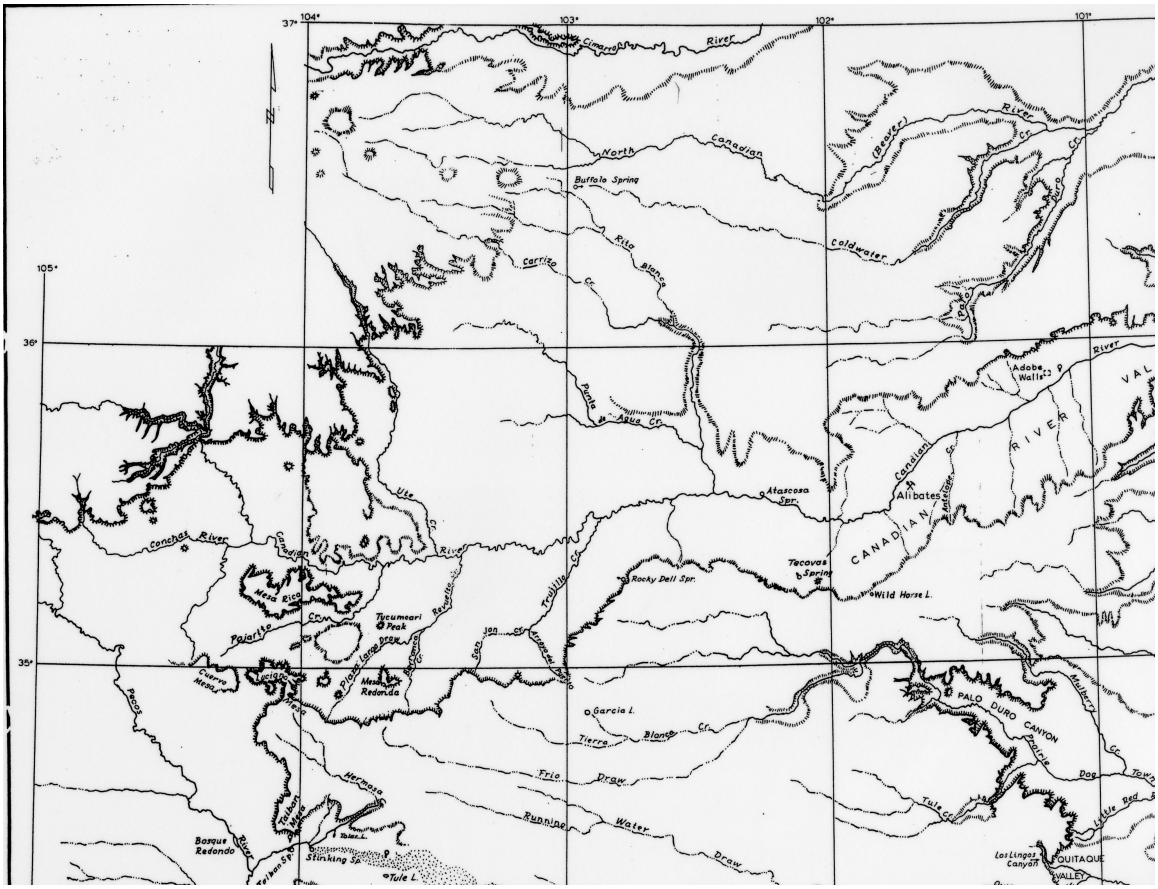

Figure 2: The Core Region of the Hispano Settlements. "Water Sources on the High Plains." © J. Michael Harter, 1989. Used with permission.

Hispano New Mexicans knew of the High Plains and Canadian River valley beginning the time when Coronado explored the region en route to the cities of Cibola in 1541. Later, in 1603, provincial governor Juan de Oñate followed the stream as he looked for resources and potential converts to Catholicism (and to Spanish governance). Franciscan friars soon visited the region that the soldiers had traveled, calling the Llano Estacado the "Plains of St. Francis." Other Hispanos also entered the plains although less willingly, as captives of the Comanches. Their descendents and relatives, if they returned to "civilization," became the frontier settlers called *genezarios* and later often worked as *comancheros*. When the trade in bison failed, some especially prosperous or determined Hispanos made use of their knowledge of the Canadian's

resources to help them as they settled the area, establishing *plazas* and ranches that took advantage of the water, forage, salt and creatures found in the valley and the uplands. These Hispano settlers and the visiting *pastores* practiced extensive land use, as was traditional in New Spain. Although Anglo-Americans supplanted the Hispanos in Texas within two decades of the first recorded settlement, Hispano land use still shaped the valley.[3]

The first property allocations that the Spanish kings made in the New World were grants, or gifts, of American Indian labor in what was called the *encomienda* system. However, as disease and overwork reduced the population of Native Americans, the Spanish crown shifted to making grants of land. All land and water belonged to the king and could only be alienated by the crown or by designated representatives including the viceroy and later the provincial governors. Within this practice, the Spanish colonial system had three types of land grants: a community grant, a personal irrigated grant, and a personal dry-land (or livestock) grant. Each had very specific residence requirements and legal rights and limits. However, all grants shared several basic features. All were (in theory) based on actual observed land that had been determined to be suitable and capable of supporting the type of grant requested, and all required confirmation that they would not interfere with older grants or Native American settlements (pueblos). And all three types of grant could be reclaimed by the crown, or after 1821 by the

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[3] John Miller Morris, *El Llano Estacado: Exploration and Imagination on the High Plains of Texas and New Mexico, 1536 – 1860* (Austin: Texas State Historical Association, 1997), 136-137; James R. Brooks, *Captives and Cousins: Slavery, Kinship and Community in the Southwest Borderlands* (Chapel Hill: University of North Carolina Press, 2002), 66, 133; Romero "Sheepmen," 47.

Mexican national government, if the grantee did not live on the property or show other proof of development of the grant.[4]

Neither the Spanish nor the Mexican governments made any land grants in the Comancheria east of the Pablo Montoya grant. The Pablo Montoya and adjoining Luíz Maria Cabeza de Baca Grant (Baca Location Number 2) were late grants, made by Mexican Governor Bartolomé Baca and the board of Territorial Deputation in 1824 (the Pablo Montoya) and by the United States Congress in 1860 (Baca No. 2).

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[4] Betty Eakle Dobkins, *The Spanish Element in Texas Water Law* (Austin: University of Texas Press, 1959), 90, 128; Michael C. Meyer, "The Legal Relationship of Land to Water in Northern Mexico and the Hispanic Southwest," *New Mexico Historical Review* 60, No. 1 (January 1985), 66; Malcom Ebright, *Land Grants and Lawsuits in Northern New Mexico* (Albuquerque: University of New Mexico Press, 1994), 14, 24-25.

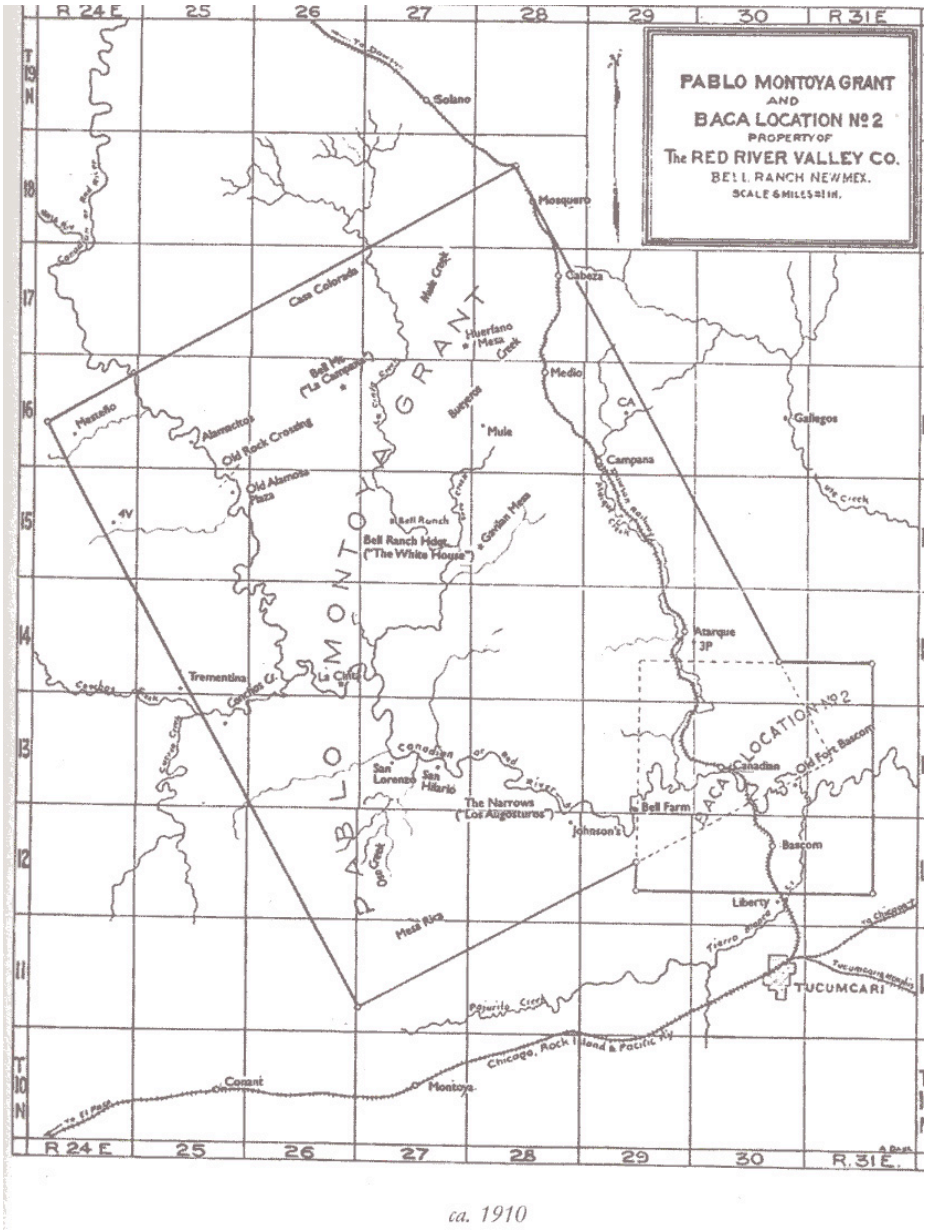

Figure 3: Bell Ranch. Red River Valley Corporation Collection, CSWR. Reprinted in Remley, p. 12.

They were both individual grants, and although Pablo Montoya apparently sent people out to tend cattle and sheep on the grant, because of Comanche hostility neither grant was truly settled until after the American annexation of New Mexico. Unless one includes the highly questionable Beales y Royuela Grant, purported to include 45,000,000 acres (18,211,250 hectares) in the Texas Panhandle, no grants were made east of the Pablo Montoya and Cabeza de

Baca grants before the American conquest of New Mexico in 1848. Jesus Maria Gallegos, then a farmer and *Comanchero* living in Monton de Los Alamos in the foothills north of Las Vegas, New Mexico, seems to have been preparing to apply for a land grant at the time of the United States' annexation of New Mexico, but no legal documents exist to confirm this family tradition. If he had, his would have been one of the easternmost grants possible due to the proximity of the contested Texas border and the Comanche Indians dislike of settlement within their territory, and probably would have been an individual stock grant rather than a community or farming grant.[5]

The Hispanos who moved to the eastern plains of New Mexico and the Texas Panhandle seem to have used the community grant as their model for land settlement. A community land grant was one made to a group of families and individuals who desired to settle a new area. The grant recipients, or "grantees," would have a survey done to determine the suitability of the desired area and to assure the grantor (the Spanish crown or later the Mexican government through the Territorial Deputation) that there were no overlapping grant boundaries or other conflicts of possession. Spanish community grant lands generally centered on a perennial stream surrounded by irrigable lands. This formed the heart of the grant, where the *plaza* would be located and where irrigable lands were surveyed, divided into fields and assigned to community members. Away from the fields were houses, gardens, and perhaps orchards if the conditions were right. Land that could not be irrigated but that was not protected forest served as a grazing and gathering commons where families' livestock would be kept in spring and summer and where people could harvest wild plants and fruit. Many grants included woodlands as a source of fuel, building material and *piñon* nuts, and as a place for hunting. This concern for including

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[5] David Remley, *Bell Ranch: Cattle Ranching in the southwest 1824-1947* Revised Edition (Las Cruces, NM: Yucca Tree Press, 2000), 18, 23, 28, 38; "Land Grants in San Miguel County" from the Center for Land Grant Studies, http:/www.southwestbooks.org/grants_sanmiguel.htm; Morris, *Llano Estacado,* 214, 218; Albert Gallegos to author, September 24, 2009.

differing types of land in a community's boundaries was not unique to the Spanish; English records show that Saxon and Viking villages were often settled, and land distributed, with consideration for the availability of pasture, crop and woodlands. These English "strip parishes" were drawn up so as to include some of all necessary types of land and access to springs or good streams. This variety of land and resources helped the community survive in dry years or in cases of crop failure or loss of livestock and encouraged extensive land use: that is, the comparatively light use of a large land area.[6]

Hispanos grew a variety of crops and raised livestock in the granted and private lands, spreading their effects on the land, flora, and fauna over a broad area. Irrigated fields contained wheat, corn (*maize*), and several types of beans, while gardens provided chiles, squash, melons and European herbs. Apples were a favored orchard fruit, along with peaches and pears. The common lands provided wild plums and chokecherries (*capulin*), as well as purselane, wild spinach (lamb's quarters; *quelites*), *yerba buena,* sheep sorrel and other greens and potherbs*, orégono*, prickly pear, and a large number of native plants used for medicinal purposes. *Piñon* nuts were (and are) an important source of protein and fat, making *piñon* pine trees a carefully guarded part of the grant. Burros, horses and mules provided transportation and manure, as did cattle. After the crops were harvested, animals that had been pastured in the uplands were brought in to graze the stubble and to leave fertilizer in the form of manure on the fields.

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[6] Van Ness, "Hispanic Land Grants," 185, 187, 189, 190-191; Meyer, "Legal Relationship," 66, 72; Paul Coones and John Patten, *Penguin Guide to the Landscape of England and Wales* (Harmondsworth, Middlesex, England: Penguin Books, 1986), 124.

However, the most economically important livestock on the grant and in the entire region were sheep.[7]

Sheep formed the heart of New Mexico's cash economy in the 1800s. Descended from the *churra* sheep introduced from Spain, New Mexican sheep provided coarse fleeces for rugs and blankets as well as for winter clothing, mutton and (rarely) lamb for the dinner table, fertilizer in the form of manure, and milk for cheese. The first sheep seem to have reached New Mexico in the early 1600s, perhaps as early as 1582. Navajo and Comanche raiders carried off sheep as well as human captives, and in time the Navajo also became sheep-raisers, although they still raided Spanish and Mexican flocks. At first the New Mexican shepherds trailed any extra sheep south into Chihuahua for sale in the mining towns, but after the annexation of much of the Southwest by the United States in 1848 and the discovery of gold in California in 1849, hundreds of thousands of sturdy churros walked west to the gold fields, while shepherds returned east to the Rio Grande valley with much-needed cash. Sheep and wool became New Mexico Territory's largest cash crop. The longhaired churro sheep "rustled" well, meaning that they were able to survive on rough browse and limited water, had a strong flock instinct, and were a good all-around sheep. One of their strengths was their ability to forage on almost any type of vegetation.[8]

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[7] Mary Montaño, *Tradiciones Nuevomexicanos: Hispano Arts and Culture of New Mexico* (Albuquerque: University of New Mexico Press, 2001), 220, 222, 231, 232; Michael Moore, *Los Remedios: Traditional Herbal Remedies of the Southwest* 2nd Edition (Santa Fe: Museum of New Mexico Press, 1990); Archambeau, "Pioneer," 4; Romero, "Sheepmen," 56.

[8] J. R. Dodge, Special Agent, USDA, "Sheep and Wool: A Review of the Progress of American Sheep Husbandry" USDA Report No. 66 (Washington D.C.: Government Publishing Office, 1900), 18; Paul H Carlson, *Texas Wollybacks: The Range Sheep and Goat Industry* (College Station: Texas A&M University Press, 1982), 20; Edward Norris Wentworth, *America's Sheep Trails* (Ames IA: Iowa State College Press, 1948), 26, 123, 125, 11.

The epithet "wooly locust" is not entirely inaccurate. Sheep, like bison, bite close to the ground when eating grasses and forbs. As a result, they remove more of the growing plant when they graze. Sheep generally spend eight or nine hours a day eating, but may graze for up to thirteen hours if food is difficult to find. After grazing they stop and ruminate, resting and chewing their cud for forty-five to ninety minutes before starting to graze again. If possible, sheep generally concentrate their feeding efforts in the four hours after sunrise and the four hours before sunset. They base their food preferences on edibility and nitrogen content, beginning with tender and easy-to reach nitrogen-rich plants such as clover, then moving to grasses and if necessary to brush such as sagebrush. In general, on rough terrain like the Canadian River Breaks, flocks will rest upslope but graze in the valley bottom where they can find shade and water. Sheep, like bison, can go for more than twenty-four hours without water if the temperature is below 40 Celsius (104 F) and their food is not too salty, so *pastores* could move the flocks away from the streams and make the most use of almost all possible browse. In the Australian salt-brush country, sheep are kept within seven kilometers (4.4 mi) of a water source, and it is very likely that Hispano *pastores* followed similar practices as they grazed their flocks down the Canadian River Valley or on the surrounding plains.[9]

Sheep had their effects on the Canadian River Valley, especially after 1874 when it became safer for *pastores* to graze into New Mexico's eastern plains and the Texas Panhandle. Sheep's sharp, cloven hooves compressed the soil on hillslopes as they grazed the scattered brush and bunch grasses. This tamping was especially pronounced if the soil is light and very dry, as is often the case in the Canadian Breaks during the fall or in early spring. As a result, the soil compacted and a larger proportion of the rainfall flowed quickly over ("ran off") the surface

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[9] J.J. Lynch, G. N. Hinch and D. B Adams. *The Behavior of Sheep: Biological Principles and Implications for Production*. (Wallingford, England: CAB International, 1992), 12, 13, 14, 17.

instead of soaking into the ground, leading to increased erosion. In addition, a flock of 1500 to 3000 sheep ate a lot, even if the shepherd kept the flock moving along the stream valley while the animals grazed. Sheep need between four and six pounds (1.8 – 2.7 kg/day) of food per day, more in extremely cold or hot weather, so a thousand "average" sheep required two or three tons of plant matter (4000-6000 lbs, 1818 - 2727 kg) per day. Theoretically, this meant that the flock needed to graze bare between 4.6 – 6.9 acres/day (1.9-2.8 ha/day), or that a shepherd could keep one hundred forty four sheep on an acre of shortgrass during times of average precipitation, provided that there were sufficient water. In reality, frequent movement of the flock provided lower stocking rates, when conditions permitted. Livestock expert Joseph McCoy observed one flock wintering at A. B. Legarel's sheep ranch in the Canadian River Valley on the New Mexico - Texas border on December 24, 1880 and reported that the shepherd oversaw 15,000 animals. The next day McCoy saw several more "large herds of sheep," all of which fed in the breaks, probably concentrating in the sheltered valleys and washes. As one knowledgeable modern observer told the author, "Sheep can really clean out a valley." If this happened during the fall while the flocks grazed upstream en route to their home villages, the damage to streamside (riparian) vegetation would be even greater than in the spring or summer, both because the lack of water on the uplands forced more *pastores* to concentrate their flocks in the valleys, and also because the plants would not have time to recover before winter dormancy. U.S. Army Captain Randolph Barnes Marcy described the difficulty of finding grass in close proximity to water for his horses and mules in June 1849 because the Hispanos' sheep grazing along the Pecos River not far from the Canadian Valley had eaten out (overgrazed) the lands closest to water. Lieutenant J. H. Simpson, a member of Marcy's party, reported seeing one band of 2000 sheep, and a second flock nearby that he estimated at 4000 animals. Flocks like these could easily have

stripped the vegetation from smaller tributaries or narrow valleys, and the growing numbers of sheep in the Rio Grande watershed in the years following the Civil War forced *pastores* to move east, onto the uplands of the *Comancheria.*[10]

As the valleys and woodlands around the land grants and non-grant villages in the uplands filled with settlers and their herds, and as sheep numbers increased in the mid-1800s, *pastores* began driving their charges farther afield despite the risks of losing their flocks and even lives to the Plains Indians. First the shepherds, including those observed by Captain Marcy, moved downstream along the rivers and streams flowing from the eastern slopes of the Sangre de Christo and Manzana Mountains, including the Gallinas, Conchas, Cimarron and others, always keeping a wary watch for Comanches and lobos.

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[10] Bradford P. Wilcox and M. Karl Wood, "Hydrologic Impacts of Sheep Grazing on Steep Slopes in Semi-Arid rangelands," *Journal of Range Management* 41, No. 4 (July 1988), 303, 305; W.K. Laurenroth and O.E. Sala, "Long-Term Forage Production of North American Shortgrass Steppe, " *Ecological Applications*, No. 4. (1992), 398; Joseph Geaty McCoy, "Joseph Geaty McCoy Diary" June 29, 1880 – January 30, 1881, Microform Ms. Box 406, Kansas State Historical Society; Anonymous BLM employee to author, July 13, 2008; Subcommittee on Environmental Stress, Committee on Animal Nutrition, Board on Agriculture and Renewable Resources, Commission on Natural Resources, National Research Council, *Effect of Environment on Nutrient Requirements for Domestic Animals* (Washington D.C.: National Research Council, 1981), 86, 91; Grant Foreman, *Marcy and the Gold Seekers: The Journal of Captain R. B. Marcy with an Account of the Gold Rush Over the Southern Route* (Norman: University of Oklahoma Press, 1939), 244.

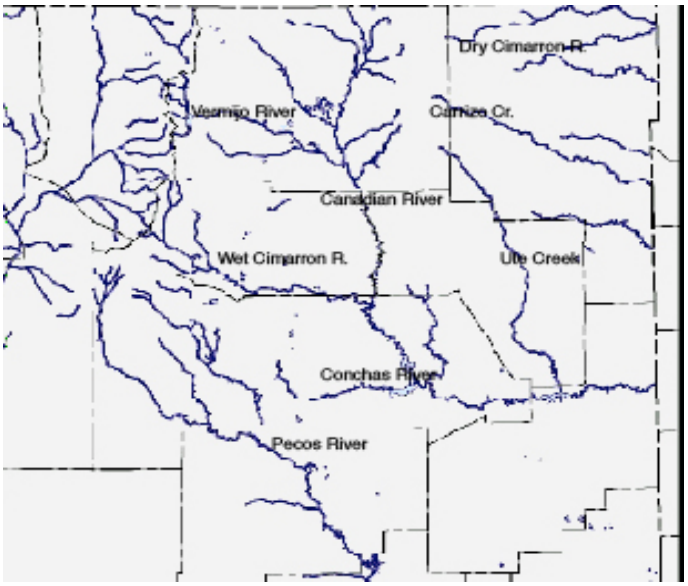

Figure 4: from "Perennial Streams". University of New Mexico NMWRRI GIS, 2002.

Oral historian Samuel L. Gonzales recounts the story of Norberto "Beto" Jaramillo and his experience with what Beto thought were Apache Indians as Beto watched a flock belonging to a wealthy Hispano. The Apaches rode into the 10-year-old's camp, took his clothing and left, after watching in fascination as he showed them how to use the top he had been playing with. Beto drove the flock "to the top of a mesa above his camp and hid in some tall sotol or bear grass." When the Apache returned and he failed to answer their calls, they burned his supplies and left.[11]

The boy's camp and herding duties were typical for the period. There would have been very little of value in the camp, aside from food and even that was limited to flour, bread, cornmeal and dried meat, all provided by the *patron* who owned the flock. If possible the sheep were penned in a temporary corral at night, or in a more permanent one like those later constructed in the Canadian Valley in Texas. During winter, especially during lambing season, a

[11] Samuel Leo Gonzales, *The Days of Old*, 18-19.

diligent *pastor* would build a fire at night in order to warm the sheep and drive off lobo wolves and coyotes. This consumed a great deal of wood and provided another reason for the constant movement of the flocks of *churros*. By 1870, some *pastores* ventured even as far east as the Llano Estacado, but very rarely, and one suspects that any shepherd who did so had relatives or former trade associates among the Comanche who could assist and protect him. However, the risks of grazing that far from "civilization" could be very high: Captain Marcy reported Hispano slaves and sheep among the Comanches that Marcy's party encountered near Tucumcari Mountain. There were also additional risks in traveling into hostile territory for someone who would be paid in shares of the flock.[12]

Partida contracts, or "sheep-on-shares," provided a way for livestock owners, either individuals or sometimes communities, to share the risks and labor of caring for the growing flocks. Increasing numbers of *patrons* shifted from debt labor to offering *partida* contracts after 1867, when the US Congress officially banned debt peonage. The practice of requiring service to work off debts frequently led to de facto slavery as interest on the debt mounted faster than the debtor could work and pay back the obligation, giving the *patron* what amounted to a shepherd for life. The *partida* practice became very common after 1874 as sheep numbers increased in response to greater demand and temporarily reduced numbers of raids by Native Americans. Consumers in the eastern parts of the United States wanted more wool carpets and cloth of all kinds and more mutton and other meats. That meant flock owners needed to raise more sheep to produce the wool and meat. This larger sheep population required more grazing land and more shepherds, and sharecropping sheep proved a successful strategy in the Territory. The caretaker, or *partidario*, contracted for a period of time ranging from two to five years. The *patron*

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[12] Taylor, "Pastores," 9; Foreman, *Marcy*, 240.

provided the animals, usually a mix of ewes and wethers (gelded males) and a ram, and paid any taxes and fees due to the crown, territory or state, along with shearing costs. The flock owner occasionally provided some supplies, although this varied from contract to contract and was fairly uncommon. The *partidario* was responsible for feeding and protecting the animals, doctoring the flock if needed and delivering the fleeces and sometimes a set number of market-ready wethers every year. If the *partidario* did not watch the flock himself, he was responsible for hiring a *pastor*. At the end of the contract period, the shepherd could keep a certain percentage, usually twenty percent, of the increase in lambs and wethers over a certain agreed-upon number, and twenty percent of wool sales over a certain amount. However, if the flock did not meet the required numbers, whether from weather losses, animals killed by predators or the shepherd's lack of care, the *partidario* would owe the *patron* for the missing animals.[13]

It is easy to imagine how one especially hard winter could send a man into debt, while a series of mild winters and an especially careful *pastor* might lead to the start of a fortune. Some flock owners paid a flat rate for sheep care, rather than letting the animals on shares. Others provided assistance to the *partidario* and his family in the old hacienda-derived system of *peon y patron*. Several of the men who established permanent settlements on the eastern plains owned flocks that they let out on *partida* or on simple contract. These *ricos* eventually established land-grant style communities and based their wealth on sheep and cattle. Among these Hispano pioneers, Casimero Romero and two of the Gallegos brothers, Francisco and Emiterio, stand out

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[13] Charles, "Development of the Partido System," 12, 18, 36; Fabiola Cabeza de Baca, *We Fed Them Cactus* 2nd Edition with an introduction by Tey Diana Rebolledo, (Albuquerque: University of New Mexico Press, 1994), 6, 7.

for the duration and scale of their undertakings and how they used the Canadian Valley's resources.[14]

It was not the working shepherds but well-to-do farmers and ranchers and former *comancheros* who left their names in the history of the central Canadian River watershed. Francisco and Emiterio Gallegos were the second and third sons of Jesus Maria and Dorotea Gallegos. According to family tradition, Jesus Maria and Francisco were *comancheros* who traded on the eastern plains as well as farming north and west of what is today Watrous, NM at the community of Monton de Alamos. The 1870 census lists Jesus Maria as a farmer owning $1415 in real estate and $14,653 in personal property. He and Dorotea at that time had ten children ages 23 to 2 years old and two domestic servants, one of whom may have been a formerly enslaved Indian woman. Robert Julyan's *The Place Names of New Mexico* states that Jesus Maria founded the community of Gallegos on Ute Creek, in modern Harding County, in the 1840s. The Hispana author Fabiola Cabeza de Baca describes shepherds moving into the llano at the same time, but it is much more likely that Gallegos traded with the Comanche *rancherías* in the Ute Creek and Canadian River valleys, establishing a presence but not actually settling at the Rincon Colorado, since the Comanches actively discouraged permanent Hispano residence on the *Comanchería* at that time. As *comancheros*, both Jesus Maria and Francisco, and probably Emiterio as well, had the opportunity to scout the plains, identifying permanent streams and other places that might be good to settle at some point in the future. Albert Gallegos, a direct descendent of Emiterio Gallegos, believes that his ancestors were in the process of petitioning for a land grant from Mexico when the American conquest changed the legal

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[14] María E. Montoya, *Translating Property: The Maxwell Land Grant and the Conflict Over Land in the American West 1840-1900* (Berkeley: University of California Press, 2002), 66-68 for a discussion of debt peonage; Taylor "Pastores," 16.

situation and increasing Comanche hostilities also made the region too unsettled. As a result, the Gallegos family bided its time, waiting for a more auspicious moment. For Francisco, Emiterio and their relatives, that moment came in 1872.[15]

[15] Interview with Albert J. Gallegos, April 30, 2009; Cabeza De Baca, *Cactus*, 5; 1870 U.S. Census, San Miguel County, New Mexico Territory; Robert Julyan, *The Place Names of New Mexico* Revised Edition, (Albuquerque: University of New Mexico Press, 1998), 142-143; Albert J. Gallegos interview, September 24, 2009.

CHAPTER 5 - Gallegos and Romero

The first major Hispano settlement of the Ute Creek and eastern Canadian River watershed came about because of the comanchero experiences of the Gallegos and Romero families. Francisco and Emiterio Gallegos and others used their knowledge of the Llano to locate settlement sites that had water and good grazing even in dry years. Jesus Maria Gallegos y Sanchez and his sons Francisco, Dionicio, Emiterio, Macario, Luis B. and Eugenio and eventually several relatives and in-laws including Quinireo Gallegos, and family employees settled around one such location: Ute Creek, north of its confluence with the Canadian in far eastern New Mexico. Laying on the western edge of the Ogallala Aquifer, Ute Creek flowed year around, while the upstream tributaries such as Mosquero and Tequesquite Creeks delivered water after local storms and during the spring snow melt. Francisco and his family located their homestead claims at the Rincon Colorado, the “red corner” or “bend” where the river valley widened somewhat.

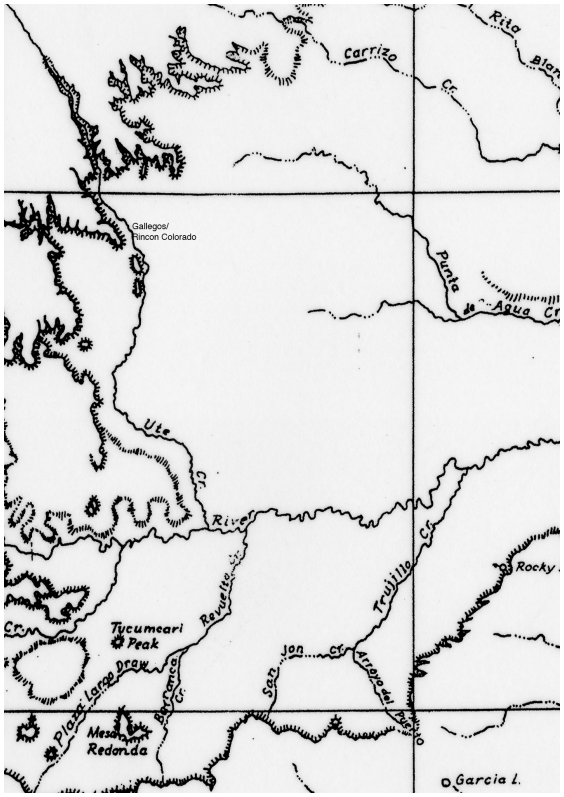

Figure 5: Gallegos, Ute Creek and Canadian River. From J. Michael Harter, 1989. The Gallegos family holdings extended roughly from Gallegos Mesa and Ute Creek down to the Canadian River and as far east as Punta de Agua Creek.

A distinctive vermillion-colored bluff west of the main settlement at the foot of a larger mesa had served the Comanches as a vantage point, and may have been a site for gathering medicine power, or *puha*. Francisco's grandson Frank Cabeza de Baca recounted a family story that an Indian named Hele Mata had approached Francisco and told him about the Rincon Colorado in 1868, then traveled there with Francisco and invited him to settle. Francisco married in 1871. He used funds from the sale of a farm left to him by his uncle Ramon Alireid, to purchase supplies for both his family and for a number of other people interested in settling under Francisco's patronage. Tradition has it that two hundred people from Las Vegas and Los

Alamos de Monton (on the eastern side of the mountains) joined Jesus Maria, Francisco and Emiterio on Ute Creek and on other small streams nearby.[1]

Don Jesus Maria and his sons combined Hispano and Anglo land settlement practices to establish their settlement on Ute Creek. Francisco, along with several of his brothers, began with a preemption claim, or claim-by-residence, for eighty acres at the Rincon Colorado. To gain additional land, both Francisco and Emiterio, who settled a bit farther east, also assisted their fellow emigrants with filing homestead claims that the Gallegos family then bought after the claims had been perfected. In this Francisco acted as the community *patron*, a pattern his descendents described in their accounts. Francisco Gallegos then established a store at the community of Gallegos and paid his workers in script, brass coins good only at the store or in exchange for livestock. Ostensibly his object was to reduce the temptation to thieves and robbers such as Black Jack Ketchum who roamed the area. The Gallegos brothers sponsored a number of godchildren at the Church of the Immaculate Conception on the ranch and there was also a school there as well, along with a post office after 1884. The main settlement resembled Hispano *plazas* like those farther west in that it was laid out around the corrals so that the valuable animals, such as the Steeldust horses Francisco brought east with him, could be easily defended. The land owned by Francisco and Emiterio Gallegos and their extended family and supporters contained valley-bottoms where they could cut hay and raise vegetables, springs and creeks to supply their livestock and households, and grassy uplands for grazing. Even after Francisco's

[1] Albert Gallegos April 30, 2009; Mary Groom Clark, *A History of New Mexico: A Mark of Time* (Canyon, TX: Staked Plains Press, 1983), 169; "A Biography of Francisco Gallegos," author unknown, publisher unknown, Albert Gallegos private collection, 2.

death in 1899, his family continued the blend of traditions by maintaining a warehouse on the railroad as soon as a branch reached Logan, at the mouth of Ute Creek in 1901.[2]

The Ute Creek settlement prospered. If one could step back in time to the spring 1887 and look around from the top of the crimson formation of the Rincon Colorado, one would have seen an apparently endless sward of ankle to knee-high short grasses, including several kinds of gramas and buffalo grass, stretching east and south. Unlike the prairies farther east, fire did not stimulate these plants and so the Gallegos clan and their "neighbors" had no need to burn their lands or do ought to maintain them aside from not overgrazing. Behind the Rincon rose the steep-sided, basalt-topped plateau that formed the border between the Gallegos holdings and the Pablo Montoya/ Bell Ranch lands and that divides Ute Creek from the Canadian River gorge. To the east, the land rose for several miles in a smooth slope out of the Ute Creek Valley before descending into the Tequesquite Creek drainage and eventually meeting the sheer western face of the Llano Estacado. The grasses carpeting the valley would perhaps not have been as plentiful or tall as they were in 1872 when the Gallegos family arrived, because of both the herds of cattle and sheep drifting across the open range and the drought in progress, but a few rain showers would have freshened and greened the short buffalo and grama grasses.

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[2] Albert J. Gallegos interview April 30 and September 24, 2009; Clark, *Mark of Time,* 170, 166, 167; Cabeza de Baca, *Cactus*, 4; David Stahle and Malcolm Cleveland, "Texas Drought History Reconstructed and Analyzed from 1698 – 1980" *Journal of Climate* 1, (Jan 1988), 64; Milton Callon, "The Red Corner," *New Mexico Magazine* Vol. 42, No. 8, (Aug 1964), 12; Montoya, *Translating Property,* 65; Boyd C. Pratt, *Gone but not Forgotten: Strategies for the Comprehensive Survey of the Architectural and Historic Archaeological Resources of Northeastern New Mexico* Vol. 1: History of Northeastern New Mexico. (Santa Fe: New Mexico Historic Preservation Division, 1986),155, 203.

Figure 6: Looking East from Gallegos Mesa. © Buneesa K. Terry, 2009. Used with Permission, all Rights Reserved.

The warm south wind would have brought the scent of cottonwood trees and wet soil up from the stream below the Rincon, as a group of people worked in the garden acres, planting vegetables. Sheep bleated as they were driven in for the early shearing, the young lambs trailing their mothers down to the settlement at the bottom of the red sandstone bluff. They had been grazing, converting the nutrient-rich herbage into muscle and hair – meat and fleeces for the *pastores* and their *patrons*. Away from the main settlement, out beyond the extinct volcanic vents of the Don Carlos Hills to the northeast, under the hard blue sky, seven thousand cattle grazed, along with some more of the 28,000 sheep that bore don Francisco and his family's brands and earmarks. Employees of don Jesus Maria and don Francisco watched the flocks and herds as they grazed across the hundreds of thousands of acres the *patrons* claimed, moving the animals when necessary and guarding them from predators that included wolves and cougars as

well as humans. Two hundred burros and five hundred horses provided transportation, carrying loads and people to the closest railroad station and trading centers – Springer and Las Vegas.[3]

At this time, don Jesus Maria, Francisco, Emiterio and their relatives owned a total of 23,057 acres (9331 hectares) centered in the area around Township 15 North, Range 31 East, allowing them to control over 300,000 acres (121,410 ha) of open-range federal lands. It is easy to imagine the men's satisfaction with their accomplishments and the future they are leaving their families and dependents. The men looked after their property themselves, not hiring a manager or as later Anglo-Americans would have called him, a "cow-boss." They diversified the family business, doing their own shearing and shipping of fleeces, and probably cultivating politicians in Santa Fe and Las Vegas as carefully as they managed their herds and flocks. No written records of the condition of the range under the Gallegos family's management exist, but the fact that they were able to retain their reputation for good quality livestock and to survive on their deeded property into the 1940s suggests that they used their land at least somewhat carefully. Their older brother Dionicio received part of the family farm at Monton de Alamos, including ninety *varas* of land, a house and a corral. Francisco and Emiterio owned and controlled much more. And they were no longer alone in the Canadian River watershed: other Hispano families and groups also moved east in the 1870s, some pushing beyond the edge of the New Mexico Territory.[4]

Like the Gallegos brothers and family, Casimero Romero moved from the foothills to the plains, in his case settling the Canadian Breaks in Texas in 1876. A former Indian agent and

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[3] Clark, *Mark of Time,* 170; author's observation, September 21, 2009; Albert Gallegos e-mail letter to author, July 30, 2009.

[4] Title Deed, Jesus Maria Gallegos to Dionicio Gallegos, December 19, 1876, San Miguel County Deed Records 1887-1888, Book 35, Roll 30 of 88, p 126-128, NMSRCA.

comanchero, Romero brought his family, livestock, neighbors and twelve wagons of goods from near La Junta in Mora County, New Mexico. Like other Hispanos moving into the Canadian Valley, Romero did not settle directly on the banks of the river but instead chose a site several hundred yards (several hundred meters) north of the Canadian on the east side of a bluff near Atascosa Creek ("stuck-in-the-mud" or "boggy" creek), where floods were less of a hazard and where fresh water was easier to obtain. Directly south of Romero's settlement, or *plaza*, Ventura Borrego settled on the south side of the river in 1878, while other new arrivals scattered out to the various spring-fed streams feeding the main river, just as the Native Americans had done with their camps and earlier settlements. Romero brought with him enough supplies to live for the year that it took workers to complete his house, kitchen building, corrals and sheep pen. He also diverted part of Atascosa Creek to irrigate an alfalfa field for winter fodder to supplement the Big Bluestem, Little Bluestem and other grasses mown from a prairie hay meadow on the river east of where the creek fed into the Canadian. Romero planted cottonwood trees, because there were none at the *plaza* site when he and his family arrived in November 1876. These and other efforts led to Casimero Romero's *plaza* reaching near self-sufficiency within a year, while the flocks provided hair and wool, meat and a resource that could be converted into cash to pay for items that could not be produced in the valley (such as sugar, glass for windows, metal items, luxury goods).[5]

Like the community land grants and the Gallegos settlement, Casimero Romero and his neighbors practiced extensive use of the valley's resources. His flocks of three thousand sheep traveled through the Canadian Valley perhaps as far east as the border of Indian Territory

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[5] José Ynocencio Romero, "Spanish Sheepmen on the Canadian at Old Tascosa" as told to Erbest R. Archambeau, *Panhandle Plains Historical Review* 19 (1946), 61, 49, 55; Ernest Archambeau, "Pioneer Panhandle Settler Recals Origin, Early Days of 'Old Tascosa'," *Amarillo Times* Thursday, February 28, 1946, 2, 3; Pratt, *Gone*, 217.

(modern Oklahoma) as well as grazing the uplands when rains filled the playas. Romero's cattle remained closer to home, feeding on the tall and mixed grasses of the breaks as well as the short grasses above. Upstream from his home water diverted from the creek irrigated a former beaver pond, now silted in and used as an alfalfa field and meadow of prairie hay. The spring-fed stream also watered a vegetable patch, while a second diversion downstream fed a fishpond. The garden produced corn, beans, watermelons, wheat, squash and other vegetables, and by 1890 an orchard provided apples. Wild fruits including plums and grapes came from thickets along the Canadian. For meat the *plaza* residents hunted deer, the few remaining bison, wild turkeys and antelope in order to supplement the home-raised beef and mutton. Casimero's son Ynocencio told an historian that they did not hunt waterfowl because they did not have shotguns, although in another interview he mentioned trapping beaver and muskrat, presumably to sell their pelts for extra income. Close to the New Mexico border, residents of the Salinas *plaza* made salt from the waters of a brine spring and lake north of the river, keeping some for domestic use in preserving food and hides and to meet the needs of their livestock, and selling or trading extra salt up and down the Canadian. Casimero Romero and his neighbors appear to have used a large area lightly, especially compared to later Anglo-American settlers. The new residents moved into what another observer of the river described as "paradise."[6]

This paradise extended from east of Romero *plaza* to the Canadian River Canyon in New Mexico Territory. Ynocenco Romero described a twenty-foot (6.1 m) wide stream possessing "no sand bars at all . . . and had deep, clear, living water," with high banks covered in bushes and

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[6] Archambeau "Pioneer", 4; James East account, Folder 1 Box 2, C. Boone McClure Papers MS 1994.91.1, PPHM, 19; Taylor *Pastores*, 31; John L. McCarty, *Maverick Town: The Story of Old Tascosa* Enlarged Edition. (Norman: University of Oklahoma Press, 1968), 17; W.S. Mabrey, quoted in William Nelson and John W. Maddox, "Early West Texas and Panhandle Surveys," in W.S. Mabrey Manuscript Files, PPHM.

tall grass, including big bluestem, western wheatgrass, wild plums, and young cottonwood trees. These collections of moisture-dependent species, including arrowhead (*Sattiga* sp) and *tule* reeds continued into the valleys of the tributaries. This was a refuge within the semi-arid high plains, where a tongue of the low rolling plains ecological and topographic region interrupted the short-grass steppe above the valley. Beyond the Canadian's main channel, meadows of mixed-grasses including little blue stem provided food and cover for the deer, prairie chickens, wild turkey, bison, black bear, mountain lions, bobcats and other animals, while channel catfish swam in the river. Trees were sparse at the Romero site, although wood, beaver lodges and beaver dams could be found on tributaries such as Rita Blanco Creek, West Amarillo Creek and other permanent, spring-fed streams. The outer valley near Romero's settlement was a rolling mix of washes, stream valleys and eroded bluffs, all covered in short grasses and brush except for the steepest slopes. In some places, tall reeds called *tules* marked the presence of wetlands. Farther west and upstream of Romero Plaza, Anglo-American surveyors described the land as second rate at best, in part because of the scarcity of trees, but they also noted that the uplands would be good for grazing, something the Hispanos already knew. Instead of having a relatively broad and sheltered inner valley, here the Canadian/ Rio Colorado flowed in a narrow canyon that cut into bedrock, complete with a small waterfall not far from the Ute Creek confluence. Federal surveyors' accounts mention a few patches of trees in the Canadian's valley, and comment on the "good native grass" covering the uplands. Even farther upstream, toward the communities on the Bell Ranch, near the Conchas/Canadian confluence, in 1861 surveyor John Lambert described the land between the slopes of La Cinta and Chical Mesas and Mesa Rica as:

> " . . . a beautiful fertile plain, well adapted for grazing purposes. That portion immediately on the Rio Colorado tributaries [is] very rich and susceptible of cultivation, cottonwood timber on streams in abundance . . . cottonwood and china[berry] trees in

bottoms, a few scattering cedar trees on the hills . . . open prairies [with] nutritious grasses of the grama and buffalo classes, mixed with some other varieties abound in all directions and in the bottom lands of Red River and Los Conchos, the 'sacaton' a grass growing six feet high also abounds. [Other plants include] wild flax, wild oats, Indian potatoes, wild onion, strawberries, mescal, wild currents, chinaberries, wild grapes of a variety attaining a considerable size and various species of the fruits of the cactus. . . Red River is [illegible] fringed with cottonwood trees one to two feet in diameter and small ones which are yearly destroyed by fires which the tall grasses on the bottoms furnish with extra fierceness and vigor . . . chinaberry three – eight inches {7.6-20.32 cm} in diameter, box elder ten inches in diameter, pine trees near Mule Creek, piñon and cedar abound [along with] numerous groves of scrubby oak. [The Canadian] is thirty to forty yards {27 – 36 m} wide with a brisk permanent stream of water . . . The banks are steep and generally difficult to climb, [with] rock on one side with a small bottomland on the other, [and it] fills over once or twice a year. [Animals seen include] black and white-tailed deer, pronghorn, bears, wolves, coyotes, turkeys, prairie dogs, California lions, lynx [and] buffalos in considerable quantities winter and spring."[7]

Wealthy families and individuals were not the only Hispanos who moved onto the wonderful lands of the eastern frontier. Near Oso Creek, downstream of where the Conchas River joins the Canadian, Hispano pioneers founded a number of *plazas,* including San Hilario and San Lorenzo within the land claimed by the Red River Valley Company and Wilson Waddingham for the Bell Ranch. The *plaza* residents considered the Bell lands as part of their community grazing commons, as did the transient *pastores* from elsewhere. Many of the Texas *plazas* were settled by people who seem to have lacked the financial resources of the Gallegos

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[7] Romero, "Sheepmen," 56-57; Archambeau, "Pioneer," 4; McCarty, *Maverick Town,* 39; U.S. General Land Office Field Notes, Township 13N, Range 32E Microfilm Roll, p.29, 41, D. 1987 V.0194, p.10, Bureau of Land Management, Santa Fe, NM; U.S. General Land Office Field Notes, T. 13N, R31E, G1031 "Baca No. 2 July 1861", 38, 160, G1061, 314-326 (less geologic descriptions).

and Romero families, but who hoped to make use of the Mexican law allowing a person to claim otherwise unused land after ten years of residence, even if that land had previously been granted. Very little information is available about these other pioneers, but it is quite probable that they moved east for many of the reasons that Anglo-Americans moved west: the need for more land, to get away from difficulties with neighbors, or perhaps for religious reasons like the Presbyterian Hispanos who founded Trementina on the Conchas River upstream of the Conchas/Canadian confluence, just outside the Bell Ranch. In 1875 Cruz Gallegos founded the *plaza* of Revuelto near Revuelto Creek, south and west of the Ute Creek/ Canadian confluence, and other Hispano settlements along that part of the Canadian River lowlands soon followed. By 1880, the US Federal Census for Oldham and Potter counties in Texas showed 218 "Spanish" in Oldham and three Spanish in Potter, with 56 Spanish in Hartley and 19 Spanish in Deaf Smith counties in Texas. Hartley, Oldham and Deaf Smith, all counties bordering on New Mexico, had Spanish majority populations and multiple *plazas*. Although good building timber would have been scarce, the river and its spring-fed tributaries could provide Hispano settlers with food and with materials for making shelter. Someone familiar with constructing and maintaining an irrigation system (*acequia*) would have faced hard work but had the skills needed to establish a subsistence farm, provided that no floods, droughts, bandit attacks or epidemics disrupted life.[8]

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[8] Anna Jean Taylor, "Pastores in the Texas Panhandle: 1876-1884," Unpublished Manuscript, Wayland Baptist College, 1976 in Taylor File, PPHM, 24, 26-27; David Remley, *Bell Ranch: Cattle Ranching in the Southwest 1824-1947* Revised Edition (Las Cruces, NM: Yucca Tree Press, 2000), 82, 86, 99; Victor Westphall, *The Public Domain in New Mexico 1854-1891* (Albuquerque: University of New Mexico Press, 1965), 18-19; Ernest R. Archambeau, "The First Federal Census in the Panhandle 1880," *Panhandle Plains Historical Review* Vol. 23 (1950), 24,26; Archambeau, "Pioneer", 3; Samuel Leo Gonzales, *Days of Old,* (Albuquerque: Self Published, 1993), 6,9,11; Dorothy Virginia Morton, "A History of Quay County, New Mexico," (master's thesis, University of Colorado, 1938), 32.

Life was not as easy or ideal as it might have appeared or been remembered later by Frank (Gallegos) Cabeza de Baca or Ynocencio Romero. There was no medical care available aside from traditional remedies or medicines that people brought with them from elsewhere, or if they were extremely fortunate, a visit from one of the very scarce doctors. Infectious diseases including smallpox traveled through the valley and the Hispanos around Casimero Romero's *plaza*, now the settlement of Tascosa, were not immune when the virus struck in 1877. Piedád Romero, Casimero's foster daughter, survived because of the ministrations of the recently arrived Dr. Henry Hoyt. Shepherds died of exposure in winter storms such as those of 1879-1880, and drowning in the quicksands of the Canadian was a real possibility. Feral humans also added to the danger, as Levi Herzstein, the shopkeeper at Liberty, New Mexico learned. After Thomas "Black Jack" Ketchum robbed his store, Herzstein pursued the thieves and was killed along with Hermenejildo Gallegos. Billy the Kid frequented Tascosa, and Ketchum also tried to rob Francisco Gallegos's home, only to be chased off by Señora Gallegos who shot back from the attic. Life on the eastern frontier was still hazardous and required having multiple skills and a breadth of resources in order to survive.[9]

Extensive land use served as a form of hazard reduction and insurance for valley residents against the risks of living in an area of unpredictable climate and uncertain markets. The weather of the late 1800s was still influenced by the remnants of the climatic episode called the Little Ice Age, although the climate was slowly becoming warmer and precipitation more seasonal. On the plains, that meant colder winters with more frequent winter storms, greater floods on the Canadian and weaker late summer "monsoons," as compared to those of much of

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[9] Frederick Nolan, *Tascosa: Its Life and Gaudy Times* (Lubbock: Texas Tech University Press, 2007), 18-19; Clark, *Mark of Time*, 170, 171.

the twentieth century. Shortly after Casimero Romero settled on Atascosa Creek in 1876, the Dodge City *Times* announced that ice cutting had started on the North Canadian/ Beaver River and Wolf Creek in the eastern Panhandle, with the ice four inches thick on December 16th. In January 1879 the same paper reported that the Rio Grande had frozen over at Albuquerque. Four years later, in 1882, ice cutting began around November 20, with six inches of ice on the creeks and ponds, and was interrupted briefly by a blizzard on November 24.[10]

Herds and flocks grazing away from shelter were at risk, especially when late-season storms caught the winter-weakened animals as they gave birth in early spring. In 1880 Casimero Romero and other flock owners lost thousands of sheep as well as several shepherds during the winter. Romero's entire flock died, according to his son, and he did not replace the losses. The Folsom, New Mexico newspaper reported in 1892 that one F. Gallegos lost hundreds of lambs and sheep to a late storm. As a further hazard, heavy winter snow led to large spring floods. The Canadian's annual freshet generally reached eastern New Mexico and the Texas Panhandle between late April and early June, when runoff from the Sangre de Cristo Mountains swelled the stream. Bobbing cottonwood and hackberry trees, stretches of riverbank, and even parts of bridges traveled downstream on the flow, which could last for weeks and rendered the river impassible. Once the river level dropped back to "normal," quicksand remained a problem for weeks afterwards. Summer storms and the remnants of the occasional hurricane that managed to travel north from the Gulf of Mexico also spawned rapid surges of water that caught the unwary

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[10] Dodge City (KS) *Times* December 21, 1878, January 11, 1879, *Dodge City Times* November 27, 1882; César N. Caviedes, *El Niño in History: Storming Through the Ages* (Gainesville, FL: University of Florida Press, 2001), 202, 207; Daniel R. Cayan, Kelly T. Redmond and Laurence G. Riddle, "ENSO and Hydrologic Extremes in the Western United States," *Journal of Climate*, 12, No. 9, (Sept. 1999), 2892; Glen M. MacDonald and Roslyn A. Case, "Variations in the Pacific Decadal Oscillation over the Past Millennium" *Geophysical Research Letters*, 32, L08793, (2005), 3.

in flash floods. Like the next major stream north, the Rio Colorado was *cimarron,* or in other words, wild and unpredictable; and some years it failed to flow at all.[11]

Drought was another hazard Hispano settlers faced. Slightly wet and slightly dry years seem to have alternated in the late 1870s and early 1880s, with proxy-calculated Palmer Drought Indices ranging from the damp +2.14 (1885) to a fairly dry -1.52 (1879). The summer of 1875 brought Las Vegas, in the foothills near the Canadian Gorge, 19 inches (483 mm) of rain in July, August and September, but only 0.85 inches (21.59 mm) for the rest of the year. However, for the people attempting to find forage for their livestock, or to coax more water into their irrigated cornfields, even a "mild" or "average" drought was still a problem. Ynocencio Romero's account does not mention drought specifically, perhaps because by 1886, when a series of three very dry years hit the region, his father Casimero had already turned to carting, bone gathering and real estate sales to support his family. Too, Romero *plaza*, by then better known as Tascosa, Texas, had a cushion of groundwater that fed the springs and wells from which residents drew water for drinking and irrigation. The Gallegos family also survived drought and storm, no doubt because of their extensive land holdings and their continued focus on grazing, as well as by taking advantage of the federal open-range land in the New Mexico Territory; and option that Romero did not have access to. In the long term, federal land and political resources made the difference between the Gallegos and Romero families' land tenure, as well as that of Hispanos in general in Texas and New Mexico.[12]

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[11] Romero, "Sheepmen," 62; Archambeau, "Pioneer," 4, 29; *Tascosa* (TX) *Pioneer* March 8, 1890, April 26, 1890, January 17, 1891; *Texas Livestock Journal* June 3, 1892 reprinting from the Folsom Springs (NM) *Metropol*, 7.

[12] Stahle and Cleveland, "Texas Drought History," 64; "Clippings," *Livestock Journal* [Fort Worth, TX] June 3, 1882; Romero, *Sheepmen*, 62.

Access to federal land in the New Mexico Territory helped the Gallegos family members, and others, spread their risks even farther. When the United States annexed New Mexico in 1848 following the Mexican-American War, all the land became federal property unless someone could prove his or her ownership by means satisfactory to the new U.S. government. Farther west, on the Maxwell and Tierra Amarilla Grants among others, this led to fraud and theft of immense proportions and left a legacy of hostility, litigation, violence and distrust that continued into the twenty-first century. However, aside from the Pedro Montoya Grant, which was quickly confirmed in 1868 and perfected as the Bell Ranch in 1877, there were no private lands in the eastern territory. Initial federal land survey attempts concentrated on the Canadian River because it had permanent water and seemed to be a logical place for settlement, but the work was not completed until 1879 because the Comanche Indians drove off survey teams, and the Civil War distracted any Anglo-Americans interested in taking up residence in the area. As a result of these hazards and of the reported aridity of the land, the eastern third of New Mexico remained (on paper at least) uninhabited and free for anyone wishing to homestead or purchase the land. Members of the Gallegos family were among the first to stake and prove their claims to the region and acquire legal title, after having to hire surveyors to map the land since unmapped land could not officially be filed upon and was not officially open for settlement. But the "empty" land did not remain empty for long.[13]

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[13] Maria E. Montoya, *Translating Property: The Maxwell Land Grant and the Conflict Over Land in the American West, 1840-1900* (Berkeley: University of California Press, 2002) , 2; Victor Westphall, *The Public Domain in New Mexico: 1854-1891* (Albuquerque: University of New Mexico Press, 1965), 8-9, 42.

CHAPTER 6 - Sheep in Retreat

The Gallegos and Romero families made their homes in the Canadian watershed and established the beginnings of towns and ranching businesses. However, the Gallegos family and other Hispanos were not the only people in the area. Scores of Anglo ranchers and ranching companies, with herds of cattle ranging in size from a few head to tens of thousands, moved their livestock onto the plains, joining the transhumant *pastores* as soon as the Comanches had been removed. The eastern financial dealer and land owner Wilson Waddingham purchased 6589.58 acres (2668.5 hectares) of the Canadian River Valley outright at auction in 1871and bought an additional 5428 acres (2198 hectares) the next year. By locking up the Canadian and part of the Conchas River Valleys, Waddingham controlled the water that allowed use of the surrounding land, a precaution he took in case someone should try to challenge the Pablo Montoya and Baca grants that he also owned. Because Emiterio and Francisco Gallegos and their descendents controlled access to the best water in far eastern New Mexico, they also controlled hundreds of thousands of acres of grazing land that they did not own or fence. This allowed them to compete with corporations such as the Prairie Land and Cattle Company, an Anglo-Scottish syndicate that owned parcels of land from the Purgatory River in southern Colorado to the Canadian and into the Texas Panhandle. The Gallegos descendents also competed with first the LE Ranch and later with the XIT Ranch, both of which grazed their cattle in New Mexico when prairie fires denuded their Texas pastures in 1885 and later. Wherever there was grass and water, the Gallegos family

members could move their sheep and cattle with only limited fear of being accused of trespassing. However, the benefits of open range came with ecological costs.[1]

The federal open range became a commons that was soon over stocked. The ticks that carried Texas (or splenetic) fever were not found in the territory, even those parts of the state that would have been south of the federal quarantine or "dead line," making it a valuable range. Inexpensive land and lax enforcement of the homestead laws invited large operators and fraud, both of which contributed to probable overstocking of the range, especially near water sources. One example of commons use besides that of the Gallegos family was that of M.M. Chase, whose Cimarron Cattle Company paid taxes on $240,000 worth of cattle but not on any land, making it obvious that they were grazing on someone else's grass, be it private or public. A special report to the U.S. Congress filed by inspectors of the General Land Office in 1883 described complaints against large cattle companies, homesteads claimed and not improved, improvements that could be charitably termed "minimal" and "temporary," and cases of outright fraud. Five years later different inspectors raised the same complaint and a new, updated report listed five of many abuses, including ranchers who claimed watercourses and so locked up the surrounding lands. The Gallegos family is not named, aside from reference to one Gallegos (who may not have been a close relative) who, upon investigation, was found to have proved up his claim and so was indeed the legal owner. It is probable that the Gallegos family bought out any

[1] Field Notes Township 13 N, R 32E, 1856, BLM Microfilm, BLM Santa Fe, NM; Haley *XIT,* 173; *Chronicle of Union County Written by Kith, Kin and Friends* (Dallas: Taylor Printing Co., 1980), 8, 30.

homesteaders who ventured onto the plains and then failed during the droughts of the late 1880s and early 1890s, much as other Hispanos did with homesteaders farther west.[2]

Climate and topography, along with federal land laws, encouraged the fraud in federal lands in the New Mexico Territory. The entire region received on average less than 20 inches (508 mm) of precipitation a year, even during the comparatively wetter period in the late 19th century. Dryland (un-irrigated) farming could be uncertain in the region because of the seemingly capricious nature of the summer rains, and the only irrigation water available came from surface streams. With three or four exceptions, the streams in the Canadian River watershed west of the Texas border were ephemeral, relying on local rainfall and snow melt for their flow. In addition, the rugged mesa land topography further complicated farming, as later home seekers would discover. These conditions meant that in eastern New Mexico, as in much of the United States west of the 100th meridian, a 160 or even 320-acre (64.8 ha to 129.5 ha) homestead was too small for a stock farm. A 160 acre homestead claim was also too large for one family to irrigate because of the labor required to direct water over the fields and to maintain the canals, assuming that they had access to reliable, good-quality water. Because of these complications, until the advent of centrifugal pumps and deep-water wells in Texas, and main-stream irrigation reservoirs on the Canadian, the land was most suitable for grazing. As a result, as the explorer

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[2] Victor Westphall, *The Public Domain in New Mexico: 1854-1891* (Albuquerque: University of New Mexico Press, 1965),, 23, 82; "Copies of Reports Upon the Subject of Fraudulent Acquisition of Title to Lands of New Mexico." 48th Congress 2nd Session, Senate Executive Document No. 106, Serial 2263, p. 49, 55-56; Precinct 41, San Miguel County Tax Records 1887, Roll 2, NMSRCA; "Annual Report to the Commissioner of the General Land office 1888." 50th Congress, House Executive Document No. 1, Serial Vol. 2636, p 48; Gerald Baydo, "Cattle Ranching in Territorial New Mexico," (PhD diss., University of New Mexico, 1970), 158; Cabeza de Baca, *We Fed them Cactus,* 2nd Edition with an introduction by Tey Diana Rebolledo (Albuquerque: University of New Mexico Press, 1994),153; E. Louise Peffer, *The Closing of the Public Domain: Disposal and Reservation Policies, 1900 – 1950* (New York: Arno Press, 1972), 25.

and geographer John Wesley Powell had argued, the land needed to be offered to settlers in parcels larger than 160 acres. Since ranchers in New Mexico could not lease public land (unlike in Texas) and most could not have raised the capital necessary to buy thousands of acres in fee simple had that been an option, they turned to fraud to secure the necessary land for their cattle. Meanwhile, Hispano shepherds continued grazing their flocks down the Canadian and on what they claimed as community commons near their villages as they had been doing for decades, raising the ire of the Anglo ranchers who had no legal recourse against sharing the commons. However, Hispanos faced a different legal geography when they followed the stream across the Texas state border.[3]

The division of the landscape between New Mexico and Texas formed the first break in the physical and cultural continuity of the Canadian River and its valley. The Comanches and *comancheros*, and earlier valley visitors and residents, respected the area's geographical and ecological borders but did not acknowledge the political boundaries. Despite Spanish, Mexican and Anglo-Texan claims and maps, the Canadian River watershed, its waters, flora and fauna had remained a regional whole, bound by the river at its core and by unities of climate, geology and biology. With the creation of Texas and the creation of the 1850 compromise boundary, the first division of the river began. To the west of the 103rd Meridian, in New Mexico Territory, the stream flowed through federal lands and its valley was public land available for homesteading. To the east, the land belonged to the State of Texas. Until after 1875, the Comanches and Kiowas

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[3] For more about imposed boundaries on "fluid" flora, fauna, and streams, see Mark Fiege, "The Weedy West: Mobile Nature, Boundaries, and Common Space in a Montana Landscape" *Western Historical Quarterly*, 36, No.1 (Spring 2005), especially pages 24 and 26; Westphall, *Public Land,* 42; Bascom Giles, "History and Disposition of Texas Public Domain" (Austin, TX 1942), 5; "Annual Report to the Commissioner of the General Land Office 1888," 48; Paul Wallace Gates, *The History of Public Land Law Development* (New York: Arno Press, 1979; Reprint of Washington D.C.: Government Printing Office, 1968) 501; Peffer, *Public Domain*, 2, 78.

controlled access to the much of the eastern Canadian, and Anglo-American buffalo hunters, U.S. Army troops and others paid almost as little attention to the state line as did the Native Americans. However, within seven years of the end of the Red River War, that changed, and the Canadian Valley east of the invisible border became less hospitable to Hispanos and small Anglo ranchers alike.[4]

Unlike the Gallegos family, the Romeros' open range buffer disappeared completely after 1882. When the Republic of Texas joined the United States in 1848, the new state kept all its lands: there was no federal land within the state's borders. This division and difference in land ownership did not matter to the Comanches, *comancheros* and *ciboleros*, nor to the Anglo buffalo hunters. However, it did matter to surveyors and to the state legislature. Casimero Romero arrived in the Canadian Breaks in November 1876. That same month a herd of cattle belonging to Charles Goodnight and James Adair crossed the river heading just a few miles south to the Red River's Palo Duro Canyon, where Goodnight and Adair founded the JA Ranch. Goodnight and Romero reached an agreement: no cattle appeared on the Canadian and no sheep grazed the Red. This separation did not last long, as cattle moved into the Canadian Breaks the next year when Thomas S. Bugbee established his Quarter Circle T ranch on the Canadian seventy miles (113 km) downstream of Romero plaza. Other ranchers soon followed, including Leigh Dyer, Goodnight's brother-in-law, who founded the T-Anchor Ranch just west of Goodnight's JA ranch. Like Romero, none of these men claimed all the land they grazed, letting their cattle roam over reserved "school sections," land already deeded to various railroad corporations, and unassigned state lands. The early Anglo-Texans did not fence, but instead had understood ranges, much as Romero and Goodnight had their understood watersheds. At this

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[4] Mark J. Stegmaier, *Texas, New Mexico and the Compromise of 1850: Boundary Dispute and Sectional Crisis* (Kent, OH: Kent State University Press, 1996), 206.

time, Texas did not have a 160 acre maximum homestead option like that offered by the U.S. government, and only rough surveys of the western panhandle had been done because of the Comanche presence. As a result, filing a legal claim to the land required buying it (or later leasing it), both of which entailed traveling from Romero plaza to near Ft. Worth since the area was originally part of Jack and then Clay counties and the county seats were well east, in the Anglo-settled area of the state. When Oldham County formed in 1880, with Tascosa (Romero Plaza) as the county seat, the open range days were already coming to an end.[5]

Shepherds faced a dual difficulty as they traversed the Canadian after 1880: corporations and Texans. In 1879, business partners William McDole Lee and A. E. Reynolds established the LE Ranch along the Texas border with New Mexico with its initial headquarters in a stone house on Alamocitas Creek. The house had been built by a pair of shepherds from New Zealand, who sold out to Lee and left the valley. Lee later relocated the headquarters to where Dolores Duran, Casimero Romero's sister, had established a house with extensive vegetable gardens and an orchard, about thirty miles (forty-eight kilometers) upstream from Romero plaza. When Reynolds bought Lee's share of the partnership, Lee and Lucien B. Scott formed the LS ranch just east of Romero plaza. W.M.D. Lee, a successful businessman who made his fortune supplying the U.S. Army as a post suttler (general supply contractor) and by buying and selling bison hides, encouraged the Hispanos living on the LE and then on the LS ranch to depart. It is claimed that he knew three words in Spanish: "dinero" and "vamoos pronto." He got in his buggy and drove along the Canadian, offering the inhabitants of the eight or nine plazas on the LE up to $100 in cash, and then ordering them to leave. Most of the people took the money, in

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[5] J. Evetts Haley, *Charles Goodnight: Cowman and Plainsman* New Edition, (Norman: University of Oklahoma Press, 1949), 278, 280; Frederick W. Rathjen, *The Texas Panhandle Frontier* Revised Edition (Lubbock: Texas Tech University Press, 1998), 184, 185, 189;

part because they did not have the resources to prove clear title to their land or even to purchase the land. Other corporations, including the Capitol Lands Syndicate (see Appendix B), encouraged Hispanos to leave and prosecuted shepherds who brought their flocks across the New Mexico border.[6]

Even someone as prominent as Casimero Romero faced difficulties with the Texans because of cultural and racial prejudice on both sides. Roughly one-third of the Anglos who began moving into the Panhandle originally came from the U.S. South and many brought their prejudices with them. Even those coming from northern states had read and heard about the purported backwardness, race mixing and corrupt Catholicism of New Mexicans and Hispanos. According to Spanish colonial historian David J. Weber, these images predated the Mexican-American War, a conflict that served to intensify some of the stereotypes. People coming from southeastern Texas had their own negative images and stories about Mexicans and tended to lump Hispanos in with Mexicans, something people such as the residents of Gallegos and of Romero plaza, and Graciano Cabeza de Baca, Fabiola's father, found insulting. Non-Americans were not completely free from this disdain and even hatred of Hispanos. Arthur Tisdell, the English manager and foreman of the Bell Ranch, reported problems with the cattle and sheep belonging to the Hispanos who had settled within the Bells' borders, and Dave McCormick, one of Goodnight's managers and a Scotsman, drowned a flock of sheep that his employer later paid for. However, the British tended to focus on economics and class as much or more than race and treated Anglo cowboys with equal contempt at times. Hispanos for their part considered Texans

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[6] Pauline Durett Robertson and R. L. Robertson, *Cowman's Country: Fifty Frontier Ranches in the Texas Panhandle* (Amarillo: Paramount Publishing Company, 1981), 106, 112; Donald F. Schofield, *Indians, Cattle, Ships, and Oil: The Story of W.M.D. Lee* (Austin: University of Texas Press, 1985), 52, 56; Dulcie Sullivan, *The LS Story: The Story of a Texas Panhandle Ranch* (Austin: University of Texas Press, 1968), 39, 40.

and other Anglos rude, untrustworthy, greedy and rough. The combination of a purportedly inferior culture with violations of supposedly private property made conflict, if not inevitable, at least highly probable.[7]

Another difficulty for Hispano shepherds arose when county governments used herding laws to block flocks' access to the Canadian and other grazing avenues. The official reason for the sheep herding regulations was twofold. First, to preserve the range and to prevent the spread of sheep scabes, which was indeed highly contagious and which was thought to be transmissible to cattle and possibly humans (it was not). The second reason was to generate revenue for the counties. If a flock grazed onto property that did not belong to the flock owner and (depending on the specific statute) either remained more than twenty-four hours or did not leave when first ordered to, the flock was impounded and the owner and shepherd both held liable for damages and fines. A second law in Texas enacted in 1883 required a sixty-day certificate of health inspection for each flock entering the state. In reality, since ninety percent of the traveling flocks that entered Texas were under the care of Hispano or Mexican shepherds, this discriminated heavily against poorer Hispanics. It would have been an unusual shepherd who carried cash and sheep-dip documentation with him, and the prospect of dealing with a court, in a foreign language, with a probably hostile jury and or judge or Justice of the Peace was enough to

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[7] Montoya, *Property,* 14, 63; David J. Weber, "'Scarce More than Apes': Historical Roots of Anglo-American Stereotypes of Mexicans" in *New Spain's Far Northern Frontier: Essays on Spain in the American West, 1540-1821* ed. David J. Weber (Dallas: Southern Methodist University press, 1988), 299; Arthur J. Tisdall to J. Greenough, March 23, 1895, Red River Valley Corporation Collection, MSS 86, BC Box 29, Center for Southwest Research, University of New Mexico, Albuquerque, NM (CSWR); Haley, *Goodnight*, 279; Richard L. Nostrand, *The Hispano Homeland* (Norman: University of Oklahoma Press, 1992), 107; Cabeza de Baca, *Cactus*, 148-49; José Ynocencio Romero, "Spanish Sheepmen on the Canadian at Old Tascosa," as told to Ernest R. Archambeau *Panhandle Plains Historical Reivew* 19 (1946), 72; Alvin R. Sunseri, *Seeds of Discord: New Mexico in the Aftermath of the American Conquest, 1846-1861* (Chicago: Nelson-Hall, 1979), 99, 103, 112.

dissuade the *pastores* from returning to Texas. The large flock owners, such as Soloman Luna, a member of the Territorial Sheep Sanitary Board, could draw from their other resources such as saved money, as well as their mercantile, banking and real-estate businesses to pay for needed inspections, dips and (one suspects) bribes, but the small flock owner was forced to confine his migrations to New Mexico or risk losing both his flock and his freedom.[8]

After the loss of his sheep in 1880, Casimero Romero turned to other economic pursuits; ones that did not depend so heavily on open range. He began a freight business, taking wagonloads of fleeces and later of bison bones to Dodge City, KS, and bringing back supplies for the merchants at Tascosa. Romero also bought part of a hotel and restaurant in Dodge City, and sold some real estate in and around Tascosa. Eventually, hemmed in by the LE, XIT, LIT and LS ranches and (one suspects) unhappy with the attitudes and behavior of his new neighbors, Casimero Romero returned to New Mexico in 1893 and homesteaded south of the ND Ranch headquarters town of Endee, raising sheep and a few cattle.[9]

By 1885 the last documented New Mexican sheep had grazed their way out of the Texas panhandle and back onto New Mexico's open range. Although several different ranchers had purchased and claimed the lands within the Canadian River valley, the owners seem not to have objected too much to the presence of the *pastores* and their flocks. Both Anglos and Hispanos may have been more concerned about the political turmoil spilling eastward from Las Vegas and

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[8] Taylor, "Pastores", 52, 53; Paul H. Carlson, *Texas Woolybacks: The Range Sheep and Goat Industry* (College Station: Texas A&M University press, 1982), 98; "Rules and Regulations of the Sheep Sanitary Board of New Mexico Adopted July 29, 1897," "New Mexico History Collection" Box 1, Folder 11, NMSARC.

[9] Ernest Archambeau, "Pioneer Panhandle Settler Recalls Origin, Early Days of 'Old Tascosa'," *Amarillo Times* Thursday, February 28, 1946, 29, 31; Dodge City *Times* December 7, 1882; Quay County Tax Records, Precinct Three, Roll 1, 1903, NMSARC.

the increasing banditry in the region, and a number of New Mexican ranchers also ran sheep. The economic downturn in ranching following the winter of 1886-87 had been preceded by an equally hard winter on the southern plains the year before, so the southern ranges were already emptied of many cattle and sheep. Charles Goodnight estimated that thirty percent of the cattle in the Panhandle had died, and the like percentage applied to ranchers farther west along the Canadian. This did take some of the pressure off the grasslands, but the subsequent (unrelated) economic downturn caused ranchers to hold cattle on the grass longer, thus negating the effects of lower numbers. Nationwide, although the demand for wool and mutton was increasing, the continuing economic depression kept the prices for fleeces and mutton down. Flock owners also faced pressure to upgrade their flocks with fine-wooled merino sheep, rather than continuing to sell the industrial-grade wool of the *churros*. [10]

Could the Hispano shepherds and settlers have successfully continued their lifeways in the Canadian Valley? The Gallegos family's story suggests that with access to sufficient land and the ability to use Anglo laws to their own advantage, people who blended Hispano and Anglo traditions could have succeeded. Don Francisco died in 1889 and left a sizeable estate. His widow, heirs, and extended family continued to expand the Gallegos holdings and eventually diversifying into mercantile as well as livestock businesses, even as more and more Anglo-Texan ranchers moved into the eastern plains.

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[10] I. R Dodge, "Sheep and Wool: A Review of the Progress of American Sheep Husbandry" USDA Report No. 66 (Washington, D.C.: Government Printing Office, 1900), 21; William T. Hagan, *Charles Goodnight: Father of the Texas Panhandle*. (Norman: University of Oklahoma Press, 2007), 93; Tobías Durán, *We Come as Friends: Violent Social Conflict in New Mexico, 1810-1910* (PhD diss., University of New Mexico, 1985), 83, 145; Charles, "Partido System," 33,34; William J. Parrish, ed. "Sheep Husbandry in New Mexico, 1902-1903" *New Mexico Historical Review* 37, No. 4 (October 1962), 281; Cabeza de Baca, *Cactus*, 89-90.

While the Gallegos family prospered, it is possible that other settlers might not have. The number of sheep in the territory increased over the end of the 19th century. As mentioned before, livestock expert Joseph McCoy found a flock of tens of thousands wintering near Red River Spring in the Canadian Valley. It is probable that the influx of ever-larger numbers of sheep would have caused lasting damage to the riparian vegetation and swaths of grass within the Canadian breaks and the western valley. Another question is how well the small farmers and plaza residents could have dealt with longer droughts such as the one in the late 1880s, or the period from 1904-1906. The New Mexican stretch of the Canadian Valley is more open, with fewer springs and permanent creeks than the Texas portion, and fewer plazas appear to have been settled. Part of this is due to the presence of the Bell Ranch, which locked away much of the Canadian River Valley from potential settlers, but part may have been the greater distance to sheltered streams from the main river, and the canyon-like nature of the inner valley in the area where Ute and Pajarito Creeks join the stream. Farming required irrigation and aside from the lands within the Bell Ranch and the Gallegos properties, there were few places where the topography and hydrology cooperated with would-be *plaza* founders. As will be seen later in this work, even "safety-first" farming in the best locations along the Canadian's few permanent New Mexican tributaries could not always cope with extended drought, especially when combined with regional economic crises. Eastern New Mexico was a less "farming-friendly" environment than were the Canadian Breaks farther east.[11]

By the mid 1880s, the era of sheep had, for the most part, passed. The *partidarios* shifted to the Pecos River and up into the mountains, although some still followed their shaggy charges down the Rio Colorado. The lack of open range and free land in Texas, combined with the

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[11] Author observations, May 2009.

arrival of corporate ranching and neighbors hostile to “inferior” Hispanos, drove many Hispano pioneers back into New Mexico. The brief era of ovine dominance in the Breaks passed as *pastores* ceased their yearly rounds, yielding the plains and Breaks to bovines once more. The days of the cattle had come.

CHAPTER 7 - River of Cattle

As long as cows are cows and water is wet, some things will never change, no matter what century it is or the ethnic background of any humans involved. Picture two men on horseback on top of a rise on the plains, their mounts standing with their heads down, as tired as their riders at the end of a long spring day. The cowboys search, looking for motion and hoping that they do not see any. But they notice something moving in a small valley – it is a white-faced, red-bodied shorthorn cow that has waded out into the soft mud along a wet-weather creek and gotten bogged. Cursing the stupidity of cattle, the men ride down and rope the cow. The younger man, call him "Lee," gets off his horse and approaches the cow as his partner "Allen," takes up the slack in the rope. They don't like riding bog, but the wagon boss said it had to be done and they don't want to get fired or reassigned to maintaining windmills. The men work quickly, freeing the weakened cow from the mire before she exhausts herself or dies of exposure during the night. She is very pregnant and tired, but will probably live to get stuck in another wet spot. The spring rains brought water, but also brought mud, and the cowboys hate one as much as they appreciate the other. Allen coils his rope, Lee wipes some of the mud and other things off of his boots and mounts. They have several miles to ride before reaching camp, supper and their bed-rolls. Behind them, the Hereford cow wanders away from the muddy creek bank, looking for the rest of her herd and for fresh grass.[1]

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[1] Although fictional, this scene was and is not a rare spring scene. XIT Ranch Division Manager Report, Buffalo Springs Division, April 1894, XIT Ranch collection, Panhandle Plains Historical Museum Archives, Canyon, Texas (PPHM).

The arrival of Anglo-Texans and their large herds of domestic cattle coincided with changes in the region's dominant precipitation patterns, the combination of which accelerated on-going physical changes to the Canadian River and also fueled conflicts with other ranchers, Hispano settlers and state and federal agencies. Corporate agriculture in the form of international ranching syndicates quickly displaced small independent ranchers and Hispano sheepherders from the river valley and tied the Canadian watershed more closely to the international finance and commodities markets. Meanwhile, international financial market vicissitudes and economic panics, a multi-year drought in the 1880s followed by an even longer drought in the 1890s, and grass-fires that swept across state and territorial borders caused problems for ranchers and settlers alike. If those difficulties were not enough to frustrate those trying to make their fortune in the cattle business, the increasing concentrations of domestic cattle also played a role in this period of the Canadian River's story. All these events and conditions together explain why men such as Ira Aten, Charles Goodnight, the Farwell brothers, Arthur Tisdell, the Howry brothers and other ranchers and ranch managers must have wondered why the elements conspired against them. Anglo-Texan ranchers brought domestic cattle, corporate agriculture, and new technologies to the Canadian Valley, but sometimes even the latest innovations proved no match for the physical environment. Mac Huffman, foreman of the XIT Ranch's Spring Lake Division in the western Texas Panhandle, turned the calendar page on December 31, 1894 and probably wondered if the next year would be any better. The year had started out dry and he commented in his March report that the division south of the Canadian River was "needing rain badly to start young grass. [The grass is] out nicely but can't grow until it gets rain." He was fortunate and the Division received good spring and early summer rains, although in June he worried that the grass was "good [but] getting a little dry now from the hot winds." July brought over six and a half

inches of rain (145.6 mm) and things looked splendid by the end of August, causing Huffman to report that the grass on his division was "good; best there has been on the plains for some time," and that his water supply was also "good. Windmills in good repair and lots of surface water;" the playas were full. September closed with "grass the best I have seen on the plains."[2]

But Mac Huffman spoke too soon. On the night of November 25 a prairie fire of uncertain origin swept across the Texas-New Mexico border, chasing antelope, jackrabbits and cattle ahead of a flame front that at one time reportedly stretched 20 miles (32 km) north to south! Huffman rallied his cowboys and tried to save his pasture grass, attacking the flames with chain drags, a metal frame with lengths of iron chain and hooks attached that tore up the short-grass sod in order to make a firebreak, and beating the flames out with wet brooms and gunnysacks, but the wind was too strong and for a time the cowboys retreated. The flames burned across the XIT lands and the men thought things had stabilized, until a wind shift began driving the flames south. After three nights the fire was out but an area 60 miles (96 km) north to south and 20 miles (32 km) east to west had been burned over, from the Canadian River on the north to the sand hills south of the river in Deaf Smith County. Huffman and the other XIT cowboys gathered the scattered cattle, tallied up the dead animals, and drove 4,500 head of cattle into the Canadian Breaks in the Alamositas and Escarbada Divisions to join the other animals already wintering there. There would be precious little grass left in the breaks come spring, but the cattle had to be fed and watered, no matter what the large numbers of livestock did to the river and the valley. At least Huffman did not have to pay to replace the burned-out fences: that duty belonged to the ranch's owners, who were already fretting about the declining price of cattle

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[2] XIT Monthly Division Reports 1894, XIT Ranch Collection, PPHM; David W. Stahle and Malcom K. Cleveland, "Texas Drought History Reconstructed and Analyzed from 1698 to 1980." *Journal of Climate* 1, No. 1, (January 1988), 64.

following the financial Panic of 1893. Until the fences were back in place, the southern XIT pastures were open range once more.[3]

What did the Canadian River Valley look like in 1880, in the early days of the open-range cattle era? Several English-language descriptions of the Canadian River before and during the ranching era exist and at times they seem to describe different streams. The earliest accounts were written by military expeditions, including Stephen Long's 1819 venture and Lieutenant James W. Abert in1845. They described a generally sand-bordered river valley containing an intermittent stream with both shallow and deep reaches. Exceptions to this picture were the few places such as the Angosturas ("The Narrows") and the reach around Canadian/Ute confluence where the river cut through harder rocks in narrow canyons within the lowlands. Edwin James, Long's scientific observer, recalled that in 1820 the expedition found "a few scattered and scrubby trees" downstream of the Conchas – Canadian confluence, including oaks, willows, cottonwood and mesquite, and that the river had disappeared into its bed. Only on August 4th, after perhaps one hundred more miles of travel down the river did the stream re-emerge in a 60 yard-wide (54.6 m) riverbed. The Canadian itself was twenty yards across with a moderate current and flowed 10 inches (254.4 mm) deep. The entrained clay and silt made the water very red and slightly salty to the taste. Both accounts explain that parts of the river, especially above the Conchas and around the Ute Creek confluence, flowed through a canyon, while other parts of the stream wound across sand flats bordered by tall grasses and reeds, grape, wild plum and willow thickets and dotted with the occasional cottonwood or hackberry motte. Cedar trees sprouted on the rough, grassy slopes of the Breaks and the edges of the valley. The river rose and

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[3] XIT Monthly Division Reports 1894, XIT Ranch Collection, PPHM; Amarillo, TX Threadex Station Daily Weather Listing, November 25-29, 1894; J. Evetts Haley, *The XIT Ranch of Texas and the Early Days of the Llano Estacado* New Edition, (Norman: University of Oklahoma Press, 1953), 175-177.

fell unpredictably, carrying large amounts of red sediment and salt and leaving behind dangerous quicksands. Beaver and bison, elk and pronghorn, deer, wild turkey, black bear, bobcats and mountain lions roamed the valley, according to these early Anglo observers. The Canadian, in these writings, seemed very much like other Plains streams: the Platte, the Cimarron. However, Casimero Romero's son reported a rather different stream in 1876.[4]

The Canadian River that Ynocencio Romero remembered was narrow, deep, and clear with high banks and a sandy floodplain. The river was twenty feet (eighteen meters) wide, at least three feet deep and had "cold, clear water between high, steep banks which were lined with a thick growth of bushes." His account continues: "when we crossed the river with the wagons to the new home site, the men had to dig the banks down so that a place to ford the river could be made, and when the wagon and the wheelers [wheel horses] were in the stream bed, the two lead teams were out on top [of the banks] where the footing was good." Furthermore, "the river was well stocked with fish and the restaurants at Tascosa regularly served fish they caught with a seine in the river." The records of the Canadian River in eastern New Mexico for this same time are scanty at best. Surveyors with the General Land Office, at last returning to the area, wrote that in the far eastern part of the valley there was "a large amount of good bottomland. Cottonwood and cedar in considerable quantity" grew near the stream, while the plains had "second rate soil and good grass." The river averaged between one and a half to two chains (99 to 132 ft, or 90-121 m) wide and the surveyors described the area as "fine stock country" and

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[4] Edwin James, *Account of an Expedition from Pittsburgh to the Rocky Mountains* Vol. 2, (Ann Arbor Michigan: University Microfilm, Inc., 1966; reprint of 1823), 91,92,96; William Abert, *Expedition to the Southwest: An 1845 Reconnaissance of Colorado, New Mexico, Texas and Oklahoma* Introduction and Notes by H. Bailey Carroll, Introduction to the Bison Books Edition by John Miller Morris (Lincoln: University of Nebraska Press, 1999), 50, 56,57.

"good pasture land" but in general "only good for grazing." By the 1880s, Romero and another Texas observer describe yet a different stream.[5]

C.F. Rudolph, the eternally-optimistic editor of the *Tascosa Pioneer,* featured the river heavily in his paper between 1886 and 1894, no doubt because residents of the town lived and died, fished and berried by the flow of the river and its tributaries. Rudolph chronicled spring rises that made the stream impassible as waves of red water surged downstream, carrying logs, islands and dead people with them. He joked in the June 26, 1886 issue that "The Canadian rose in a mild boom once or twice this week. It is thought it caught a slight touch of the [boomer] fever from the town." He also listed expeditions to pick the wild grapes and plums that still flourished near the town and described the "big fish and a few turtles" caught by intrepid sportsmen from the community, some of which reached the hotel's dining room tables as the daily special. In the March 29, 1890 issue Rudolph promised that "as soon as the river rises the fish will come up and multiply in the land – no, the water – and won't we have fun then." However, on that same page he mentioned that on the 26th of March a nighttime dust and sand storm "so filled up the river with sand until it went temporarily dry." Rudolph and others agitated for a bridge, and the district judge and state attorney added their voices to the debate after having been forced to strip and swim the swollen Canadian at least once because they did not trust their buggy on the sandy bottom following a bad experience getting to Tascosa one day earlier. Instead of steep banks and cold water, the river now spread thinly over broad, sandy stretches

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[5] José Ynocencio Romero to Ernest Archambeau, "Spanish Sheepmen on the Canadian at Old Tascosa" *Panhandle Plains Historical Review* 19 (1946), 57; "Field Notes" Township 13 North, Range 35 East, R68 U.S. Department of the Interior/ Bureau of Land Management 2, page 506; Vol. P311 U.S. Department of the Interior/ Bureau of Land Management 2, pages 6, 87; Field Notes for Township 13 N Range 34 E, R36, page 85; Field Notes for Township 13 N Range 33 East, page 188, Bureau of Land Management, Santa Fe, New Mexico.

when it was not rising or falling from storms or snowmelt. The descriptions sound very much like those from 1820 and 1845, not Romero's 1876 stream.[6]

Farther west of Tascosa, at the Conchas-Canadian confluence, Bell Ranch cowboys risked life and limb crossing the stream at high water and also complained about the quicksands while the management fumed at the river's destructive power. In April 1891 Wilson Waddingham, then owner of the Bell Ranch, had irrigation works built near San Hilario (three miles, [two and three-quarters km] downstream of the La Cinta Creek-Canadian confluence). They washed out in a flood in late May and early June that "carried away a large portion of the dam," and flooded the fields. Cowhand Marion Speer, possibly referring to the same event, said that lumber from the Bell Ranch's irrigation works "was scattered for many miles down the river," and added as an aside that the fishing was quite good with a seine net. Only a few years earlier, in the late 1880s, Ynocencio Romero watched the river change from what he had first known and placed the blame squarely with the herds of cattle, stating that they ate out the vegetation and broke the riverbanks, allowing the stream to change. Could domestic bovines have been the cause of the changes he observed? To find out, it is necessary first to examine the history of ranching in the Canadian River watershed, then to consider the non-human process going on at the same time.[7]

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[6] Tascosa (TX) *Pioneer*, November 3, 1887, June 26, 1886, March 29, 1890, early June, 1889; Romero, "Sheepmen," 57-58.

[7] Martha Downer Ellis, *Bell Ranch Recollections and Memories* (Amarillo: Trafton and Autry Printers, Inc., 1985), 105, 106; David Remley, *Bell Ranch: Cattle Ranching in the Southwest, 1824 -1947* Revised Edition (Las Cruces, NM: Yucca Tree Press, 2000), 122.

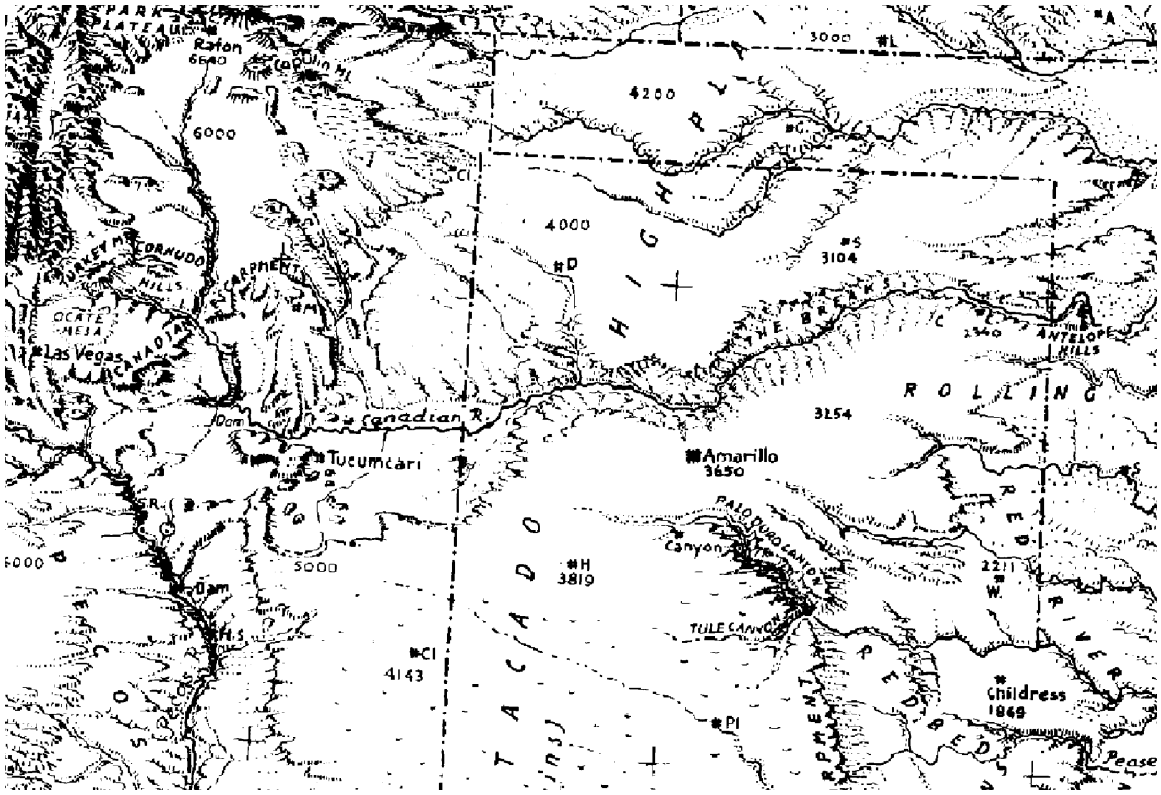

Figure 7 - Big Ranch Country from "Landforms of North America" (C) Louis Reisz 1957.

Between 1876 and 1882, while Hispano settlers moved into eastern New Mexico and the Texas Panhandle from the west, Anglo-Texans and others drove their cattle in from the south, east and north to take advantage of the open range. These actions led to conflicts over land and water, and to the possible overgrazing of portions of the Canadian River Valley. Charles Goodnight drove the first resident herd of cattle into the western Panhandle in November 1876. He had been ranching in eastern Colorado, but because too many cattle were crowding the ranges there, he moved into the Red River's Palo Duro Canyon, south of the Canadian Valley. Not long after, Thomas S. Bugbee and his wife Mary founded the Quarter Circle T Ranch on Bugbee Canyon on the north side of the Canadian in what became Hutchinson County, roughly 70 miles (112 kilometers) downstream from Romero Plaza/ Tascosa. A little over a year later, George Littlefield arrived and established the LIT brand along the Canadian River; first west of Tascosa and then three miles east of the town. Charles Goodnight's brother-in-law, Leigh Dyer, made his

home at the west end of Palo Duro canyon and founded the T-Anchor Ranch, which was quickly bought out by the early Panhandle surveyors Jot Gunter, William Munson and John Summerfield. Two Boston businessmen, David T. Beals and W.H. Bates, joined the ranching boom and their LX brand appeared on cattle grazing the Canadian east of Littlefield's range. The last of the pioneer ranchers, William McDole Lee, more commonly known as W.M.D. or "Alphabet" Lee, was a Leavenworth, Kansas man who had made his fortune as an Army sutler and bison-hide buyer before founding the first of his several ranches, the LE, along the Texas - New Mexico border north and south of the Canadian. Across the border in New Mexico, the land between the Bell Ranch's eastern fences and the Texas border was claimed by the Prairie Land and Cattle Company, the Howrey Brothers, members of the Gallegos family, and a number of smaller ranchers and cattle owners. If the description of all these properties seems confusing, that is because their exact locations were confusing and vague.[8]

The vagueness of the early ranchers' claims stemmed from the nature of the business and of the land that their animals grazed. The Texas range belonged to the state, and lands not assigned to the railroads or withheld as school land (one section per township, or one out of every thirty six sections) were available for purchase, homestead or later as a grazing lease. Men with enough capital, including WMD Lee and Goodnight's Anglo-Irish partner James Adair, purchased their land outright from the state or from the few Hispanos who had title to their land (Tobias Duran's home became the LE Ranch headquarters, for example). In contrast, George

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[8] Pauline Durrett Robinson and R. L. Robinson, *Cowman's Country: Fifty Frontier Ranches in the Texas Panhandle 1876-1887* (Amarillo, TX: Paramount Publishing Company, 1981), 37, 106, 115, 128,152; J. Evetts Haley, *Charles Goodnight: Cowman and Plainsman* (Norman: University of Oklahoma Press, 1949), 276, 280,298, 305; Donald F. Schofield, *Indians, Cattle, Ships and Oil: The Story of W.M.D. Lee* (Austin: University of Texas Press, 1985), 59; Dulcie Sullivan, *The LS Brand: The Story of a Texas Panhandle Ranch* (Austin: University of Texas Press, 1968), 39. For a list of company names, ranch names and brands, see Appendix B.

Littlefield and T.S. Bugbee grazed their herds on public land without purchasing much beyond the headquarters section, if that much. Whether owned or simply used, or a combination of both, the Texas rangelands and their New Mexican counterparts were not fenced. Instead, each rancher had his headquarters buildings and home and an "understood range" where his cattle were generally to be found until the herds moved elsewhere in search of forage or while drifting with weather. Then ranch employees drifted the animals back onto their "understood" range. New Mexican ranchers followed a similar practice, except that federal land could not be leased and homesteaders had preferential purchase and settlement rights, both things that contributed to the widespread land fraud described in the previous chapter. Texan cattle and New Mexican herds mingled along the Canadian, ignoring state borders much as the bison had. However, the intrusion of cattle from Kansas led to the end of the open range era in the Panhandle.[9]

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[9] Robinson and Robinson, *Pioneer Ranches,* 108; Haley, *Goodnight,* 302-303; Anita Holt Eisenhauer and Ruth Ann Jones, "Drift Fence of the Texas Panhandle North of the Canadian River, 1882-1886: A Texas Historical Marker Application for Hutchinson County" PAM 1994.145.1, PPHM, 16, 22; Sullivan, 30, 40, 41; Remley, *Bell Ranch*, 105.

CHAPTER 8 - Closing the Open Ranges

Anglo-Texan ideas about private property and corporate economics sparked the closing of the open ranges in Texas and to a lesser extent in New Mexico. The winters of 1879-1880 and 1882-1883 led to the first attempt to enclose the open range in the Texas part of the Canadian Valley. The winter storms of 1879-1880 had brought death to the Panhandle, as Casimero Romero learned with the loss of his sheep and *pastores*. Two years later, winter storms again killed thousands of cattle and drove thousands more out of the unfenced ranges in Kansas, Colorado and Nebraska south into Texas. Unlike bison and longhorn cattle, shorthorn cattle breeds such as Angus and Herefords drifted with the wind, walking south until they encountered an obstacle. Texas and New Mexican ranchers found their livestock competing with animals from hundreds of miles away for the remaining grass in the Canadian watershed. As a result, Texas ranchers on the north side of the river joined together to build a drift fence that extended from the New Mexico border to the central Panhandle. Each rancher built the portion on the land that he or his company claimed, with the goal of blocking the drifting northern cattle. Wood for the fence posts, "set thirty feet [ten meters] apart" came from Palo Duro Canyon and the Canadian Breaks at first, but as supplies were depleted ranchers began buying "cedar" from New Mexico. The drift fence signaled the beginning of the end of the open range in the Texas reaches of the Canadian watershed and the implementation of a new view of the area's primary raw materials – grass and water – based almost solely on the number of cattle they could support.[1]

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[1] José Ynocencio Romero "Spanish Sheepmen on the Canadian at Old Tascosa," as told to Ernest R. Archambeau *Panhandle Plains Historical Review* 19 (1946), 61; J. Evetts Haley *Charles Goodnight: Cowman and Plainsman* (Norman: University of Oklahoma Press, 1949), 320, 321; Anita Holt Eisenhauer and Ruth Ann Jones, "Drift Fence of the Texas Panhandle North of the Canadian River, 1882-1886: A Texas Historical Marker Application for Hutchinson County" PAM 1994.145.1, PPHM, 16, 18; Paul H. Carlson, *Empire Builder in the Texas*

Just how many cattle could have stayed in the Canadian Valley all year round without eating and trampling themselves out of food and shelter? To determine that requires determining how much grass was available in an "average" year. The Federal Soil Conservation Service soil maps for Oldham and Potter counties in Texas show that 49 % of the soil in Oldham's stretch and 75% of Potter county's stretch of the valley could have supported short or mixed grasses and was at least "medium [quality] for range." This translates to 470,713 Oldham acres and 440,640 Potter acres (190,639 and 178,459 hectares respectively). It is probable that no more than three-quarters of this land was grazable because of slopes, leaving a total of 683,523 acres (276,143 ha) in both counties. Using the "light to moderate" stocking rate of 18.8 acres per animal unit (a 1000 lb. cow and her calf) for mixed grasses, the valley in these two counties could support 36,357 cattle in an "average" year on mixed grasses, or 30,720 head on shortgrass (22.25 acres per head). Range scientists and agricultural extension specialists recommend stocking only half the "average" number in drought years, so in bad years the Canadian valley could have supported 15,360 shortgrass-fed animals in Oldham and Potter counties. This does not allow for the horses owned by the ranches, nor for the deer, prairie dogs, pronghorn and other native animals still living in and around the Canadian Breaks.[2]

Panhandle: William Henry Bush (College Station: Texas A&M University Press, 1996), 14-15, 24.

[2] Fred B. Pringle, *Soil Survey of Oldham County, Texas* (Washington, D.C.: USDA Soil Conservation Service with Texas Agricultural Experiment Station, 1980), 5, 35, 39; Fred B. Pringle, *Soil Surveys of Potter County, Texas* (Washington D.C.: USDA Soil Conservation Service/ Government Printing Office, 1980), 1,4,5,6; Ted McCollum III "Mixed Grass" in *Managing Livestock Stocking Rates on Rangeland* ed. Jerry R. Cox and J.F. Cadenhed, (College Station: Department of Rangeland Ecology and Management, Texas A&M University, 1993) 30; Mindy Prett and G. Allen Rasmussen "Determining Your Stocking Rate" Utah State University Cooperative Extension Range Management Fact Sheet, May 2001; W.K. Laurenroth and O.E. Sala, "Long-Term Forage Production of North American Shortgrass Steppe, " *Ecological Applications* 1992, No. 4, p 398; Robert K. Lyons and Richard V. Machen, "Livestock Grazing

	Potter County	Potter Co. Dry Year	Oldham Co.	Oldham Co. Dry Year
Grazable Acres within the Valley	330,480.00 a / 133,844.25 ha		353,034.75 a/ 142,979.10 ha	
Number of Cattle: Mixed Grass	17, 579	8790	18,778	9389
Number of Cattle: Short Grass	14,853	7427	15,690	7845

Table 1: Stocking Rates - Mixed and Short Grass

Ranch managers operating with the knowledge and attitudes of the time used slightly different stocking rates and practices. For example, the experienced rancher M.M. Chase of the Cimarron Cattle Company, one of the largest in San Miguel and later Quay Counties in eastern New Mexico, planned on ten acres per animal unit in "ordinary" years on short grass in 1881. In 1885, Bell Ranch manager Mike Slattery claimed to have 52,000 cattle plus 17,000 calves grazing on the Bell's 791,000 acres for a stocking rate of 11.4 acres (4.6 ha) per animal, a number that failed to account for how much of the Bell consisted of dry uplands and slopes too steep for domestic cattle to graze. In 1903 Charles O'Donel believed that the most the Bell could carry was 24,621 head of cattle, plus the ranch horses and some pronghorn and a few sheep. Ideally, any ranch would be divided and managed to make best use of a variety of terrains and grazing options at different times of the year, assuming that the property included more than just

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Distribution: Considerations and Management," Texas Cooperative Extension Bulletin L-5409, 12/01 (College Station: Texas A&M), 3.

dry uplands or river bottom lands within its perimeter. These ideas show the arrival of a new way of valuing the land, one based on quantifying the cash worth of the land and its water and grass.[3]

The Canadian watershed grazing commons became commoditized and privatized with the Anglo-Texans' arrival after 1877. Grass had long been a key to survival on the High Plains, because only grasses and other plants could transmute solar energy into carbohydrates and proteins for animals to use. The people of the Antelope Creek Phase and the Apaches grew domesticated grasses (maize) to supplement the converted grasses (bison, elk, antelope) that they ate. The Comanche traded and raided for domesticated grasses in the forms of Texas cattle and New Mexican maize while guarding the short grass plains and watercourses for the use of the bison and of their horse herds. All these people valued water, grasses and the grazers that fed on the grasses, but they did not put a cash value on them in the same way that Hispano *ricos* and Anglos did. These later arrivals assigned the grasslands a market value based on the land's ability to support domestic livestock and domesticated grasses (wheat, sorghum, maize), turning the herbage into a commodity that could be sold and traded. Each acre was worth X amount if it had only grass, and Y if it had water as well, but land without either was worthless. The grass no longer had intrinsic worth, but that assigned to it by the landowners and by the market. With one exception, grass and the land were property to be bought and sold just like the cattle they supported. The need for the combination of grass, water, and shelter at different places during

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[3] C.M. Chase, *The Editor's Run in New Mexico and Colorado* (Ft. Worth: Frontier Book Co., 1968, orig. 1882), 49; David Remley, *Bell Ranch: Cattle Ranching in the Southwest, 1824 – 1847* Revised Edition (Las Cruces, NM: Yucca Tree Press, 2000), 100; Charles M. O'Donel to E. G. Stoddard, MSS 86, BC Box 29, Red River Valley Co Records 1865-1947, RRVC Collection, Center for Southwest Research, University of New Mexico, Albuquerque, NM. The reduced stocking for drought is included in the low mixed-grass stocking rate. See Appendix C for calculation method.

different times of the year also made some ranges more valuable than others, because they had different types of grass, as well as having water.[4]

Domestic cattle could not subsist on bunch grass alone, nor could they survive for as long without water as could bison or pronghorn or even sheep, as the stocking rates and later grazing analyses will show. As a result, a rancher sought to have several types of range and water sources under his control, even if corporate accountants and some federal officials did not always understand the need to do so. Panhandle and eastern New Mexico ranchers used different lands for different things in ways that were somewhat similar the Hispanos' practices. The warm-season grasses of the uplands served as late spring and summer pasture, while the tall grasses of the breaks and the stream valleys fed the herds during the winter. Those ranchers who could, including Charles Goodnight and the XIT managers, cut wild hay from river bottoms and playas and stored it for the cold season. Playas and upland springs provided drinking water in the wet season and cattle sought shade under the few remaining trees along the Canadian's tributaries. Careful ranch managers husbanded their different types of resources, and James E. McAllister quit as manager of the LS ranch in part because his concerns about overstocking were ignored, with predictable results when no grass was left for winter. The quest for rapid financial returns from the land and the so-called "Beef Bonanza" had claimed more victims.[5]

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[4] Elliott West, *The Contested Plains: Indians, Gold Seekers and the Rush to Colorado* (Lawrence: University Press of Kansas, 1998), 51-52; Julius Ruechel, *Grass-Fed Cattle: How to Produce and Market Natural Beef* (North Adams, MA: Storey Press, 2006), 56.

[5] William M. Pierce, *The Matador Land and Cattle Company* (Norman: University of Oklahoma Press, 1964), 83; Ranch Manager Diary, April 3, 1924, Box 2, Folder 1, Alamositas Division, Matador Land and Cattle Company Collection, Southwest Collection/ Special Collections Library, Texas Tech University, Lubbock, Texas. The manager diaries describe moving cattle out of parts of the Division and into others after calving finished in the spring every year, and moving them back in the fall in order to rest the grass as much as possible.

Getting rich – quickly – had been one of the lures of the New World since the beginning of English colonization in the early 1600s. This time, the gold was in the grass of "one of the finest grazing areas on the globe . . . This ancient desert has been for a long time the favorite pasturing ground of the buffalo and it doubtless now [1881] contains more domestic cattle than it ever did buffalo." According to boosters such as General James S. Brisbin, author of *The Beef Bonanza or How to Get Rich on the Plains* and Walter Baron von Richthofen, who penned a guide to *Cattle-Raising on the Plains of North America*, one could not go wrong with cattle (or sheep) on the lush, open plains of North America. After showing the ever-increasing prices for cattle on the Chicago Livestock Market in the 1860s, Brisbin promised that, "for ten years at least the stock grower need have no fear of overstocking the beef market." Based on a hypothetical ranch where eighty four percent of the cows had calves that lived to maturity, Brisbin advised that a well-managed business would generate a fifty-percent return on the initial capital investment and at least a twenty-five-percent dividend! The slightly more conservative, Silesian-born Baron von Richthofen estimated that, "75 to 80 percent of the cows will drop one calf each year and that mortality among these calves will be affected by the mildness or rigor of the climate." According to a Mr. Alfred Butters of Denver, quoted in von Richthofen, one could expect "25 to 30 per cent per annum" but that the increasing price of beef during 1879-1884 gave Butters "profits . . . from 50 to 60 per cent." Expenses, according to von Richthofen, were limited to cattle, horses and cowboys, since so much free land was available. Works like these whetted the appetites of British and other investors, tempted by the predictions of very great returns on any funds invested in cattle. One of the things that made this dream so attractive to both experienced businessmen and to eager newcomers was the availability of "free" or very inexpensive land in the western United States that only needed the addition of cattle and

management in order to produce great rewards. This "free" government land later proved to be rather expensive for those who invested their cash, labor or political capital.[6]

Unlike either local ranchers or the State of Texas, the federal government initially valued all lands equally for homesteading the semi-arid lands - $1.25 per acre if purchased after three years, or free except for filing fees after seven (later five) years of residence and of making improvements, no matter if it had surface water, trees, grass or included the vertical side of a mesa. The idea behind the uniform price related directly to the Homestead Act and was a policy that failed to change despite growing evidence that 160 acres (64.75 hectares) of land was exactly the wrong amount for settlers west of the 100th meridian. After early experience showed the problems, the legislature of the state of Texas came to recognize the differing values and priced land as farmland, irrigable range and dryland, with declining prices per acre. Potential ranchers and farmers quickly learned that regardless of grass quality or the prospects for dry-land farming west of the 100th meridian, control over access to the land and the waters near it was vital.[7]

Based both on economics and on land laws, different ranchers used different methods to secure the range they needed. For example, Charles Goodnight, T.S. Bugbee and George

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[6] James G. Brisbin, *Beef Bonanza or How to Get Rich on the Plains: Being a Description of Cattle-growing, Sheep-farming; Horse-raising and Dairying in the West* (Philadelphia: J. B. Lippencott and Co., 1881), 10, 25, 51, 56; Walter Baron von Richthofen, *Cattle-Raising on the Plains of North America* with an Introduction by Edward Everett Dale (1885; repr., Norman: University of Oklahoma Press, 1964), 48-49, 73, 79, 71.

[7] Thomas Loyd Miller, *The Public Lands of Texas, 1519 – 1970* (Norman: University of Oklahoma Press, 1972), 31; Handbook of Texas Online, "Public Lands" http://www.Tshaonline.org/handbook/online/articles/PP/gzp2.html; Ira G. Clark, *Water in New Mexico: A History of its Management and Use* (Albuquerque: University of New Mexico Press, 1987), xi; Paul Wallace Gates, *History of Public Land Law Development* (1979; repr., New York: Arno Press, 1979), 391, 394, 420.

Littlefield simply moved their herds into a region empty of livestock and claimed the land and water by possession, or as homestead law phrased it, preemption. In 1876-77 there was very little competition for the resources of the Texas Panhandle and eastern New Mexico and it was relatively easy for the men to settle, then start paying for some of the land that they used once the area was organized into counties. The Anglo squatters' rights were recognized by newer arrivals to a large extent, under the common law tradition of preemption and also because there was more than enough land to go around.[8]

Another method of acquisition used by those individuals or corporations with sufficient resources was to purchase their land, especially those acres with reliable water. W.M.D. Lee and the Bates and Beale partnership are two examples of businesses starting in this manner, with Lee purchasing 35, 250 acres (14,266 ha, 55 square miles) of land from the surveyors Jot Gunter and W. B. Munson, who had been paid in land for their survey work. New Mexican ranchers, unable to purchase the large acreages needed to support their herds, resorted to the subterfuges described earlier in order to secure the use of the range. The actual number of acres owned by an individual such as New Mexicans Henry McBroom of the Horseshoe Ranch (on the Caprock plateau just south of the Canadian Valley) and Frank Harper (the Box Ranch at Holgadero/Red River Springs in the Valley near the Texas border) or Francisco Gallegos often included nothing but the acres with water in them. These allowed the rancher to control the surrounding lands. But even as the "hardy pioneering ranchmen" of tradition drove their bunches of Longhorns into the

[8] Haley, *Goodnight,* 303-304; Gates, *Land Law Development,* 66.

Canadian watershed and established their ranges, well-organized and funded corporations also began making their presence known.[9]

Corporate agriculture entered the Canadian River region at almost the same time that individual ranchers did. Capital was expensive in the United States during this period, and bankers charged high interest rates on loans and issued strict terms for acceptable collateral. Even James V. Farwell, a successful Chicago businessman with excellent connections and credit ratings, could not obtain a loan based on the title to 3,000,000 acres of land in Texas in 1883. This forced him to turn to English money markets for capital. Another example, the Scottish-owned Prairie Land and Cattle Company, Limited, which began as an offshoot of the Scottish-American Mortgage Company, Ltd. Like other British investors, members of Scottish-American's Board of Directors had made money in the 1860s and 1870s by borrowing at low interest rates in the British money markets and lending to men like Farwell in the more expensive United States market. Encouraged by their American manager Frank L. Underwood, the Scottish-American Mortgage Company founded a separate ranching business with an initial capitalization of £ 200,000. Shortly thereafter the company purchased property in the Dry Cimarron Valley of far northeastern New Mexico and in southern Colorado beginning in 1880, starting with the Hall Brothers' Cross L Ranch in northern New Mexico, which the corporation acquired in early 1881. The Prairie Company expanded quickly, paying $450,000 for the Cross L and then adding the JJ brand of the Las Animas Land and Cattle Company. Cattle sales in 1881 netted £ 21,478 after marketing cattle at $35 per head and allowed the company to issue a twenty-six percent dividend. Soon the company added George Littlefield's LIT Ranch in the

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[9] Donald F. Schofield, *Indians, Cattle, Ships and Oil: The Story of W. M. D. Lee* (Austin: University of Texas Press, 1985), 56; Miguel Otero, *My Life On the Frontier: 1864-1882* (New York: Press of the Pioneers, 1935), 261, 262; Don McAlvey and Harold Kilmer, *High Plains History of East-Central New Mexico* (Clovis, NM: High Plains historical Press, 1980), 1, 4.

Canadian Breaks to its holdings. Despite this purchase and expansion, the Prairie Company paid a ten percent dividend along with a seventeen-shilling per share bonus in 1881. Encouraged by stories such as this, investors formed the American Pastoral Company in London in 1884 and purchased the LX Ranch and its acres in Moore, Potter, Randall and Hutchinson counties, Texas for a total of 204,000 acres (82,559 hectares) freehold "strategically located to control a range of over 700,000 acres (283,290 ha) that included twenty miles of Canadian River waterfront." That year the A.P.C. paid an eight percent dividend. However, even as large as these companies were, the largest by far was the Capitol Freehold Land and Investment Company Ltd, better known by its brand: the XIT.[10]

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[10] J. Evetts Haley, *The XIT Ranch of Texas and the Early Days of the Llano Estacado* (Norman: University of Oklahoma Press, 1953; new edition of Chicago, 1929), 71-72; W. Turrentine Jackson, "British Interests in the Rang Cattle Industry" in Maurice Frink, W. Turrentine Jackson and Agnes Wright Spring, *When Grass Was King: Contributions to the Western Range Cattle Industry Study* (Boulder: University of Colorado Press, 1956), 137, 143, 145, 146, 147, 216; Boyd C. Pratt, *Gone but Not Forgotten: Strategies for the Comprehensive Survey of the Architectural and Historic Archaeological Resources of Northeastern new Mexico: Volume 1: History of Northeastern New Mexico,* (Santa Fe: New Mexico Historic Preservation Division, 1986), 156*;* Mary Grooms Clark, *A History of New Mexico: A Mark of Time* (Canyon, TX: Staked Plains Press, 1983), 222.

CHAPTER 9 - Ranches and the River

The tale of the Canadian River is bound up with that of the ranches that lined its banks, enclosed its floodplain and of the cattle that grazed the river's lush riparian vegetation. During the era of the great English and American ranches, foreign capitol and national politics began exerting a greater influence on the river and its watershed. Famous names from this era of riverine history include Charles Goodnight, Ira Aten, the Prairie Land and Cattle Company, and the Capitol Freehold Land and Investment Company, better known as the Capitol Syndicate or the XIT Ranch.

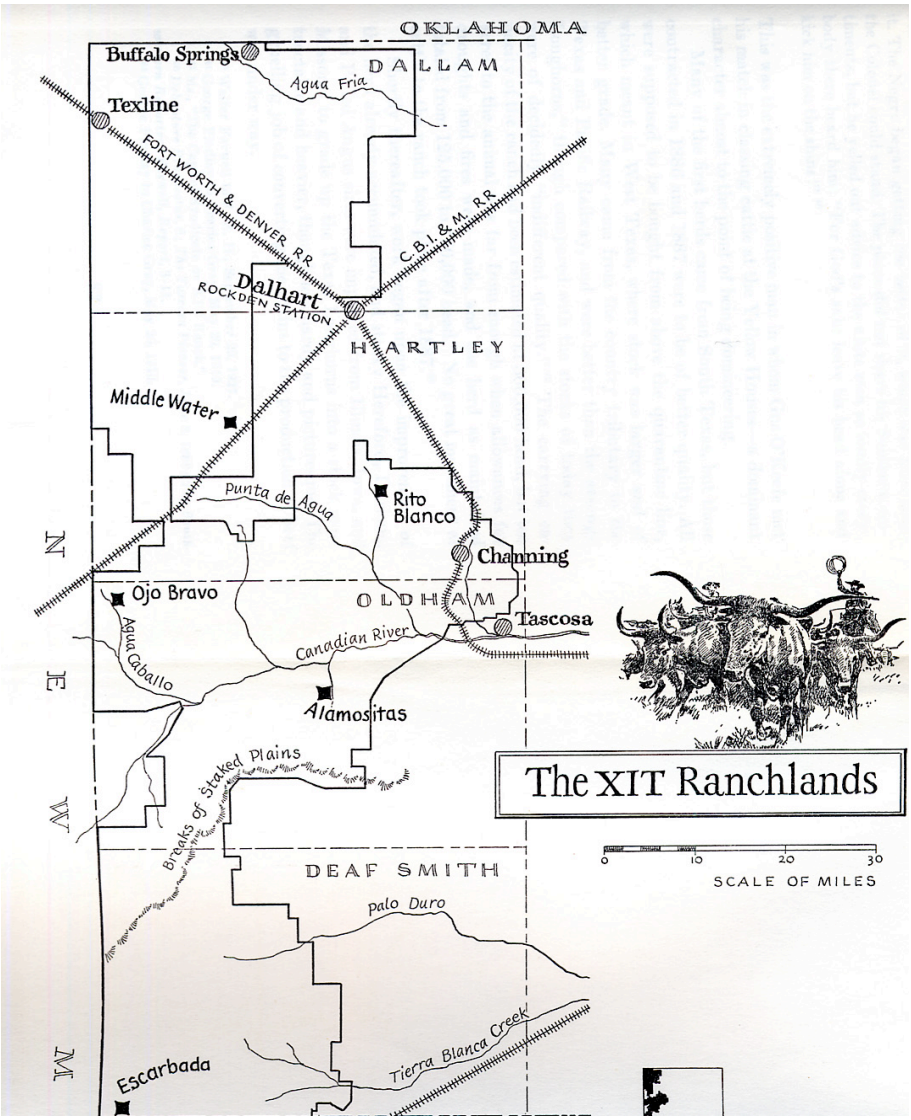

Figure 8: Northern Divisions of the XIT. From J.E. Haley "The XIT Ranch of Texas" facing p. 82.

The XIT Ranch, or the Capitol Syndicate as the American branch was called at the time, was an Anglo-American corporation in the literal sense of the term. In 1879 the Texas legislature set aside 3,050,000 acres of marginal, low value land in order to pay for a new capitol building. On January 1, 1882 Matthias Schnell and A. A. Burck placed the only bid and were awarded the construction contract, which they subsequently shared with Taylor, Babcock and Company of Chicago. Abner Taylor, A.C. Babcock, and John V. and Charles B. Farwell took over the entire contract on May 9, 1882, and the capitol cornerstone was laid in March 1885. Meanwhile, the Farwell brothers realized that they needed additional capital, but it was unobtainable in the United States. John V. Farwell had extensive business connections in Europe, and in 1885 he traveled to London and incorporated the Capitol Freehold Land and Investment Company, Ltd, with authorized capital of £ 3,000,000 ($15,000,000 at the time). Eventually the company also sold debentures, better known as bonds, at five to seven percent return. In an arrangement that lasted until 1909, the Farwells and A.C. Babcock ran the business in America as the Capitol Syndicate and reported to the British board. A photograph of John V. Farwell taken during this time showed a square-jawed man with light colored hair, a high forehead and narrow eyes behind wire-rim glasses. More banker than cowman, Farwell's portrait suggests a businessman who always double-checked the price of anything and who tolerated little waste or extravagance, traits that he wrote into the Syndicate's contract with its cowboys. Having a separate financial arm and American management arm protected the Syndicate from some of the problems suffered

by the purely British companies, although even the XIT was not immune to national financial problems, drought, theft and fraud.[1]

If the 1870s had been the golden age of ranching in the United States, with double-digit returns on investment and soaring cattle prices, the mid 1880s into the mid 1890s were almost its nadir, especially for foreign-owned corporations. Complaints about foreign land owners and abuses of the Homestead and Desert Land Acts led Secretary of the Interior Henry Moore Teller to launch an investigation into land fraud and to rule in September 1884 that despite multiple requests, public lands were not for sale in large blocks or to other than "actual settlers who cultivated and improved the land, and then only in limited quantities." Both the Democrat and Republican Party campaign platforms that year included planks about passing laws to "curb alien holdings" of American land. Texas still allowed aliens to purchase land and as mentioned above, the American Pastoral Company bought the LX Ranch in 1884. A stronger federal anti-fencing law came into effect February 25, 1885, leading the Prairie Cattle Company to remove fences from its New Mexican and Colorado ranges and to shift animals onto the already overgrazed Texas property. As if this were not enough, another federal ruling in 1885 cancelled pasture leases on the Cheyenne and Arapahoe Indian Reservation, forcing cattlemen who had placed cattle there to remove them immediately. Many ranchers, unable to find land in Indian Territory or No Man's Land (modern Oklahoma Panhandle) to graze their animals on, "dumped" the animals on the market, further depressing already low prices with a glut of young cattle. As

[1] J. Evetts Haley, *The XIT Ranch of Texas and the Early Days of the Llano Estacado* (Norman: University of Oklahoma Press, 1953; new edition of Chicago, 1929), 50, 52,53, 71, 72.

prices per hundred weight sank, leading industry publications such as the *National Livestock Journal* published articles about overproduction and the problem of declining returns.[2]

Adding to the financial and legal uncertainty, in 1886 the U.S. Congress considered legislation that would have prohibited all non-citizens and foreign corporations from owning land in the country. The next year a law was passed to prohibit non-citizens from owning land in the territories unless they took it as payment for a debt or inherited the property. In Texas, future-Governor James S. Hogg proposed legislation to reign in the "usurious" Scottish mortgage companies backed by " 'English lords, syndicates and corporations' " in 1890 and to prohibit non-citizens from owning land. After much protest, both laws were passed in 1891 and 1892, then modified and more-or-less ignored by all parties before being declared unconstitutional on a technicality the next year. By then the Scottish and other ranchers had far more pressing problems attracting their attention.[3]

As these legal changes were underway, an economic downturn in 1886 reduced the demand for beef, cutting profits even further. Almost no British cattle company paid any dividend that year, even the well-run organizations such as the XIT, Matador and Prairie. The next year saw drought returning to the southwest, forcing southern ranches to sell cattle and again depressing the market for livestock. The Prairie Land and Cattle Company's woes were not quite over when the rain returned, and in 1888 they reluctantly paid the State of Texas rent on 67,000 acres of Canadian Valley land at $.04 per acre. They were not the only ones affected by

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[2] W. Turrentine Jackson, "British Interests in the Rang Cattle Industry" in Maurice Frink, W. Turrentine Jackson and Agnes Wright Spring, *When Grass Was King: Contributions to the Western Range Cattle Industry Study* (Boulder: University of Colorado Press, 1956), 199, 238, *National Livestock Journal* quoted in the *Ford County (*KS) *Record* September 29, 1885.

[3] Jackson in Frink, *Grass Was King,* 242, 250; *Ford County Record* November 24, 1885; W. G. Kerr, *Scottish Capital on the American Credit Frontier* (Austin: Texas State Historical Association, 1976), 191.

enforcement of the law – Charles Goodnight was among the other ranchers finally forced to pay for the state-owned grass they had been using. Away from Texas and New Mexico, the winter of 1887-1888 was termed "the Great Die-up" on the northern ranges after winter storms killed between ten and twenty five percent of the cattle in Montana and Wyoming. Texas was not spared from the harsh winter: a blizzard struck the Panhandle on December 19, causing mild chaos for cowboys of the Frying Pan and Francklyn Ranches in eastern Potter County as they tried to separate their herds of drifting cattle. Companies that were already struggling failed, and one suspects that the managers of southern ranches like those in the Canadian River watershed felt mixed emotions as they read the news: sorry to hear about the losses but not sad that there would be fewer animals on the market that year. If the lethal winter storms of 1873-74 had shaken out the range cattle market and signaled the beginning of the end for the great Texas to Kansas trail drives, then the winter of 1887-88 did the same for the open range cattle business on the northern plains. The process was already well underway along the Texas part of the Canadian River, because with one notable exception the period of ranch consolidation and the purchasing of large ranches ended in1884 and did not resume until the early twentieth century. That exception was the sizeable land exchange between the LS and XIT that allowed each ranch to consolidate its holdings onto one side or the other of the Canadian River. Fencing arose on the now-defined ranch borders and inside them as well, dividing the river valley by use and ownership. The New Mexican stretch of the river, however, remained different.[4]

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[4] Jackson in Frinck, *Grass Was King,* 271; Haley, *Goodnight*, 384, 392; Louis Pelzer, *The Cattlemen's Frontier: A Record of the Trans Mississippi Cattle Industry from Oxen Trains to Pooling Companies, 1850-1890* (Glendale, CA: Arthur H. Clark Co., 1936), 187; Paul H. Carlson, *Empire Builder of the Texas Panhandle: William Henry Bush* (College Station: Texas A&M University Press, 1996) 41; Joseph G. McCoy *Historic Sketches of the Cattle Trade of the West and Southwest*, (Kansas City, MO: Ramsey, Millett and Hudson, 1874; reprinted as *Cattle Trade of the West and Southwest* Ann Arbor, MI: University microfilms, Inc. 1966), 250.

New Mexico remained open range and ranch borders there stayed indefinite for several reasons. The Red River Land and Cattle Company/ Bell Ranch had perfect title to its lands and fenced as soon as feasible in order to protect its pastures and water rights from Hispano flocks and straying cattle, as well as to assist with improving its herds of purebred cattle. However, it is probable that even if the other ranchers in the eastern New Mexican plains had been allowed to purchase the land that their animals grazed, many of the ranchers did not have the cash needed to buy all the acres that they used, let alone to erect fences that would likely be cut.[5]

One example of this can be seen in the San Miguel County brand book, the listing of all legally registered livestock identification marks. The brand book shows a large number of cattle and sheep brands, apparently still active, registered to people living in the Endee and Liberty area near the Ute Creek/Canadian confluence. Some of these may have been speculative filings as people anticipated starting a herd, some may have been brands of a few animals that people brought with them when they moved to Liberty, and a few belong to companies such as the Chadbourn Brothers and Co., the Howrey Cattle Co., the Fort Bascom Cattle Raising Co. and others. A quick comparison of the San Miguel County Brand Book Volume One with the county tax records for the same time shows that far more people owned brands than paid taxes on ranches, even allowing for registration of "road brands" and for ranchers who purchased the rights to multiple brands as they bought entire herds to use for stocking their own ranches. This pattern continued after 1894, when the Canadian River valley became part of the newly formed Union County: the area remained a grazing commons for the most part. Individuals allowed their livestock to graze on unclaimed and/or unfenced federal lands, with each person adding more

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[5] David Remley, *Bell Ranch: Cattle Ranching in the Southwest, 1824-1947* Revised Edition,(Las Cruces, NM: Yucca Tree Press, 2000), 153.

and more livestock in order to take advantage of the "free" grass. The livestock owners likely reasoned that after all, there was plenty of open land, and a few more animals would not cause problems. Besides, it was their tax money that was tied up in federal land anyway, so why not use it? And some may have felt that it was better for American-owned cattle to eat all they could before foreign-owned herds or flocks could. One result of the rise of increasingly large herds on unfenced land was that it proved simpler for the few people with gardens or irrigated pastures, like those at Gallegos or around Liberty and Santa Rosa, to fence others' cattle and sheep out.[6]

However, several ranches south of the Canadian did erect drift fences during the 1890s; and at roughly the same time they installed windmills on the public land that they grazed. These fences were constructed for the same reason that the earlier Texas ranchers had fenced – to protect the grass from hungry northern cattle. These were the ranchers who would take their case to the U.S. Supreme Court after 1900 in an attempt to slow the removal of drift fences and obtain permission to lease the un-sold lands. The fences protected the grass from storm-driven livestock while the windmills expanded the amount of land that could be grazed efficiently, by providing more watering places for the local cattle. But these windmills and fences were erected on federal property, in violation of federal statutes and in violation of the spirit of the Homestead Act. And Anglo-Texan ranchers were not the only people interested in keeping New Mexico's federal lands open to all grazers.[7]

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[6] San Miguel County Tax Assessments 1884-1893, Books 1 and 2, Rolls 1-5, New Mexico State Record Center and Archives, Santa Fe, NM (hereafter NMSRCA); Clark, *Mark of Time,* 18,19; McAlvy and Kilmer, *High Plains History,* 4, 95; *Brand Book 1: San Miguel and Santa Fe Counties*, 74, 90, 82, MNSRCA.

[7] "Affairs in New Mexico," *Texas Stock and Farm Journal*, February 14, 1900.

Although unlike Wyoming and Nevada, the Canadian valley and uplands did not witness a protracted or especially bloody struggle between sheep owners and cattlemen, Hispanos still had difficulty retaining their earlier places. Much of this is explained by the importance of sheep to the New Mexican economy. Like Texas, the Territorial Legislature of New Mexico passed laws beginning in 1884 regulating the movements of shepherds and their flocks that included limits on how long sheep could remain on private property that did not belong to the flock owner and that enumerated the distances that flocks needed to move from private water each day. In 1897, the territory created a Sheep Sanitary Board specifically to control scabies; a skin condition spread by sheep mites that damaged fleece quality and in worst cases killed the infected animals. Working with the U.S. Department of Agriculture, procedures for dipping (herding the animals through a deep trough full of medicated water) and rules governing transportation, reporting and inspection of all flocks were put in place. Several of the territory's largest sheep owners, including Hispanos such as Solomon Luna, served on the board. These rules caused difficulties for small flock owners and the men under *partido* contracts because of the cost of building and supplying the dipping vats necessary to treat and prevent scabies.[8]

The fencing of the public range also caused difficulties for the *pastores*, although the manager of the Prairie Land and Cattle Company complained about the flocks of sheep crossing the federal range in Colorado and eating grass that "belonged" to the Company. In his 1894-95 report, Arthur Tisdall of the Bell Ranch in the Canadian valley explained that sheepherders still "cut and lift the [fence] wires to let their sheep in" to what the shepherds still regarded as their

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[8] Paul H. Carlson, *Texas Woolybacks: The Range Sheep and Goat Industry* (College Station: Texas A&M University Press, 1982), 97-98; Sheep Sanitary Board "Rules and Regulations for the Sheep Sanitary Board of New Mexico Adopted July 29, 1897," Box 1, Folder 11, "New Mexico History Collection, CSWR, 4, 15-17.

community commons. It is probable that as more and more cattle grazed the Canadian watershed, the *pastores* retreated toward the Pecos valley and the forests in the mountains. Some *pastores* continued the seasonal round, however. Oral tradition and at least one history of Quay County describe disputes over control of water between the Anglo-American settlers moving into the area and *pastores*. The spring-fed lake near Tucumcari town became a source of special contention after 1900 because Anglo residents depended on it for their drinking water and did not want sheep polluting the spring. This tale and others points to another layer of complication in the Canadian Valley story – that of social class.[9]

Sheep and cattle symbolized the class and economic differences between the arriving Anglos and the increasingly marginalized Hispano pioneers and *pastores*. Although sheep formed a vital part of the New Mexican economy and remained important livestock in southern Texas, many Anglo-Americans viewed sheep owning and herding as having lower prestige than raising cattle. Cowboys were already "knights on horseback" – the end of the trail drive era marked the beginning of the romanticization of ranching. Hispanos farmed or raised sheep, both occupations practiced on foot and often by members of the lowest social groups such as children, women and other "dependents." The English, such as Arthur Tisdall and Charles M. O'Donel of the Bell Ranch, Murdo McKenzie who managed the Matador and Prairie Land and Cattle Company holdings, and John Arnot who cowboyed on the XIT, tended to view Hispanos and poor American whites through the lens of class. Anglo-Americans moving into the high plains took a racial approach, still seeing the Catholic Hispanos as being backwards and untrustworthy.

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[9] Tisdall to J. Greenough, Esq March 23, 1895, BC Box 29, MSS 86, RRVC, CSWR; Samuel Leo Gonzales, *The Days of Old* (Albuquerque: Self published, 1993), 76; "Gorras Blancas" in "Narrations, Notes, Folklore", Box 1, Folder 1, Fabiola Cabeza de Baca Gilbert Collection, CSWR, (n.p.); Dorothy Virginia Morton, "A History of Quay County, New Mexico" (master's thesis, University of Colorado, 1938), 40.

The anti-Catholic strain among Anglos stretched back to the 1500s with the reign of Mary Tudor, "Bloody Mary," and traveled to the New World along with Protestantism and antipathy towards the French. "Popish plots," ties between the Catholic Church and the Stuart family and suspicions that Catholics were taught by the Jesuits that they could lie under oath fueled anti-Catholic laws, and later distrust and conflation of Catholicism with ignorance and "backwardness." These sentiments were not universal among Anglos, but were prevalent enough to color the attitudes of many Anglo-Irish and Yankee ranch managers.[10]

Oddly enough, the Texas Panhandle's blend of one-third English, one-third Yankee and one-third Southerner helped ameliorate the worst of both tendencies and prior to 1900 the area saw much less of the racial and ethnic problems that gripped either southern Texas or the mountains of New Mexico. In the Territory, tensions rose between the Anglos and the *ricos* such as Solomon Luna and Miguel Otero who allied with them and who held the political power, and those individuals wanting better economic rights and more political power for the Hispanos as well as protection of the traditional grazing rights to the open ranges. These conflicts led to the creation of the *Caballeros de Labor* (Gentlemen of Labor) in the early 1890s as an alternative to the Anglo-controlled Republican and Democrat political machines. Those interested in more direct methods than the *Caballeros* endorsed formed the *Partido del Pueblo* or People's Party, better known by their masks: *Gorra Blancas*, the White Caps, probably a reference to the White

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[10] Remley, *Bell Ranch,* 140-141; Tisdall to J. Greenough, Esq March 23, 1895, BC Box 29, MSS 86, RRVC, CSWR; George J. Marlin, *The American Catholic Voter: 200 Years of Political Impact* (South Bend, IN: St. Augustine's Press, 2004), xii, xiv, 6; Rufus B. Sage "Diary - 1842" in *Foreigners in their Own Land: Historical Roots of the Mexican Americans* ed. David J. Weber (Albuquerque: University of New Mexico Press, 1973), 73.

Caps in Texas and other states who cut fences, burned crops and attacked those who offended local customs and mores.[11]

The violence committed for politics, and by people using the political dispute as an excuse for purely criminal activity, spilled over onto the plains, leading Tisdall in a letter to the Bell's owner, J. Greenough, in 1895 to describe local government as "weak" and two years later to blame "renegade Americans," for corrupting the annoying but harmless local people. However, in general the Canadian Valley seems to have been spared the conflicts engulfing other parts of the Territories. One wonders if ranchers and sheep owners both declined to start a range war for fear of drawing even more federal attention to their use of the open range. The actions of Arthur Tisdall in helping the Hispanos residing on the Bell to move out and establish homesteads on the other side of the fences also contributed to the relative peace, according to ranch historian David Remley. Jack Culley, the Bell ranch employee directly responsible for working to remove the Hispanos, speculated that the residents were less willing to resort to violence and were more willing to depart because they knew that their claims to the land were weak since they were not the legal heirs to the Pablo Montoya Grant. All parties worried about reports of increasing numbers of Anglo criminals such as Black Jack Ketchum. The feuds spilling into southeastern New Mexico from Texas like that between the Spike Brothers and Frank Ghoulson in the canyons on the south edge of the Canadian River Valley in eastern New Mexico drew in both Anglo and Hispano settlers. The aforementioned economic woes probably contributed to rising crime as well as affecting everyone involved in the livestock markets, as did non-human agents

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[11] 1880 Oldham and Potter counties, Texas, Tenth United States Census; *Stockman's Journal* June 29, 1894, (1); Lester Raines interview with Mary A. Fulgenzí, n.d., "Gorras Blancas" in "Narrations, Notes, Folklore", Box 1, Folder 1, Fabiola Cabeza de Baca Gilbert Collection, CSWR, (n.p.); CSWR; Tobías Durán, *We Came as Friends: Violent Social Conflict in New Mexico, 1810 – 1910* (PhD diss., University of New Mexico, 1985), 162, 190; Cabeza de Baca, *Cactus*, 89, 90.

including drought, flood, blizzard, deforestation, and locoweed. The last two problems stemmed in part from the influx of cattle in the river drainage, something that led Ynocencio Romero in later years to charge Anglo-Texan ranchers with allowing their herds to overgraze the river valley, leading to the major changes that he observed in the river.[12]

The introduction of large numbers of domestic cattle to the Canadian River valley could have started changes to the riverbanks and plant communities in the valley because of the way cattle grazed as well as because of the sheer number of animals concentrating around the water sources. Sheep nibbled on plants, eating both grasses and forbs, while bison bit off grass stems and leaves close to the ground. In contrast, domestic cattle took leaves from higher off the ground while using their tongues to grasp the plants. Cattle were also more selective in their choice of grasses, eating out their preferred bluestems, grama and wheat grasses before consuming other species. The feet of domestic cattle were also different from those of bison, which had more "cup-shaped" hooves that did not compress the soil like those of cattle (and horses). Because cattle do not pant to lose excess body heat as bison do, they had more difficulty cooling themselves off and so they "shaded up" during the heat of the day. One result of these behaviors was the overgrazing of tall grasses near shady and riparian areas, while another result was the waste and flattening of the grass and brush where the cattle rested. Since cattle preferred the riparian areas in summer, they consumed the Canadian's riparian vegetation during the growing season and in the process weakened the grasses for the next year's growth. Cattle also established preferred routes into the water, called "cow ramps." These worn, low spots encourage erosion of the surrounding banks by changing local water flow, thus causing the

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[12] Tisdell to Greenough, 1898, BC Box 29, MSS 86, RRVC, CSWR; Cabeza de Baca, *Cactus*, 90; John H. "Jack" Cully, *Cattle, Horses and Men of the Western Range* with forward by David Remley (1940; repr., Tucson: University of Arizona Press, 1984), 5,21,23; Mary Grooms Clark, *A History of New Mexico: A Mark of Time,* (Canyon, TX: Staked Plains Press, 1983),170.

surrounding banks to break and collapse during high stream flows. This was especially widespread if the grass and other plants had been grazed off the surface of the stream banks and their roots no longer held the soil in place. As domestic cattle drank, ate and ruminated, their hooves may have contributed to the changes Ynocencio Romero observed in the Canadian River.[13]

As described earlier in this chapter, ranchers sought access to a variety of landscapes in order to meet their animals' needs. The LS, LX, XIT and other river-valley ranches owned both riparian lands and upland pastures. This gave ranch managers more flexibility as to where to graze cattle in order to make the best use of available grass and water. And on the uplands, water was the key. Cattle will generally stay within two miles of a water source, preferentially grazing out the area before moving farther from the stream or tank. This meant that until the instillation of artificial ponds and windmill-powered wells, cattle grazed the lands around springs and streams heavily while neglecting the rest of the grass, especially if the natural depressions (playas) were empty as happened in dry years or late summer. As a result, the theoretical stocking rates for an area did not reflect how many cattle it could really support, especially in the early days.[14]

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[13] Dale F. Lott, *American Bison: A Natural History* (Berkley: University of California Press, 2002), 93; M. Flenniken, R. R. McEldowney, W.C. Leininger, G. W. Frasier and M.J. Trlica, "Hydrologic Responses of a Montane Riparian Ecosystem Following Cattle Use," *Journal of Range Management* 54, No., 5 (September 2001), 573; Ed Chaney, Wayne Elmore and William S. Platts, "Livestock Management on Western Riparian Areas" (Washington D.C.: Environmental Protection Agency, 1993), 6; Stanley W. Trimble and Alexandra C. Mendel, "The Cow as a Geomorphic Agent: A Critical Review," *Geomorphology* No. 13, (1995), 243, 247-248. This is not to say that bison and sheep could not overgraze or "eat out" a stream or cause bank erosion.

[14] John R. Vallentine, *Grazing Management* (San Diego, CA: Academic press, 1990), 70-71; Lyons and Machen, "Stocking Rate," 2; Steve Leonard, Gene Kinch, Van Elsbernd, Dr. Mike Borman, Dr. Sherman Swanson, "Riparian Area Management: Grazing Management for

The example of the XIT Ranch as a whole shows the complexity of the question of "were the Canadian Breaks and watershed overgrazed?" The large ranch covered three watersheds – a small part in the Dry Cimarron to the far northwest, the Canadian, and the Red in the southern divisions, for a total of 3,000,000 acres (1,214,057 ha). An analysis of parts of three divisions within the Canadian watershed: Buffalo Springs in the far north, Middlewater south of Buffalo Springs, and that part of the Escarbada that drained into the Canadian (see map p. 138), shows how vital artificial water was for even distribution of grazing. The pasture around Punta De Agua Creek, along the Hartly-Oldham County border contained roughly 87,205 acres (35,285 ha). However, cattle would have spent ninety percent of their grazing time in only 46 percent of that area (40,014 a; 16,200 ha). This stretch of Punta de Agua Creek would have been heavily overgrazed and eroded compared to the surrounding area unless salt-blocks or other techniques were used to encourage cattle to graze elsewhere within the pasture.[15]

The Buffalo Springs Division contained relatively numerous natural water sources in playa lakes and the Buffalo Spring. However, these were located on the far northern part of the division. Of the Division's 406,743 acres (164,608 ha), cattle would have spent ninety percent of their time on only thirteen percent (54,285 a; 21969 ha) of the land unless "artificial water" was provided. The XIT's managers had 47 windmills and wells constructed, allowing cattle to graze at least 60 percent of the land. And even after the construction of windmills and stock tanks, a grass fire like those in 1895 and 1902 or a dry summer without grass could force ranchers to

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Riparian-Wetland Areas," Technical Reference 1737-14 (Denver, CO: U.S. Department of the Interior- Bureau of Land Management, 1997), 21,44.

[15] Charles M. O'Donel to John Greenough, April 1, 1898, MSS 86 BC Box 29, RRVC Records 1865-1947, RRVC Collection, CSWR; R.L. Duke "Buffalo Springs January 1905" XIT Division Manager Reports, 1905, XIT Collection, PPHM; Capitol Lands Platt Book, 73,74, XIT Collection, PPHM; Trimble and Mendel, "Cow as Geomorphic Agent," 243.

move upland cattle into the Breaks and valleys early or to hold animals there that would normally have wintered on the uplands.[16]

Later ranch managers of the Canadian Valley portions of the XIT and of other ranches observed that the grass around the Canadian River and other watercourses was the first to suffer overgrazing, most noticeably during dry or very cold winters, and tried various measures to alleviate the problem. However, outside concerns sometimes prevented them from doing what was necessary. The depressed livestock markets following the Panic of 1893 also forced ranchers to hold animals longer. Charles O'Donel, R. L. Duke and Ira Aten and other ranch managers also resorted to spaying heifers for eventual sale as meat animals instead of using them as breeding stock as a way to keep cattle numbers down. However, it is also important to note that there was often a difference in the number of animals believed to be on a ranch and the actual number. In 1903 the XIT engaged in a full round up of every single animal on the ranch, and the manager discovered that they had thirty percent fewer cattle than they should have. Among other things, this lowered the theoretical stocking rate from eighteen acres/head to thirty-eight acres/head! Even allowing for erroneous cow counts, it is evident that the combination of all the variables described above contributed to a period of very intensive land use in the Canadian Valley.[17]

In contrast to Hispanos' preference for practicing geographically-extensive use of the Canadian's resources, the Anglo-Texan ranchers introduced intensive herding practices to the valley. Cattle did not roam freely from green patch to green patch over hundreds of square miles,

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[16] Captiol Lands Platt Book, 76; Trimble and Mendel, "Cow as Geomorphic Agent," 243.

[17] Capitol Lands Platt Book, 76,77, PPHM; Trimble and Mendel, "Cow as Geomorphic Agent," 243; January 1909, 1909-1911 Range Reports, Folder 2, Box 24, Alamositas Division, Matador Land and Cattle Company Collection, SWC/SCL, TTU; Vallentine, *Grazing Management,* 70-71, 84; 1903 Report, "XIT Ranch Herd Book" in XIT Ranch collection, PPHM.

as had the bison, nor were they driven to new pastures as soon as the old had been eaten down the way Hispanos moved their sheep. Instead, the Hereford, Angus, and Shorthorn cattle and other ranch animals remained in specific pastures until moved for shipping, breeding or if the grass were destroyed by drought or fire. The goal was to get the maximum possible number of cattle in the smallest range without completely stripping the land. In short, cattle and grass had become commodities to be exchanged for cash on a number-of-head-per-acre basis, a practice that sometimes led to conflicts between the managers "on the ground" and the ranch owners in Chicago, New York, London or Dundee.[18]

Ranch managers in Texas and New Mexico were well aware of the problems of overgrazing, even if they did not have long-term scientific research to back up their observations. In late summer 1886, "Mr. Mac", Jordan E. McAllister, the manager of the LS Ranch, resigned in protest when he learned of W.M.D. Lee and Lucien Scott's decision to keep 65,000 head of cattle on the ranch's reduced acres following an exchange of land with the Capitol Syndicate. Mr. Mac informed his employer that he would not be responsible for the ensuing winter losses caused by overstocking the LS, and instead joined Kamey Ritter to form the Ritter Ranch along the Canadian a few miles west of the Texas-New Mexico border. Both Arthur Tisdell and his successor Charles O'Donel of the Bell Ranch worried about overstocking caused by feral cattle, wild horses and burros, and wandering sheep as well as the Bell's own livestock. O'Donel in particular noted the invasion of poisonous weeds that followed dry spells and in a letter to G. E. Stoddard explained how "snake-weed" appeared during cool and wet springs on overgrazed ground. A hot, wet spring encouraged the return of the much-desired black grama grass that crowded out the snakeweed, but only if the land was allowed to rest. The Capitol Lands

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[18] Vallentine, *Grazing Management,* 295, 303, 322, 329.

Syndicate and the Matador Ranch had the luxury of owning additional lands in Montana, where they shipped cattle to be held for sale, northern cattle getting better prices than "Texas cattle" on the Chicago and Kansas City markets. However, Ira Aten of the XIT's Escarbada Division noted the presence of locoweed in July 1897, a well-known sign of overgrazing. If these sound like the actions and observations of men interested in conservation, it is because they were.[19]

It is safe to say that the ranch managers were conservationists in the sense of advocating wise use of resources in order to obtain the maximum long-term economic benefit, as the historian Samuel P. Hays describes in his work, *Conservation and the Gospel of Efficiency*. This consideration applied even to the type of purebred cattle selected for the High Plains. After some experimentation, the majority of ranchers settled on Herefords because they were "good rustlers," able to gain more weight on poorer forage than other breeds, and better able to withstand both the cold winters and hot summers of the region, as well as being good mothers. These qualities outweighed the slower growth rates and lower fertility of the bulls as compared to Angus, Durham and other breeds. This conservation-mindedness did not mean that ranch managers were concerned about the changes to the regional ecology and fluvial geomorphology, or that they even remarked on it in the documents and letters that exist today. Compared to winter losses, the meat-tariff dispute with Germany and the threat of depressed livestock markets, Arthur Tisdell, Ira Aten of the XIT, and Ernesto Gallegos probably would have

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[19] Dulcie Sullivan, *The LS Brand: The Story of a Texas Panhandle Ranch* 9Austin: University of Texas Press, 1968), 139 but see also Donald F. Schofield, *Indians, Cattle, Ships and Oil: The Story of W.M. D. Lee* (Austin: University of Texas Press, 1985). 82 for a slightly different version; "Escarbada Division" July 1897 "Division Managers Monthly Reports" XIT Collection, PPHM; Bell Ranch papers; O'Donel to G. E. Stoddard April 28, 1906, and C. M. O'Donel to G. E. Stoddard April 14, 1909, both in MSS 86 BC Box 29, RRVCo Records, 1865-1947, RRVC Collection, CSWR.

considered bovine alterations to the Canadian's and Ute Creek's banks and fish to be a minor matter.[20]

Given the situation described above, Romero's hypothesis that the change in the river was due to, or at very least strongly coincided with, the arrival of large herds of domestic cattle sounds plausible. However, the situation was more complicated. The 1870s were a comparatively wet period on the High Plains, with lush grasses and plentiful rains, and reduced grazing pressure following the disappearance of the bison and the Comanches' horse herds. This allowed the riparian and upland vegetation to rejuvenate and to expand to cover more ground. More plants held down more soil, reducing the amount of sediment washing into the streams because there was less bare ground and because the leaves and grass blades carpeting the land diminished the force of the rain drops striking the soil. If a stream receives less sediment while maintaining or increasing its flow, the river's water will become "hungry," balancing the lower sediment load by picking up more material from its bed and deepening the channel as a "degrading" stream. The return of grasses and trees also stabilized the riverbed, allowing the stream to re-establish a true floodplain and thus narrowing the river's channel. Test bores drilled later when bridges were built showed that the Canadian had eroded and then sanded up like this for millennia, and that Romero may have arrived during one of the less-common down-cutting periods when he found a narrow, deep channel with high, stable banks. A similar pattern was observed along the Cimarron River in southwestern Kansas between 1874 and 2000, and it is probable that stretches of the Canadian behaved much as did the Cimarron. A shift in the

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[20] Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge: Harvard University Press, 1959), 5, 261; O'Donel "Answers to Alvin Sanders' Questions" MSS 86, BC Box 3, RRV Co. Collection, CSWR.

regional weather also occurred during the years that Romero lived along the Canadian, something he could not have recognized but that played a role in the alterations he chronicled.[21]

It was only after 1892 that official U.S. government weather measurements exist for the western Texas Panhandle, and after 1900 for far eastern New Mexico. However, climatologists have reconstructed earlier periods from tree rings and other proxy data, and the pictures combine to show that in some ways, the region's weather then closely resembled that of more recent times, in that it was highly variable and a source of frustration to those attempting to make a living in weather-dependent industries such as agriculture. The reconstructed Palmer drought and wet index for the region, a scale based on the thirty-year-average for the area using the years 1958-1988, shows that the 1870s had neither extreme droughts nor extreme wet periods, unlike the preceding decade. The early 1880s were similar with 1882 being slightly drier (Palmer -0.52) than the mid-twentieth-century average and the other years neutral (Palmer 0.0). 1884 and 1885 seem to have been average to wet years (Palmer .01 and1.24 respectively). In addition, 1884 was a strong-moderate to strong El Niño year, meaning that the warm water off the Pacific coast

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[21] Romero, "Sheepmen," 57; Dave Rosgen, *Applied River Morphology* 2nd Edition (Wildland Hydrology: Pagosa Springs, CO, 1996), 2-2, 8-12; Thomas Dunn and Luna B. Leopold, *Water in Environmental Planning* (New York: W. H. Freeman and Company, 1978), 258, 261, 510, 516; Daniel H. Mann and David J. Meltzer, "Millennial-scale Dynamics of Valley Fills over the past 12,000 ^{14}C Years in Northeastern New Mexico, USA" *GSA Bulletin* 119, No. 11/12 (November/December 2007), 1446; Devine Ethredge, "The Role of the North American Monsoon in the Landscape Evolution of the Southwest United States." (master's thesis, University of New Mexico, 2000), 73-74; S.A. Shcumm and R. W. Lichty, "Channel Widening and Flood-Plain Construction Along Cimarron River in Southwestern Kansas," Geological Survey Professional Paper 352-D, (1963), 79, 82, 86; New Mexico State Engineer's Office, "Preliminary Report on the Geology of the Ute Dam Site, Quay County, NM" (Santa Fe: State Engineer's Office Technical Division, 1961) Vol. 3 "Canadian River Storage Sites Investigating Ute Reservoir" Box 29, Folder 1001, S/N 4346, State Engineer's Records, NMSRCA, 34, 37;Timothy Kane, Fluvial Geomorphology Lecture, December 1, 2005; Jeffrey A. VanLooy and Charles W. Martin, "Channel and Vegetation Change on the Cimarron River, Southwestern Kansas, 1953-2001," *Annals of the Association of American Geographers* 95, No. 4 (2005), 727, 736-737.

encouraged heavier late winter precipitation and stronger spring storms with heavier individual rainfall events. The following year was even wetter (Palmer 2.14), but 1886-1887 were very dry and early South Plains ranch manager Rollie Burns recalled 1886 as a drought year. The XIT Ranch weather records begin in 1888, with the Alamocitas Division in the Canadian Valley in Oldham County reporting 14 inches (357 mm) of precipitation for that year, as compared to the regional 1880-1914 average of 21 inches (533 mm). A fair amount of the area's precipitation also came in fall and winter, and Rollie Burns encountered heavy snow and sleet in November of 1889 when he tried to drive cattle to the shipping pens in Amarillo. But the 1880s were kind to ranchers and farmers when compared to the next decade.[22]

The 1890s marked the onset of a period of reduced annual precipitation that extended, with some periods of moderation, until 1905. The weather observer in Amarillo, Texas reported that the town received 15.6 inches (396. 2 mm) of rain in 1892, 17.2 inches (437.6 mm) the next year, and almost twenty five inches (almost 635 mm) in 1895, followed by two more relatively dry years. The thirty-five year average at the time was 21.1 inches (537 mm). The next closest official reporting point in the Canadian watershed, Las Vegas New Mexico, also experienced dry years in 1892, 1893 and 1894. From his ranch in the Ute Creek watershed between these two official weather stations, the Hispano diarist Francisco Miera looked back to December, 1891 and recorded that "The 1892 it did not rain much until since [sic] December 1891 until July 25

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[22] David W. Stahle and Malcom K. Cleveland, "Texas Drought History Reconstructed and Analyzed from 1698 to 1980," *Journal of Climate* 1, No. 1 (January 1988), 64; William Curry Holden, *Rollie Burns or an Account of the Ranching Industry on the Southern Plains* (College Station: Texas A&M University Press, 1986), 139, 143, 158-159; William H, Quinn "A Study of Southern Oscillation Related Climatic Activities for AD 622-1900 Incorporating Nile River Flood Data" in *El Niño: Historical and Paleoclimatic Aspects of the Southern Oscillation* ed. Henry F. Diaz and Vera Markgraf (New York: Cambridge University Press, 1992), 122; Daniel R. Cayan and Robert H. Webb, "El Niño/ Southern Oscillation and Streamflow in Western States" in *El Niño* Diaz and Markgraf, 47, 56; XIT Monthly Division Reports Alamocitas Division 1888, XIT Ranch Collection, PPHM.

1893. Therefore[,] the drought was for a year and seven months." Rainfall could be very localized: the division manager for the XIT's Spring Lake Division reported in June of 1892, "rain good on Capitol pasture" (but nowhere else), and in July that despite the amount reported at the headquarters building they had received "no rain on the Spring Lake Pasture" within that Division. 1902 was another drought year, with 9.8 inches (248.4 mm) at Las Vegas and 8.7 inches (221.2 mm) on the Bell Ranch Headquarters, but 23 inches (587 mm) at Amarillo. Between the Bell and Amarillo, the XIT divisions reported a dry spring following a wet winter that washed "the goodness" out of the grass, leaving the cattle weak. Ira Aten of the Escarbada Division reported problems with hunger-weakened cows bogging in the mud around the playas and springs in April. As the climatologists Stahle and Cleveland later observed, the wet years during otherwise dry decades, "were probably not sufficient to mitigate the long term environmental or economic impact of these historic drought eras."[23]

The end of the Little Ice Age coincided with the changing precipitation patterns and the continuation of post-Pleistocene drying, both of which influenced the physical changes affecting the Canadian. In the Canadian watershed, the Little Ice Age, the period from roughly 1350-1850 C.E., had been marked by cool summers, cold winters and relatively even amounts of precipitation over the course of the year – i.e. fairly snowy and stormy winters as well as damp springs and summers. Even within this larger pattern, the area remained semi-arid and prone to

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[23] Stahle and Cleveland, "Texas Drought History," 64, 66; New Mexico State Engineer, "Precipitation – Las Vegas, San Miguel County," and "Precipitation – Bell Ranch – San Miguel County" in *Climatological Summary of New Mexico: Precipitation* Technical Report No. 6 (Santa Fe, NM: State Engineer's Office, 1956), 310, 317; New Mexico State Engineer, *Climatological Survey of New Mexico: Temperature, Frost and Evaporation* (Santa Fe, NM: State Engineer's Office, 1956), 194; Charles T. Baker, "Geology and Underground Water of the Northern Llano Estacado" Bulletin No. 57, (Texas Bureau of Economic Geology, University of Texas, 1915), 60, 69; "Amarillo Area ThreadEx Station" records, National Climate Data Center (hereafter, AMA-NCAR); Entry for December 1891, Francisco Miera Diary, private collection of Mr. Albert Gallegos, Santa Fe, NM, n.p.

abrupt changes between wet and dry patterns, along with the occasional storm event or especially strong "summer monsoon" like those in 1875, 1912 and 1921, or vigorous storm systems such as the one that left over four inches of rain at the Bell headquarters and six inches at Las Vegas on September 29-30, 1904. The Bell Ranch observer commented at the time that, "all streams and creeks are up" and flooding. In general, the region's winters were colder during this transition period and had greater precipitation than after the 1920s. Accounts from area newspapers report people at Tascosa cutting ice from the Canadian, and in the 1890s Amarillo dropped below zero F at least once every winter, something that became less common in the early twentieth century. The entire Southwest appears to have experienced a period of unusually variable precipitation during the late 1800s, according to several climate researchers, as the track of the high altitude winds that steered storms out of the Pacific and contributed to the presence or absence of moisture from the Gulf of California and Gulf of Mexico began changing and moving northwards.[24]

This pattern began shifting to drier winters in the late 1860s, following the decade-long drought of the 1850s – early 1860s. The 1870s, as noted earlier, were relatively wet. The Las Vegas weather record noted that the town received 8.2 inches (207 mm) of rain in July 1875, 2.8 inches (69.9 mm) in August and a September record of 8.1 inches (205.7 mm), quite probably sending high water down the Canadian and Pecos rivers. Snowmelt in June also caused large

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[24] Robert C. Balling, Jr. and Stephen G. Wells. "Historical Rainfall Patterns and Arroyo Activity within the Zuni River Drainage Basin, New Mexico," *Annals of the Association of American Geographers* 80, No.4 (Dec. 1990), 613-614, 617; Celine Herwijer, Richard Seager, Edward R. Cook and Julien Emile-Geay, "North American Droughts of the Last Millennium from a Grided Network of Tree-Ring Data," *Journal of Climate* 20, No. 7, (April 2007), 1354, 1371; Daniel R. Cayan and Robert H. Webb, "El Niño/ Southern Oscillation and Streamflow in the Western United States" in Diaz and Markgraf, *El Niño,* 57, 59; Tascosa (TX) *Pioneer* September 15, 1886, Sept 22, 1886; September 30, 1904, Bell Ranch weather report, RRVC, CSWR; Amarillo ThreadEx Weather Report, 1892-1940, AMA-NCAR.

rises of the Canadian and the Pecos. However, the time of year when precipitation reached the Canadian Valley was changing. Winter precipitation events, those occurring between October 1 and March 30, declined across the area between 1892 and 1940, while the number of intense summer rainfall events (those greater than 0.25 inches or 12.7 mm) remained steady, allowing for frequency differences between drought and wet years. The number of "low intensity" rainfall events, those between a "trace" and 12.6 mm/0.24 inches, also declined after the 1890s. In contrast, temperatures remained comparatively cooler in winter and summer, although summers could still be hot, with highs in the 90s and occasionally the 100s (35-40 degrees C). These changes in rain and snowfall affected the plant life and landscape around the Canadian River, leading eventually to modifications in the river itself.[25]

Varying precipitation patterns altered the physical and botanical landscape of the High Plains and Canadian Valley. A decrease in winter precipitation would favor warm-season plants (grasses such as buffalo grass that start growing later in the spring), over cool-season varieties such as Kentucky blue grass. This was because there would be less water available in the soil at the time that cool-season grasses needed it for early growth and germination and more moisture available for the later starters. In time, the botanical composition of the area would shift, although the majority of plants in the watershed were already warm-season varieties so the change would not be as noticeable as if it took place farther east in a mixed-grass or tall-grass environment. Range fires, somewhat frequent in the High Plains, would be more common and possibly more intense because of the drier vegetation. Aeolian (wind) erosion of the soil in spring would also increase, although vernal dust storms were part of life in the area before the

[25] Balling, Jr. and Wells, "Arroyo Activity," 610; XIT Ranch Monthly Division Reports, 1891, 1892, June 1893 Escarbada and Spring Lake Divisions," XIT Ranch Collection, PPHM; See Appendix C for methodology and graphs.

pastores and ranchers entered the region. In addition, more rain falling in a shorter period of time meant greater water erosion, especially in the spring while plants were dormant or after a dry spell when the grasses and plants had died, leaving more bare ground and reducing the amount of water that would soak into the soil. This increased run-off would have eroded any bare ground and deepened arroyos, particularly in years such as 1877-79 and again in 1919-1920, when intense rains followed long, severe drought. Streams carried this sediment into the Canadian River. But since the total volume of water in the river did not increase to match the greater load of silt and sand, the river regained its energy balance by depositing the sediment in the channel, growing shallower and wider as the channel aggraded (built up). This matches the pattern described by Ynocencio Romero: a deep narrow stream at the end of a period of down-cutting that then shifted back into a broad, sandy and intermittent channel as the volume of sediment flowing into the system increased due to upland and riverbank erosion caused by a combination of changing precipitation patterns and heavy grazing by cattle.[26]

One positive aspect of this cycle of erosion and sedimentation for landowners was this: it would eventually slow the erosion of tributaries and arroyos because of Playfair's Law, which states that a tributary will not cut lower than its main trunk stream. Decreasing winter precipitation in the highlands to the west would also have changed the timing and intensity of the Canadian's spring flood, although increased summer storms might have balanced this by replacing snowmelt with thunderstorm rain. Whatever was going on, the river remained as

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[26] Schumm and Lichty, "Channel Widening," 79; Rosgen, *Applied River Morphology*, 2-1, 2-2; James C. Malin "Dust Storms Part 1, 1850-1860" *Kansas Historical Quarterly* 14, No. 2 (May 1946), 129-130, 142; Balling and Wells, "Arroyo Formation," 615, 617; Stahle and Cleveland, "Texas Drought History," 64; J.C. Studer to C. Boone McClure August 23, 1945, Folder 1, Manuscript Collection, PPHM, 1. For another example of varied memories of a plains river see: W. Carter Johnson and Susan E. Boettcher, "The Presettlement Platte: Wooded or Prairie River?" *Great Plains Research* 10, No. 1, (2000).

unpredictable and treacherous as ever, and accounts from the early 20th century describe homesteaders having to wait weeks for the river to sink low enough that they could risk fording it, and even then the quicksand and current remained a hazard. And the ranchers in the watershed had to deal with the results of these changes, even if they were not guilty of permitting overgrazing.[27]

These weather shifts strongly affected a land and plant-dependent industry such as ranching. The short grasses retained more nutrients if there were no rains after the first frost, a plus for ranchers but one that did not balance the loss of winter water supplies. The records of the XIT Ranch include numerous comments about the problems with fall and winter rains washing the "goodness" out of the grass, so that cattle ate but did not prosper. Rain falling on frost-dormant grass leached nutrients out of the cured leaves and stems so that the plants provided roughage but little protein. Spring complaints included "grass poor – needs rain," "cold rains causing loss in calves" as newborn calves suffered from hypothermia, and cattle bogging in the mud around streams and water holes. Cold winters were also a mixed blessing that meant there was no risk of Texas fever but that also caused cattle deaths and led to calls for supplementing the grass with cottonseed cake and hay. Aside from references to cowboys drowning and the need to hire a guide to cross the Canadian after a flood, ranchers in New Mexico and Texas did not record any observations about changes in the river such as Ynocencio Romero described.[28]

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[27] Rosgen, *Applied River Morphology,* 2-1, 2-2; Mrs. Mae Tubbs Dolcaster to Morris Dalby, January 1, 1948, in Ms/Int "Dalby, Morris," PPHM, 3, 5; "Local News: Hudson," *Tucumcari* (NM) *Sun*, June 4, 1915.

[28] Vallentine, *Grazing Management,* 125; XIT Monthly Division Manager Reports: Spring Lake, October 1895, Buffalo Springs, January 1896, Spring Lake January 1896; Martha Downer Ellis, *Bell Ranch Recollections and Memories* (Amarillo: Trafton and Autry Printers, Inc., 1985), 29,

Romero failed to describe one intentional change to the river that his father caused and that may have contributed to Casimero Romero's decision to leave what was left of Tascosa town. In 1893 an oxbow bend developed in the Canadian just upstream of Tascosa. The river's new course threatened several pastures, including Romero's hay meadow and some of Jes Jenkins' property. Jenkins, along with Tascosa residents John Cone and Casimero Romero, decided to help the river return to its proper course by digging a cut-off across the top of the oxbow, through a hay-meadow belonging to the LS Ranch. The furious manager of the ranch got an injunction against the ditch, but only after two weeks of work had been done. As the three would-be engineers had hoped, the regional "equinoctial storm" of September 1893 caused the river to rise and the Canadian took the cut-off. The high waters also carried off the railroad bridge upstream, part of the Tascosa wagon bridge, collapsed seventeen houses in Tascosa and "made a great sandbar out of land which formerly had carried knee-high grass and shrubs." What became of Romero and Jenkins' property was not recorded, nor were the remarks of those who assisted the river in its work. Once again, the stochastic stream changed form, with a little acceleration from humans.[29]

Because of when Ynocencio Romero began his observations of the river, he may have interpreted the Canadian's reversion to a depositing river as abnormal and caused by cattle, since the animals had very visible effects on the riparian environment. However, it is more probable

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42; "Statement of Account: Tyng" Voucher 1, May 10, 1897 in Francklyn Land and Cattle Company, Box 7, Folder 69-73, D. 36 3715, PPHM.

[29] John L. McCarty, *Maverick Town: the Story of Old Tascosa* Enlarged Edition, (Norman: University of Oklahoma Press, 1968), 249-251. For a detailed example of the power of floods on river channels and the subsequent long-term changes, see Schumm, S. A. and R. W. Lichty, "Channel Widening and Flood-Plain construction along Cimarron River in Southwestern Kansas," and Jeffrey A. VanLooey and Charles W. Martin, "Channel and Vegetation Changes on the Cimarron River, Southwestern Kansas, 1953-2001."

that the combination of grazing in the valley and uplands and the changing weather patterns described earlier accelerated the cycle of erosion and deposition and physically altered parts of the Canadian and its tributaries, especially those reaches in Texas. Why Texas? For one, observers there reported the changes, so they are known. Secondly, the Canadian at the Angosturas (downstream of the Conchas confluence) and at the Ute Creek and Revuelto Creek confluences flows over bedrock, making those stretches of the river less susceptible to bed changes and providing less material for the river to carry away, while the narrow confines of the inner valley at these places also reduce easily-observable alterations to the channel. Third, the sandhills downstream of the mouth of Ute Creek provided more sediment to mobilize into the stream, as do the sandstones of the Permian rocks exposed in Texas.

A fourth reason is that timber cutting in Texas produced more obvious results, because there were relatively more trees to cut, at least at first. The Anglo-Texans, like their predecessors in the valley, used the timber and riparian vegetation, but on a much greater scale, while intensive grazing on the uplands led to the spread of brush over the grasslands and Breaks. The fence posts, logs for corrals and dug-outs, firewood and most other wooden products came from within the Canadian Breaks and Palo Duro Canyon at first, while there was still a little standing timber. Photographs taken on the LX, LS, and XIT ranches before 1895 show a treeless, grassy valley, with a few cultivated cottonwoods to mark places like Tascosa or a ranch division headquarters. One descendent of an XIT resident recalls stories of how the cowboys would ride along with the flood waters, roping timbers and bridge materials that washed away because the pieces were too rare and valuable to lose. With the decline in timber came the end of the beaver, already on the margin of their range. Beaver ponds served as buffers, trapping and slowing run off after storms, and their loss would have added more sediment and surges of erosive water to

the streams and ultimately to the Canadian. New Mexican ranchers cut their wood from the edge of the Llano Estacado, or bought it from the (relatively) near-by Rocky Mountain saw mills. However, their lack of riparian woodlands did not spare the New Mexicans from the law of unintended consequences. [30]

Instead of channel changes, New Mexican ranchers had another, equally unintended, consequence to deal with. While the Canadian Valley residents in Texas dodged quicksand and drought, New Mexicans had to deal with the expansion of mesquite. Mesquite is a tough, thorny variety of locust tree. It produces sweet tasting and nutritious seeds and seedpods that cattle eat, especially during droughts when other forage is unavailable, and then carry with them to leave elsewhere (along with a moist pat of fertilizer). Fire, formerly common in the High Plains, destroyed mesquite seedlings and helped confine the brush to watercourses and other sheltered habitats, while the suppression of fire and the consumption of the seedpods by cattle assisted mesquite's spread. In addition, mature mesquite trees produce an herbicide that suppresses other plants within the spread of the tree's roots, roots that can extend fifteen feet (five meters) from the base of the trunk. The resulting brush provides less food and adversely affects species diversity, while the bare ground erodes more easily despite the thick mesquite roots below the surface. After the 1910s, New Mexican ranchers would find their pastures succumbing to mesquite invasions, forcing the landowners to begin increasingly expensive efforts at brush

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[30] The author counted the logs in the Leigh Dyer cabin at the Panhandle Plains Historical Museum and estimated at least 90 mature cottonwood or hackberry trees were required for the walls alone; McCarty, facing pages 130-131; Carlson, *Woolybacks*, 86; M. Ellis, *Bell Ranch Recollections,* 105; Mrs. Carol Nichols, personal interview, July 12, 2009; Dietland Müller and Lixing Sun, *The Beaver: Natural History of a Wetlands Engineer* (Ithaca, NY: Cornell University Press, 2003), 167; J. Evetts Haley *The XIT Ranch of Texas and the Early Days of the Llano Estacado*, New Edition (Norman: University of Oklahoma Press, 1953), facing page 114;

control. As this native expanded its domain, other native species retreated from the Canadian Valley.[31]

Wild animal and bird populations declined as a result of hunting and habitat loss. Sightings of the last bison to venture into the Panhandle from No Man's Land in 1887 caused a flurry of excitement at Tascosa and several men went up to kill the animals. Elk also vanished, hunted and out-competed by the herds of cattle. Cowboys (and at least one rancher's daughter) with more nerve than sense roped black bears in the Canadian Valley until the early1910s. Unlike their predecessors, Anglo-Texans hunted waterfowl as well as wild turkey and prairie chickens, causing numbers of those birds to decline, although there were still enough birds on the uplands that homesteaders in New Mexico counted on prairie chickens for food in the early 1900s. As late as 1925, the Division manager of the Matador's Alamositas Division wrote rather grumpily about "Murdo McKenzie and friends" staying for a week to hunt deer and quail. Less desirable creatures such as prairie dogs, wolves and coyotes attracted the ire of ranch managers, who paid cowboys bonuses for killing lobos, or hired professional "wolvers" to trap, poison and hunt the wolves with dogs, while setting out poison for the rodents. Deer numbers also declined, although deer never completely died out in the Canadian Valley. [32]

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[31] Ken E. Rogers, *The Magnificent Mesquite* (Austin: University of Texas Press, 2000), 23, 48, 55; New Mexico Range Brush and Weed Control Technical Committee, "Mesquite Control in New Mexico," USDA/ NM State University Cooperative Extension Service, May 1983, 2; Steven Archer, "Woody Plant encroachment into Southwestern Grasslands and Savannas: Rates, Patterns and Proximate Causes" in *Ecological Implications of Livestock Herbivory in the West* ed. Martin Vavra (Denver: Society for Range Management, 1994), 40, 55.

[32] William Temple Hornaday, *The Extermination of the American Bison* (Washington D.C.: Smithsonian Institution Press, 2002; reprint of *1889 Annual Report to the board of Regents of the Smithsonian Institution* Washington D.C, 1890), 523; *Tascosa* (TX) *Pioneer*, October 18, 1890; O'Donel to Greenough, April 1, 1899, MSS 86 BC Box 29, RRVCo Records 1865-1947, RRVC, CSWR; Ira Aten, Escarbada Division, April 1897 report, "Division Manager Monthly Reports" XIT Collection, PPHM; John Erickson, *Through Time and the Valley* (Ft. Worth: University of

The hunters' paradise W.S. Mabry described so fondly in 1873 almost disappeared, although some things remained the same. Two of those things about the Canadian River that did not change were its infamous quicksand, which remained a trap for the tired, unwary and impatient, and that the river remained too unpredictable to use for irrigation in those places flat enough to irrigate. Cowboys and teamsters regarded the Canadian with a very healthy respect because of its unpredictability. Assistant Bell Ranch manager "Jack" Culley observed that the Canadian still had a "reputation for sudden alterations of complete dryness and flood" during the 1890s and early 1900s. He recalled the plight of two cowboys who in 1904 or 1905 ventured into the river and got caught on a sandbar as the water rose around them, forcing them to risk both high water and quicksand. What looked like dangerous quicksand at least once proved to be solid and safe to cross. At other times a rider would be half way across the stream and feel his horse begin sinking and struggling in the thick mix of fine sand, silt and water. If the stream was high, drowning was a strong possibility.[33]

The Canadian could also capture vehicles, as mentioned in the tale of the district attorney and judge at Tascosa. Despite the stream's capricious flows, attempts to make use of the Canadian's water for irrigation began at least by the 1880s. These efforts were without much success; several small diversion dams on the Bell Ranch's stretches of the Canadian disappeared downstream when floodwaters ripped them out and ruined the headgates on the irrigation ditches. The Hispano residents, like the Antelope Creek people before them, made use of the

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North Texas Press, 1995), 66; December 6-10, 1925, Alamositas Division Ranch Manager Diary, Folder 2, Box, 2, Alamositas Division, Matador Land and Cattle Company Collection, SWC/SCL, TTU.

[33] Remley, *Bell Ranch,* 69, 121; Culley, *Cattle, Horses and Men,* 17, 80.

tributaries but never tried to domesticate the main stream. It was too big, too unpredictable and too salty and silty to use well.[34]

The first marginally successful private irrigation effort came in 1911, after the Matador Ranch bought the XIT's river pasture in the Escarbada and Rita Blanco/Alamositas Divisions. A modest diversion irrigated sorghum and alfalfa within the inner river valley. The Matador diversion did not endure and it may have been washed away or at least heavily damaged in floods like the one in 1923. Most of the ground within the Canadian Valley in Texas was too rough, broken and rolling to irrigate without a great deal of effort at leveling and otherwise modifying the land, despite the dreams of developers. Farther west, the wider, flat area south of the Canadian between Ute Creek and Pajarito Creek seemed much more promising and after 1900 a number of proposals for irrigation were devised. However, the river remained untamed and "useless" for other than watering livestock, seemingly impervious to attempts at "improving" the stream. Ranchers, even those with riverfront land and water rights, turned to other sources of water as soon as they had the cash and technology to do so.[35]

Ranchers in Texas and the owners of the Bell Ranch turned to machines and new devices to use to improve their investments, for example fencing in the land as soon as posts and barbed wire became available. Technology could alleviate or moderate some of the effects of the changing weather for those who owned or leased their grazing land and had the financial resources to drill or dig wells, build fences and rotate their pastures. The Frying Pan and JA ranches were two of the first in the United States to use barbed wire, in part because William

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[34] Remley, *Bell Ranch,* 121.

[35] William M Pearce, *The Matador Land and Cattle Company* (Norman: University of Oklahoma Press, 1964), 153; author's observations, May 2009 and September 2009.

Bush, owner of the Frying Pan (now northwest Amarillo), was the business partner and son-in-law of Joseph Glidden, the creator of the first inexpensive barbed wire. Ranch managers next augmented their available surface water by building artificial lakes called "tanks" in low areas and putting check-dams in arroyos and stream channels to catch rainwater. Windmill technology soon followed, and those who could afford it hired well diggers and drillers to tap the available underground water. The wells varied in depth from as few as 30 or 40 feet (9 – 12 m) in "shallow water" areas such as the XIT's southern divisions, to almost 225 feet (68.6 m) in some later wells. Early wells depended on horse-power or cowboy-power to pump the water up to the surface while later units used the iconic fan and wooden derrick that now symbolize the American west. The wind turned the wooden or metal-bladed fan. A set of gears transferred this rotary motion to a long rod contained within a metal pipe. The rod moved up and down, opening and closing a pair of ball valves and pulling water out of the well and gradually pumping it up to the surface. Once there the water flowed into an earthen, wooden or metal holding tank and supplied cattle, horses, wildlife, and the occasional cowboy with drinking water. As long as the wind blew and nothing was wrong with the fan, the gearbox, the "leathers" and the ball valve that kept the water from flowing back into the well, or the casing pipe, the system worked very well.[36]

Although a major improvement over rain-dependent playas and dirt tanks and check dams on washes and arroyos, windmills did not solve all problems. J. R. Armstrong, of the Middlewater division of the XIT, complained in July 1897 that the lack of wind meant that the

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[36] Donald E. Green, *Land of Underground Rain* (Austin: University of Texas Press, 1973) gives the complete history of irrigation on the Llano; Walter Prescott Webb, *The Great Plains* (1931; repr., Lincoln: University of Nebraska Press, 1981), 240, 338; "Schedule C – Water" in 1896 Ranch Manager Report, XIT Collection, PPHM; John R. Erickson, *The Modern Cowboy* (Lincoln: University of Nebraska Press, 1981), 165.

mills pumped no water while all the rain-fed sources were going dry from the heat and lack of rain caused (although he couldn't have known it) by a stable high-pressure airmass dominating the region's weather. The mills also had to be greased and repaired and inspected periodically, tasks many cowboys found uncongenial. Those ranchers who did not own their land, either leasing in Texas or squatting on federal land in New Mexico, ran the risk of losing their investment if someone homesteaded the 160 acres containing the windmill. Ranchers in the territory once again complained bitterly about not being allowed to lease and about having to tear down drift fences. The federal regulations made no mention of tearing down the windmills, however. Compared to the trials and tribulations of quicksand and windmills, weather shifts probably passed unnoticed. Even as technology made some things more secure, other forces were at work in the Canadian watershed, accelerating the process of cultural and economic differentiation that had begun with the declaration of the Texas-New Mexico border.[37]

The differences in land ownership and social culture on either side of the Texas-New Mexico border meant that in some ways the two halves of the valley developed differently. The Panhandle, blessed with hard winters and secure land tenure, developed towns and a western-flavored society different from that found in other, more culturally Southern parts of Texas. At the same time, New Mexican settlements remained at best sparse, and development was hindered by distances, by conflicts that spilled over from the *Gorra Blancas* and the Lincoln County War to the south of the Canadian watershed, and by the vagaries of weather and the national economy. Some early settlements, such as Gallegos on Ute Creek, were company towns where residents worked for, or otherwise supported, the community's founders and leaders, while

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[37] J. R. Armstrong, "Monthly Division Report 1897," XIT Collection, PPHM; author observation, summer 1998; Remly, *Bell Ranch,* 189; Paul H. Carlson, *Empire Builder of the Texas Panhandle: William Henry Bush* (College Station: Texas A&M University Press, 1996), 13; "Affairs in New Mexico" *Texas Farm and Stock Journal* February 14, 1900, 1.

others were homes for small clusters of Hispano residences. The hamlet of Liberty came into being shortly after the founding of Ft. Bascom as a place where soldiers on leave ("liberty") could go shopping and purchase liquor. The community remained after the fort's closing and served as a regional post office, general store, and shipping point for local ranchers. Endee, another early settlement, developed when the owners of the ND Ranch opened a store and post office at the ranch headquarters in 1885. Clayton (1888) and Folsom (originally Mexican Town, then Capulin, 1883), on the Dry Cimarron, were railroad towns and shipping points. Because the iron road reached northeastern New Mexico so slowly, homesteaders also arrived slowly, because they needed a way to market their farm products; wheat, cotton and sorghum could not reach market under their own power.[38]

Despite the rise of small settlements, the area remained generally sparsely settled and Hispanos, including members of the Gallegos family, retained economic and political prominence in Union County, while herds of cattle roamed the (mostly) open range. Luis B. Gallegos, the younger brother of Ernesto and Francisco, served as sheriff of Union County and upon his death in 1897 was succeeded in the post by his nephew Emiterio, Francisco's son. Farther south, on the Caprock Plateau, a surge of Texan and other Southern settlers to the better-watered area led to the creation of an Anglo-dominated "Little Texas," although ranching remained the main economic activity. Not until after 1902, when a branch of the Atchison, Topeka and Santa Fe railroad entered from Dalhart in the northwest Texas Panhandle, and another Santa Fe division began building west from Amarillo and Vega, Texas, would

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[38] W. Thedford LaVines, "A History of Union County, New Mexico" (master's thesis, University of New Mexico, 1946), 56, 60, 62; M. Clark, *Mark of Time,* 71,92; Robert Julyan, *The Place Names of New Mexico,* Revised Edition (Albuquerque: University of New Mexico Press, 1998), 87, 124, 133, 203.

homesteaders truly begin making the Canadian watershed their home. What the Canadian valley had been for pre-Anglo commerce, the railroads would be for the Anglo-American period.[39]

Railroads brought settlers and commerce to the Texas Panhandle, and the Canadian River brought frustration to railroad engineers and construction crews. Although the state of Texas had assigned land in the Panhandle to several railroad companies, including the ambitiously-named "Houston and Great-Northern Railroad," it was the Fort Worth and Denver City Railroad that first reached the Canadian valley at the site of the spring-fed Wild Horse Lake, the site of modern Amarillo, in 1888.[40]

Amarillo quickly became a shipping point and market point as ranchers sent their cattle to Kansas City, Chicago and eventually to Denver as well by rail. Instead of freight wagons bringing supplies from Fort Worth or Dodge City, railroad cars traveled back and forth to Ft. Worth with everything from lumber to books to bed sheets, and people. The *Stockman's Journal*, the regional trade paper for farmers and ranchers in Texas, eastern New Mexico and the Indian Territory (future Oklahoma), listed the ranchers, businessmen and other people of interest who traveled to Ft. Worth to conduct business, to shop or on their way to more exotic destinations.[41]

In 1888 the Ft. Worth and Denver Rail Road crossed the Canadian River at Cheyenne, a location four miles west of Tascosa, running tracks through the XIT and LS ranches. The bridge lasted until September 1893, when a flood carried part of the span away and smashed it into the

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[39] "Francisco Gallegos" author unknown, biographical pamphlet in Albert Gallegos private collection.

[40] Lester Fields Sheffy, *The Francklyn Land and Cattle Company: A Panhandle Enterprise 1882-1957* (Austin: University of Texas Press, 1963), 5; Nolan, *Tascosa,* 237, 259.

[41] (Ft. Worth) *Texas Livestock Journal* September 12, December 26 1891 for examples of the ranchers' society pages.

wagon bridge at Tascosa, which also washed downstream. Eventually, engineers would dig almost 80 feet (24.34 m) below the river's bed to find solid ground for bridge footings after several more wash-aways. Wood for the railroads came at first from the Breaks, but was soon replaced with materials from New Mexico and Colorado. Sparks from trains sometimes caused grass fires, making the railroads a mixed-blessing for ranches that they passed through. In 1895 Amarillo city leaders approached more railroads, trying to interest them in building to the city, and by 1900 the city could claim three roads: the Fort Worth and Denver, the Atchison, Topeka and Santa Fe, and the Pecos Valley lines. But high water and snowdrifts still caused problems well into the twentieth century.[42]

The railroads also brought stock-farmers beginning in the late 1890s. These were people who combined raising crops for domestic use, such as garden produce, with growing fodder and raising a small herd of cattle, or growing pigs. The *Texas Stock and Farm Journal*, as part of its efforts to encourage settlement and expansion of small ranches and farms, encouraged "stock farming," growing garden truck and drought-resistant grains such as sorghum and "kaffir corn," as well as winter wheat, and raising purebred cattle. This diversified family farming would provide residents with the ability to survive even if the wheat failed. As the editor of the *Stock and Farm Journal* proclaimed over and over, diversification or "safety first agriculture" was the key to surviving on limited land with limited resources. The cattle grazed native grasses in spring, summer and fall, then ate the sorghum, Timothy hay and other fodder in winter. Garden crops provided for the family and excess could be preserved or sold in town along with the cattle in order to obtain cash to pay land taxes and the mortgage and to buy anything not made at home.

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[42] Paul H. Carlson, *Amarillo: The Story of a Western Town* (Lubbock: Texas Tech University Press, 2006), 53-54.

If a family could bring in some wheat, corn or cotton for more cash, that was good, but survival was the first priority. These small stockmen were the people who bought land from the state of Texas or from the surviving cattle companies.[43]

Many of the big ranches' official names included the words "Land and Cattle Company," and even pioneer ranchers such as Charles Goodnight believed that the area should be settled, and would be settled, by farmers at some point. The more humid eastern part of the region attracted farmers first, while others came up the railroad tracks to settle at the Methodist Colony of Clarendon (also known as Saints' Roost). The drought of the early 1890s pushed the line of settlement back towards more humid lands, but a slow trickle of new arrivals continued. The ranchers seem to have grumbled, especially in 1893 when the state of Texas sued many of the ranches for grazing cattle on state land without paying rent, but generally they accepted the situation. Dr. O. H. Loyd, a promoter and booster for Oldham County in the early 1900s, claimed that ranchers had deliberately driven off potential farmers and residents in order to protect their land, a claim the historian J. Evetts Haley called "probably exaggerated" and "subject to discount," especially in light of how much of Oldham County consisted of land too rough to farm. The ranchers did not have to warn off "nesters" because the climate did that to an extent, and while cowboys did warn newcomers not to burn the grass or use woodstoves during high winds, reports of rumors of violence and intimidation seem excessive. The drag on settlement came instead from the national economic depression following the Panic of 1893 and the effects of a four-year drought.[44]

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[43] "The Texas Panhandle" *Texas Stock and Farm Journal* December 6, 1895.

[44] Haley, *Goodnight*, 360; O.H. Loyd to J.E. Haley, June 30, 1926, Ms/Int Oldham County Loyd, O.H., PPHM.

Despite drought and the poor economy, land company managers and agents continued encouraging immigration to the High Plains. The Francklyn Land and Cattle Company, better known as the White Deer L&CC, tried to attract land-hungry farmers by continually advertising the large wheat harvests that it shipped. Not to be outdone, the XIT also advertised the possibilities of farming the High Plains, experimenting with trees and garden truck as early as 1887. The Capitol Syndicate brought in experts from Texas A&M to start an experimental farm at the company town of Channing. The main office of Hereford Home High-Bred Herefords was also located in Channing, providing one-stop-shopping for those interested in the area's products and possibilities. Crops tried on the XIT farms included: wheat, sorghums, oats, maize, and millet, along with watermelons, onions, cabbage, beets, tomatoes, potatoes, turnips, muskmelon, squash, beans, peas, radishes, cucumbers, cauliflower, and even citron. Many of the more exotic vegetables were tried once and fail to re-appear in the XIT's Annual Business Reports because they either failed to produce a good crop or because they required more labor and faster distribution to distant markets than was then available. However, small grains fared well, as did watermelons, potatoes and radishes. One suspects that some Division managers preferred certain vegetables, because they last longer in one farm's reports than in other Divisions' accounts. The citron, an exotic bush that produced fruit used in candied peel, did not survive from 1888 to 1889, and one wonders if it was included simply on a whim, or in hopes of advertising that "even citron will grow here!" Most of the new settlers preferred to stay with more conventional crops, including winter wheat.[45]

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[45] "Panhandle Real Estate Journal (n.p., n.d.) in Voucher 4 "Advertising" George Tyng Statement of Account Nos. 47-49, Francklyn D 3a 3715 Box 6 of 32, Francklyn Land and Cattle Company, PPHM; John Farwell to Chairman and Board of Directors, October 31, 1887, 9, in "XIT Annual Business Reports 1887, 1888-1890," XIT Collection, PPHM; XIT Annual Report 1891, (n.p.) Folder E6, "XIT Annual Business Reports 1891-1897," XIT Collection, PPHM.

As railroads reached the Canadian Valley and its watershed, the large ranches gave way to dryland stock farming and the population increased, first in Texas and then after 1901 in New Mexico when railroads entered that part of the watershed. The Capitol Lands Syndicate's experimental farm suggested that, at least in Texas, dry farming could work, and companies including the XIT and White Deer Land and Cattle Company in the east-central Panhandle advertised to farmers to come and purchase land. Even the owner of the Bell Ranch considered selling to farmers, although Arthur Tisdell and his successor Charles O'Donel counseled against it. The land was too rough to farm well, and even drier than Texas, so plowing it up would be counterproductive at best. The same held true for the Canadian Valley in general, although some promoters dreamed of turning it into an orchard capable of supplying pears, apples, peaches, apricots and other tree fruits to the area and beyond. While the land around the Canadian breaks began filling in, slowly, the valley remained rangeland, even in Texas. But the open range days were coming to a close in New Mexico as the iron roads pushed into the eastern part of the Territory and home seekers turned to some of the last unclaimed land. As early as 1891 the XIT sold off less desirable land to settlers and farmers, but the "rush" began after 1896 and grew steadily until a surge of hopeful farmers washed into the lands around Ute Creek and the New Mexican stretch of the Canadian. [46]

The "river of cattle" left its mark on the historical landscape. First, individuals and then corporations brought domestic cattle onto the High Plains, replacing the bison and sheep that had grazed the short grasses and rich valley bottoms. The Canadian Valley and its uplands were divided into state and territory, then into individual ranches as Anglo-American traditions and

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[46] Haley, *XIT*, 209-210; Arthur Tisdell to John Brown Potter, November 4, 1893 in RRVC - CSWR.

business practices replaced the Hispano traditions. Some of the earlier residents remained, but cattle became king, at least in Texas.

New Mexico remained open range around islands of private property such as that owned by the Gallegos family and the Bell Ranch. The river rose and dwindled, shifting its shape in places as drought, changing precipitation patterns and intense grazing altered how water entered the river, when it arrived, and how much sand and soil that it carried. International financial crises, including the Panic of 1893, slowed settlement and caused difficulties for men and women trying to make a living by raising and selling cattle. Some wondered how much the retaliatory tariff the German government applied to U.S. meats would affect the already staggering market, while others worried more about the increasing attention paid by the federal government to the use and abuse of the range in the New Mexico territory.

Even in New Mexico, the open range days were ending by 1900 as home seekers and land promoters eyed the "empty" eastern third of the territory, while the great ranches of Texas broke apart, selling the grass 160 to 640 and more acres at a time. Cattle would never leave the Canadian watershed, but the railroad and plow marched in from the east and south, bringing more changes and divisions, and a new sort of unity, to the region. With dry land farmers came dreams of irrigation and another change in the dominant precipitation pattern, one that would contribute to the settlement of the region, the increasing calls to tame the Canadian, and eventually the arrival of the federal government's river control experts with plans to manage the stream. Between 1903 and 1938, the river of cattle became a river of plows and papers.

Chapter 10: River of Plows - River of Paper

Despite the plans and dreams of the residents of the Canadian watershed, it was not until the 1930s that the river was brought "under control," and then only with the assistance of the federal government. Newly-arrived farmers wanted the river's waters tamed to irrigate with, while regional boosters dreamed of tourist lakes, blooming deserts and fat cattle, despite the ever present threats of drought. It seemed so simple on paper – build a dam or three, then dig canals to take the water to where it was wanted. However, topography, climate, politics, and a corporation that did not want to lose its best pastures, all combined to turn a simple engineering project into a regional soap opera involving people ranging from café waiters in Amarillo to the governor of New Mexico and U.S. president Franklin D. Roosevelt.

It is easy to imagine New Mexico Governor Clyde K. Tingley's eyes snapping with frustration on October 9, 1935 as he spoke with Lyle T. Alverson, Director of the National Emergency Council. Tingley had called in favors from regional residents, state officials and even President Roosevelt himself in order to secure funding for the governor's special project. This dam was to be the near-salvation of the drought-stricken eastern plains, something residents of the tri-state region had discussed and planned, hoped for and promoted for many years. The governor had pledged to raise as much local money as possible before drawing on the funds that Roosevelt had promised, and last thing Tingley wanted was to have word leak out about federal funds becoming available for the purchase of the right-of-way around the proposed Conchas Dam site. But Tucumcari farmer, businessman, and regional promoter Arch Hurley had spilled the beans! "I could have cut that [federal amount] down if he had kept quiet. I was going to Amarillo tonight to raise the money through the Chamber of Commerce, but now Hurley has put

me on the spot. I would have got ten thousand more out of Amarillo if he had kept quiet." Tingley added that "Captain Kramer [of the Army Corps of Engineers] is going to call me tonight on long-distance and I will tell him to get hold of this fellow Hurley to keep his mouth shut."

Director Alverson cautioned the governor that, "We are not going to help unless you fellows do your darndest first."

"I am going to tell the newspapers that the people have got to put up so much money," Tingley assured Alverson. They were so close to buying out the Bell Ranch's interests and showing the federal government that the entire region supported the dam, and nothing was going to stop Governor Tingley now, not even the dam's most ardent proponent talking when he shouldn't have. Neither drought nor loudmouths would get in Clyde Tingley's way when the "partisan New Mexican" wanted something for his adopted state.[1]

By 1940 the Canadian River became a tool for regional development under the control of the federal and state governments via the Canadian River Commission and the Army Corps of Engineers. Governor Tingley, Arch N. Hurley of Tucumcari, Albert S. Stinnett of Amarillo and other men and women of the Canadian watershed were about to turn long dreams into reality – the Canadian would be controlled by a dam and harnessed to make the High Plains bloom. As farmers began moving into the Canadian River's drainage basin, more and more people began watching the unpredictable river's waters and contemplating schemes for regulating the flow while also diverting the water onto farmland. Despite dry years, failed industries and warnings from older residents, newcomers hoped to turn the Canadian valley into a prosperous "Nile

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[1] Transcribed conversation, October 9, 1935, Clyde Tingley papers, S/N 13102, Box 1, Folder 23, New Mexico State Record Center and Archive, Santa Fe, NM (hereafter NMSRCA); Suzanne Stamatov, "Tingley, Clyde" Biography for New Mexico Office of the State Historian, http://www.newmexicohistory.org/filedetails.php?fileID=498. Accessed 23 October 2009.

Valley" dotted with family farms, but drought in the 1910s and 1920s brought an end to homesteading in eastern New Mexico even before the Dust Bowl blew many of the remaining farmers east or west from the river valley. Meanwhile, development-minded residents took advantage of record-setting floods downstream in Oklahoma in 1923 to encourage efforts to apportion the stream's waters and control them.

The federal and interstate attention to the river became more intense when one of several attempts to preserve the region's economy and increase its population led to the construction of the first permanent dam on the Canadian in 1936-38. The closing of the gates at Conchas Dam in December 1938 altered the river's flow and geomorphology, as well as taking local control, such as it was, of the river away. A changed river flowed downstream of the dam, its salty and silty waters watched by U.S. Government personnel, a few farmers and tens of thousands of white-faced cattle, and the region entered a new period in its history.

After the mid 1890s a mixture of dryland farming and cattle raising came to dominate the economy and ecology of the High Plains in Texas and New Mexico, although population densities in the Canadian watershed stayed low compared to other, better-watered parts of the state and the territory. The combination of drought and hard winters, along with growing demand for fat, younger cattle, encouraged the diversification of ranching and farming into stock farming, while dryland farming techniques encouraged farmers to try growing wheat and sorghums on the High Plains. Smaller ranchers could overwinter cattle with greater success if they fed them, and African grains such as sorghum (including the kaffir corn and milo varieties) needed less water than did maize. Sweet sorghum arrived in the United States in 1857, and grain sorghum first appeared in 1838 in Georgia, from whence the grain spread into the Great Plains. By 1890 there were twenty-three varieties or sweet or grain sorghum available for farmers to

choose from. Sorghum could also be planted in spring if the winter wheat failed and still might provide enough grain to feed cattle or to sell to pig farmers or dairies, along with leaving some stubble for winter grazing. Members of the genus *Andropogonae* and distant relatives of the native big bluestem grass, sorghums throve in warm soil, lost less water to the summer winds, and could produce grain even if drought stunted their usual four to seven foot growth. In a pinch people could eat the "sweet" white varieties, although no one in the Panhandle seems to have been that desperate. This made the grain very well suited to the diversifying agriculture of the high plains in the early 20th century.[2]

After the financial panics and subsequent depressions, and after having witnessed the ebb of the first wave of farmers into the Panhandle in the early 1890s, George B. Loving, the editor of the widely-read *Texas Stock and Farm Journal,* editorialized about combining feed and ranching together as a way to succeed in the drier parts of the region. Month after month he railed against farmers who put all their agricultural "eggs" into one basket, proclaiming, "[t]hat the Panhandle is not strictly a farming country will be doubtless conceded by all whilst for stock farming and for raising a diversity of crops it is unexcelled."[3]

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[2] Clarissa T. Kimber, "Origins of Domesticated Sorghum and its Early Diffusion to India and China," in *Sorghum: Origin, History, Technology and Production* ed. C. Wayne Smith and R. A. Fredericksen, (New York: John Wiley and Sons, Inc., 2000), 13, 15; C. Wayne Smith and Richard R. Fredericksen, "History of Cultivar Development in the United States: From 'Memories of A. B. Maunder – Sorghum Breeder'" in *Sorghum*, 193, 194, 195; P.R. Carter, D.R. Hicks, E.S. Oplinger, J.D. Doll, L.G. Bundy, R.T. Schuler and B.J. Holmes, "Grain Sorghum (Milo)" www.hort.purdue.edu/newcrop/AFCM/sorghum.html. Sweet sorghums have less tannin than do grain sorghums and require less processing to be edible by humans.

[3] "The Texas Panhandle," *Texas Stock and Farm Journal* December 6, 1895; J. Evetts Haley, *The XIT Ranch of Texas and the Early Days of the Llano Estacado* (Norman: University of Oklahoma Press, 1953), 208; Garry L. Nall, "Panhandle Farming in the 'Golden Era' of American Agriculture," *Panhandle Plains Historical Review* Vol. 46, (1973), 88, 89.

New Mexican agriculture also became increasingly diversified, but more slowly than in Texas. The lands along the Pecos River to the west and south of the Canadian seemed the most suited to irrigation, and towns such as Carlsbad and Santa Rosa joined the older Hispano settlements and grew along with irrigation projects. Attempts were made to grow sugarbeets, melons, corn, garden truck, fruit and other high-value crops along with wheat to be sold in Albuquerque, Denver and other railroad hubs. Just west of the Pecos River in New Mexico, the discovery of artesian wells and springs added further hope for tapping the underground waters, but unlike the lands to the east and south, the Canadian Valley in New Mexico had neither artesian water from the mountains nor access to much of the Ogallala Aquifer. A few settlers along the Canadian's tributaries, including the Gallegos family, planted irrigated maize and garden produce for home use, but the lack of easily reachable markets and of funds for larger projects discouraged development. The fact that so few ranchers owned the land that they claimed and used also contributed to the slow arrival of full-time dry land farming to the area. It was not until after 1904, when the homesteaders arrived with the railroads, that breaking the sod for dry farming became common. After that, winter wheat, broomcorn, sorghums and alfalfa were tried with varying degrees of success.[4]

A severe drought lasting from 1904 until 1906 further hindered attempts to dry-farm eastern New Mexico and the western edge of the Texas Panhandle. The rains seemed to stop, or to come at the wrong times, after the spring crops had withered. The Bell Ranch, located at the junction of the Canadian and Conchas Rivers, recorded dry years from 1902 until November of 1904, then returned to a drier pattern until 1906. The Bell received only 8.7 inches (221.2 mm)

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[4] Stephen Bogner, *Ditches Across the Desert: Irrigation in the Lower Pecos Valley* (Lubbock: Texas Tech University Press, 2003), 182, 119-120; Nall, "Golden Era", 68.

of rain in 1902, followed by 13.9 inches (352.3 mm) and 16.3 inches (415 mm). The 22 inches (559 mm) reported for 1905 was deceptive: 5.24 inches (133.1 mm) of that precipitation fell in November, when the grass had stopped growing, and the water ran off the hardened and dry ground. Residents of Amarillo, 200 miles (322 km) east of the Bell Ranch, fared better in terms of rainfall, but that did not comfort the settlers trying to eek out a living in New Mexico Territory. It was obvious that agriculture would have to adapt to the recurrent droughts, and testing and experimentation with appropriate crops continued apace at state agricultural extension test farms and on some ranches.[5]

One example of the crop tests tried on the High Plains was the XIT Ranch farm and the division gardens. Each division was to have a farm for growing winter fodder and other crops. This served two purposes: it provided extra animal feed that did not have to be purchased and hauled by rail car and wagon-loads into the ranch, and it served as an advertisement for the fertility of the XIT lands. The initial farms were quite ambitious, with winter wheat, maize, oats, sorghums, watermelons, Persian melons, tomatoes, cucumbers, beets, radishes, lettuce, and even citron growing in carefully watched plots near the division headquarters. Not everything equally fared well and over the years that records exist, the selection of produce narrowed as the Syndicate farmers concentrated on raising animal food rather than people food, in large part because it was more cost-effective for the ranch to grow its own fodder while buying canned goods. The results of these tests proved encouraging and the region's promoters as well as the

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[5] "Precipitation – Bell Ranch – San Miguel County" in *Climatological Summary of New Mexico: Precipitation* Technical Report No. 6 (Santa Fe, NM: State Engineer's Office, 1956), 310 (henceforth "Precipitation-Bell Ranch"); "Yearly precipitation for Amarillo" www.srh.noaa.gov/ama.

land agents for the XIT and the railroads used them in their brochures and advertisements to show how productive the land could be if farmed correctly.[6]

By 1900 land sales and lease expirations were heralding the end of the large ranches in Texas. As described in the previous chapter, the Capitol Lands Syndicate and White Deer Land and Cattle Company/ Francklyn existed as ranches solely until they could sell off their lands at a profit for their stockholders, a process that accelerated after 1900. In 1899 the realtor J. E. Kettner sued Charles Rogan, then Texas Land Commissioner and C. C. Slaughter, the owner of the Slaughter Ranch in Lynn County, to force Rogan to sell land to him, land that was then under an expiring lease held by Slaughter. As a result of the 1902 Texas State Supreme Court decision *Ketner v. Rogan*, ranchers could no longer renew their state land leases prior to the five or six-year expiration date and were instead forced to compete with homesteaders interested in purchasing the state lands. Many ranches dissolved or, like the JA, their owners sold their alternating ("checkerboard") sections and shifted their holdings into smaller, more compact but unified parcels. In contrast to the JA, the core of which remained in the Adair-Ritchie family, the LS broke apart following the death of owner Charles Whitman in 1899. He had purchased the entire ranch from Julia Scott, his sister and Lucien Scott's wife, in 1893. Whitman's widow divided the ranch up in 1905, selling some to the Landergin Brothers of Amarillo, some to W.H. Gray of Chicago and the rest to Edward F. Swift of the Swift meatpacking company. Cornelius T. Herring later bought 100,000 acres (40,470 ha) of Swift's purchase along with the LS brand and passed them through his daughter to the Ware family of Amarillo. The LX of the American Pastoral Company survived until 1910 when Lee Bivins, Joseph Sneed and R. B. Masterson

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[6] John Farwell to Chairman and Board of Directors, October 31, 1887, 9, in "XIT Annual Business Reports 1887, 1888-1890," XIT Collection, PPHM; XIT Annual Report 1891, (n.p.) Folder E6, "XIT Annual Business Reports 1891-1897," XIT Collection, PPHM.

bought it. Bivins kept the brand after 1915. Bivins also purchased the LIT property from the Prairie Land and Cattle Company in 1908, forming a compact ranch along the Canadian that remained in the family into the next century. The Prairie Company sold its last U.S. property in 1914, one of several surviving British ranching companies that liquidated their holdings because of World War I. The Capitol Freehold Land and Cattle Company, Ltd, liquidated and paid off its stock and bondholders in 1915, although the Farwell family retained some interests in the area and held some of the former XIT acres. In contrast, the Bell Ranch in New Mexico and the Matador Land and Cattle Company kept their lands and continued in the ranching business.[7]

Some of the differences in land tenure described above can be ascribed to the difference in land ownership between Texas and New Mexico. The State of Texas owned all of its public lands and offered them for homestead, fee-simple purchase or lease. Although the laws changed over time, often with frustrating rapidity for those trying to secure titles, in general a person could file a 160 acre homestead claim and prove it up in three years, or could purchase designated "school land" for between $1.00 and $1.50 per acre depending on the classification of the land (grazing or farming), with the option to purchase up to 2,560 acres of additional 'school land' within five miles of the school land claim. Pasture land was also available for five year leases, with the option to renew the lease or to put the land on the market residing with the state Land Commissioner. In New Mexico, all land belonged to the federal government and was administered under the various homestead acts. No one individual could claim more than 160

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[7] Nolan, *Tascosa*, 262; W. Turrentine Jackson, "British Interests in the Range Cattle Industry" in Maurice Frink, W. Turrentine Jackson and Agnes Wright Spring, *When Grass Was King: Contributions to the Western Range Cattle Industry Study* (Boulder: University of Colorado Press, 1956), 303, 304, 305; "Ketner *Vs.* Rogan," 95 Tex 569, in *Southwestern Reporter* vol. 68, (St. Paul, MN: West Publishing Co, n.d.), 774-777; Carlson, *Amarillo*, 62; Pauline Durett Robertson and R. L. Robertson, *Cowman's Country: Fifty Frontier Ranches in the Texas Panhandle, 1876-1887* (Amarillo: Paramount Publishing Company, 1981), 114, 117.

acres, and leases were not allowed, nor were purchases in fee simple. These federal policies led to numerous counts of land fraud and seemingly endless frustration for ranchers and would-be farmers both.[8]

Around the ranch borders, increasing numbers of small stockmen and eager farmers bought, leased and homesteaded the land, hoping to make a living in this unfamiliar area. One sign of this was the decreasing average farm size, which shrank from 4040.87 acres in 1900 to 1055.25 acres in 1910 as the large ranches and speculative land holdings were divided. A few brave souls tried fruit farming in the Canadian Breaks, with varying degrees of success, but in general the land was too rough for large orchards and proved unsuitable for anything besides ranching. However, the flat, loamy lands around the Canadian Breaks were filling quickly, especially as the state of Texas tightened enforcement of land regulations. This forced ranchers to either buy formerly-leased acreage on the open market or to sell their "checkerboard" sections and consolidate the ranch holdings, either way putting more land on the market for would-be farmers and small stock-raisers to buy. Homesteaders began purchasing lands that the ranchers had formerly leased and began taking up farming leases on school sections as well.[9]

Farming in the Panhandle advanced from southeast to northwest, moving into drier and drier terrain. Settlement outside the ranch fences had followed rain and railroads as people moved into familiar country to grow familiar crops along major transportation routes. Towns

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[8] W.C. Holden, "The problem of Maintaining the Solid Range on the Spur Ranch" *Southwest Historical Quarterly* 34, No. 1 (July 1930), 3; Paul Wallace Gates, *History of Public Land Law Development* (New York: Arno Press, 1979 reprint of Washington D.C.: General Publishing Office, 1968), 391, 394, 420.

[9] Nall, "Golden Era", 76; February 26-27, 1924, Ranch Manager Diary, Alamositas Division, Folder 1, Box 2, Matador Land and Cattle Company Collection, Southwest Collection/ Special Collections Library, Texas Tech University, Lubbock, TX.

such as "Old Clarendon" (later moved to meet the railroad), Mobeetie and Panhandle City grew up along side the rails and streams, while farmers spread out to grow dry-land wheat and sorghums, alfalfa and even experimenting with cotton in the southern parts of the Panhandle. The farmers around Amarillo, especially south in Randall County between the Canadian Breaks and Palo Duro Canyon, raised garden truck, grain and also kept dairy cattle, establishing a local dairy industry. However, drought between 1893 and 1894 slowed the advance of the farming frontier, even pushing it back toward better-watered areas at times. Despite the earlier hopes that rain would follow the plow, and improved dry farming techniques, it soon became evident that the best way to pay for the land and make a living depended on combining farming and ranching in stock farming.[10]

Early settlers described the slow progression of large ranches to small ranches to wheat farms in their memoirs and reminiscences. Lucian Burnett settled with his parents and thirteen siblings in Moore County, Texas, just north of the Canadian breaks, in 1914. His father bought nine sections of land at $10 per acre, and a few extra acres at $15 per acre. They started with cattle and a garden. "I think they ran thirty five to forty head to a section. You had to have that much in order to have a calf crop to sell at all." The family used both "an old Rumley tractor" and mule teams to break wheat ground, and it was 1931 before Burnett had a "real" wheat crop. South and west of the Burnett family, Mrs. W. M. McCloy's family came with a group of

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[10] Della Tyler Key, *In the Cattle Country: History of Potter County* Second Edition (Wichita Falls, TX: Nortex Offset Publications, Inc., 1972), 8, 10; L.A. Pierce to Archey Aker, August 3, 1936, 4, "Aker" File A-D, Box 1, C. Boone McClure Papers MS 1994.91.1, PPHM; Lucien Burnett to Woods Coffee, October 26, 1962, 4-5, "Burnett, Lucien" MS/Int Collection, PPHM; Carrie Pauly Stevenson, "Early Plains History" Section D. "John Arnot", "Stevenson, Carrie Pauly" MS/Int Collection, PPHM; Mrs. Albert [Sue] Bivins and Mrs. Cora Green to Mrs. L.E. Mayer and C. Boone McClure, Jan 20, 1958, "Bivins, Mrs. Albert" 1, 2, MS/Int Collection, PPHM.

"Covanenter" Presbyterians from Kansas in the early 1910s. Mrs. McCloy recalled that her husband's first wheat harvest came from thirty five acres and was cut with horse-powered headers and a threasher. It was not until 1916 that O. W. Jarvis brought a tractor to the area, and he introduced a combine in 1920. Both Burnett and McCloy bought supplies from Channing, rather than Amarillo, because there was no good and safe way to cross the river. Adie (Money) McElroy settled on the old T-Anchor ranch north of what became Canyon City at the head of Palo Duro Canyon in 1893. They raised a few cows, "tried farming," and the men hunted antelope for meat and hides. She recalled that a family of ten ate fifty pounds of flour, a sack of cornmeal and a gallon of syrup a week, plus canned tomatoes and corn and some form of meat. These stories are typical of the memories of those who settled the newly-opened land in Texas, breaking the grassland for wheat, corn and milo.[11]

Smaller stock farmers joined the dryland pioneers on the High Plains in increasing numbers, often with the assistance of the railroads and settlement companies. Diversified agriculture was nothing new: until World War II many farmers still practiced "safety first" or "survival" agriculture, raising cash crops such as wheat or maize along with cattle, pigs, poultry and garden crops. In the Panhandle, stockmen devoted acres to wheat, with sorghum and milo as safety crops that could still grow if the wheat failed in spring. Pasture land supported cattle that could eat the feed grains and then be sold to pay taxes or slaughtered to feed the family, while garden produce supplemented the family diet and could be sold or bartered with neighbors or to

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[11] Lucien Burnett to Woods Coffee October 20, 1962 in "MS/Int Burnett" PPHM, 4, 8, 11, 12; Mrs W. M. McCloy to Mrs. Gayle Walters, December 29, 1966, MS/Int McCloy, PPHM, 1,4,5; Mrs. J.D. McElroy to Claude Money, July 12 and 21, 1961 in Box 2, Folder 9, MS/Int 1994.91 Papers of C. Boone McClure, PPHM, 1,2.

town stores. Only if everything failed would a stock farmer be in desperate straits, as opposed to someone who depended solely on one crop.[12]

Since Texas allowed the purchase of parcels of land larger than 160 or 640 acres (64.8 or 259 ha), stock farming became common in the Panhandle. The Capitol Lands Syndicate, White Deer Company and other land companies encouraged mixed farming as much as the agriculture experts did, because the land sales managers neither wanted to see people starving nor desired foreclosing on settled lands if the purchasers could not pay. Through the period, the Canadian Valley remained ranch company, although the ranches were smaller than before the consolidations and changes in ownership: the land was too rough for anything else, despite visions of turning the Breaks into commercial orchards. On the other side of the New Mexico Territorial line, however, things moved more slowly.[13]

New Mexico saw a surge in homesteaders as the railroads finally entered the Canadian valley from the northeast and east, but not as quickly as did Texas and then only after 1900. The larger ranchers controlled the range as they had in the previous decades. And stock farming required more than one hundred sixty acres, something the federal homestead regulations slowly came to acknowledge. Modifications to the Homestead Act, such as the Desert Land Act, crept through Congress. By 1909 the Enlarged Homestead Act made it possible for a family to claim a

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[12] M.V. Sanders to Hazel Cox Davidson, August 1 and 2, 1936, 2-3, "Davidson" in Box 1, C. Boone McClure Papers, MS 1994.91.1, PPHM; 1895 "Report of the Managing Director of the Capitol Freehold And Investment Company, Limited, Honorable John V Farwell for the years 1894 and 1895" 1.

[13] M.V. Sanders to Hazel Cox Davidson, August 1 and 2, 1936, 2-3, "Davidson" in Box 1, C. Boone McClure Papers, MS 1994.91.1, PPHM; T. D. Hobart to Frederick de P. Foster, 15 January 1912, D. 26 3714 Box 4 of 32, Francklyn Land and Cattle Co. Collection, PPHM, 2; Paul H. Carlson *Amarillo: The Story of a Western Town* (Lubbock: Texas Tech University Press, 2006), 51,63.

half section (320 a, 129.5 ha) of land, barely enough in a wet year if farmed by experienced dry farmers.[14]

The lack of access to markets, however, slowed growth in the region, and as of 1905 New Mexico still had 37,599,949 acres (58, 750 mi ^{2} or 15,216,699 ha) of federal land that had been surveyed and was not yet assigned, and a further 14,495,363 acres (5,866,623 ha or 22,649 mi^2) that was both unassigned and not yet surveyed! Clayton, in far northeastern New Mexico, had a railroad, but it was not until 1901 when the Rock Island pushed across the Canadian at Logan and entered the valley that Tucumcari was founded.[15]

Although population in the area grew, the drought of 1904-1906 slowed settlement while ranchers fought the enforcement of federal fence-removal orders. Then, after 1906 the population of eastern New Mexico surged when rain and railroads returned to the Canadian Valley. Families and single individuals came to homestead, to speculate, to provide services in the new towns along the railroads and to get away from the past. Up on the grasslands between Logan and Clayton, a group of Methodist Episcopal and Congregationalist preachers founded the colony of Amistad in 1907. The settlement soon had a post office, a church and a reputation for possessing an abundance of "preachers and old maids." Farther south, at the southern edge of the Canadian lowlands near the edge of the Caprock, the family of Tomás Wesley Brown bought land roughly twenty-five miles (forty km) from both Grady and Tucumcari, near an intermittent stream called Apache Creek, around 1900. Brown's autobiography describes his parents' interest in a place where his father's half-Indian background would not cause problems, as well as where they

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[14] Paul Wallace Gates, *History of Public Land Law Development* (1968; repr., New York: Arno Press, 1979), 502, 503.

[15] Gates, *Public Land Law Development*, 503; Dorothy Virginia Morton, "A History of Quay County, New Mexico" (master's thesis: University of Colorado, 1938), 27, 35.

could find enough land to support the family of seven. Farther south, so many Missouri and Texas residents settled the Llano Estacado's western extension that the area was called "little Texas." Even in the more varied population of the Canadian watershed, tensions existed between earlier Hispano settlers and the new arrivals. The Mexican nationals introduced by the railroad contractors as cheap labor did not make the scene any more settled.[16]

These new arrivals were predominantly Anglo, and the combination of white farmers, Hispanos and Mexican laborers contributed to both the decline of the traditional wanderings of the *pastores* and to the increasing ethnic tensions in the area. As one would expect, the first homesteaders, when they had a choice, selected land along watercourses and/or in potentially irrigable parts of the Canadian watershed. The Plaza Larga valley and the lands at the bases of Mesa Rica and the Caprock were three choice locations because of the springs that emerged there and fed nearly permanent streams. As local historian Dorothy Morton explained, "at nearly every spring of water, especially near the cedar breaks, the Mexicans [Hispanos] had pre-empted the best water holes." In the vicinity of Tucumcari, early farmers had the advantages of shallow, readily accessible groundwater, two springs and a small lake and light, easily farmable and generally level soil.[17]

As these choice places filled up, the *pastores* found themselves shut out of their traditional watering places. The lake at Tucumcari became contested ground, with pastores

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[16] Mary Grooms Clark, *A History of New Mexico: A Mark of Time* (Canyon, TX: Staked Plains Press, 1983), 23, 171, 223; W. Thetford LaViness, "A History of Union County, New Mexico" (master's thesis, University of New Mexico, 1946), 57; Boyd C. Pratt, *Gone but Not Forgotten: Strategies for the Comprehensive Survey of the Architectural And Historic Archaeological Resources of Northeastern New Mexico* Volume 1 (Santa Fe: New Mexico Historic preservation Division, 1986), 227,228; Tomás Wesley Brown, *Heritage of the New Mexico Frontier* (New York: Vantage Press, 1995), 23,35,71.

[17] Morton, "History of Quay County," 39, 40.

needing to water their sheep and town residents trying to keep the water clean and plentiful for their own domestic use. An attempt at compromise by restricting the *pastores* to one small section of the lake and encouraging them to load casks of water to take away from the lake did not succeed. According to early settler Mrs. J. W. Moncus, on several occasions shots were fired that drove the Hispanos and their flocks away. "The Mexicans, however, kept coming up from the Pecos Valley near Santa Rosa in the winter, as the plains were good winter grazing region. A number of battles were fought between the ranchers and Mexicans before the Mexicans finally stayed away," or so Mrs. Moncus recalled. Her family's neighbors stood turns guarding the Moncus ranch at one point because of purported threats from "Mexicans" and because of *pastores* who slipped their flocks under the Moncus family's fences in order to reach water.[18]

Clashes such as this did not endear Hispanos to the new arrivals, and vice versa. Mr. J. Miera Vigil told an interviewer that the older settlers had serious doubts about Anglos and their subterranean dwellings. Emilio Garcia went farther and said that the homesteaders "lived in gopher holes' or shacks and were foolish enough to use bad water from surface sources." According to the Hispano observers, some Anglo settlers hauled water for up to three years and over distances as far as ten miles until they drilled their first well (or they gave in and left).[19]

Despite the demographic changes, Hispano *ricos* retained a great deal of political power in the region. The Gallegos family still controlled much of the Ute Creek watershed, and Francisco Gallegos' widow and sons built a wool warehouse at Logan in 1904 where they stored their wool clip before shipping it. Francisco's son Eufracio served as a representative to the 1911

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[18] Morton, "History of Quay County," 40.

[19] Boyd C. Pratt, *Gone but Not Forgotten: Strategies for the Comprehensive Survey of the Architectural and Historic Archaeological Resources of Northeastern New Mexico* Vol. 1: Historic Overview (Santa Fe: New Mexico Historic Preservation Division, 1986), 232, 244;

New Mexico constitutional convention as did Francisco's younger brother Eugenio. Eufracio had served on the Territorial Senate and as Chairman of the Union County Board of Commissioners from 1905-1909, while Eugenio served in the State Senate as the representative of Gallegos in the 9th District in 1912 after a term in the Territorial House of Representatives in 1890 and then working as Territorial Sheep Inspector 1908-1911. Farther west, in San Miguel County, politicians from both major parties courted Don Bernardo Griego and the votes he controlled or influenced.[20]

However, the shifting demographics of the region worked against the old guard, and by 1916 one was hard pressed to find a Hispano name in the Tucumcari newspaper, aside from Philip Sanchez y Baca, the General Land Office clerk and a Gallegos family member. At the same time, the arrival of Mexican workers along the railroad caused problems for the Hispanos, who found themselves lumped together with the newly-arrived "greasers." Fabiola Cabeza de Baca described her father's fury at a newly arrived homesteader who said "I thought you were a white man when I saw you," after hearing don Cabeza de Baca speaking Spanish. Cabeza de Baca replied "using strong language" that "Of course I am a white man - and an educated one, too." Francisco Gallegos's grandson Frank Cabeza de Baca recalled for local reporter Mary Grooms Clark how one of the family's workers was almost killed by a group of Anglos looking for some Mexicans who had assaulted an American. After a local barkeeper and businessman assured the Anglos that the young man was not a Mexican and that he was a local, the mob moved on. It became common for the bodies of Mexicans and a few Anglos to be found in boxcars in Dalhart or Santa Rosa after murders in Tucumcari and Logan. Frank Cabeza de Baca

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[20] New Mexico Office of State Historian: "Eufracio F. Gallegos" and "Eugenio Gallegos," http://www.newmexicohistory.org/people.php?catid=50; "Francisco Gallegos," Funeral pamphlet, Albert Gallegos private collection; Clark, *Mark of Time,* 171,178; Griego, *My Land of Enchantment,* 55;

added that conflicts between Mexicans and Hispanos near Las Vegas delayed the construction of Storrie Lake southeast of the city. All of this, plus the increasing closure of the open range forced the *pastores* westwards. For a time they were able to use the federal forest reserves, but the day of sheep-on-shares and Hispano political and social dominance was coming to an end as the small-grain era in the Canadian Valley began.[21]

The population of the Canadian watershed increased rapidly after 1906, as homesteaders in New Mexico experimented with dryland farming while irrigation companies surveyed and planned great developments. Tucumcari sprang into existence as soon as the route of the Chicago-Rock Island Rail Road was determined. The first town lots sold in December 1901 and the new residents incorporated their town in March 1902. Tucumcari boasted a population of 2,500 souls by 1904. The settlers were primarily homesteaders and dry farmers, although a few were railroad workers, with a scattering of businessmen who relocated from the old settlement of Liberty.[22]

All was not easy plowing for the homesteaders, however. The initial burst of enthusiasm took a beating from the dry years between 1902 and 1905, when only 38.9 inches (998.6 mm) of rain fell. A measles epidemic in 1904 caused more hardships and the flash flood that roared down the Canadian on September 29-30 of that year, washing away two upstream settlements

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[21] Tucumcari (NM) *News* January 15, 1915, 4; Fabiola Cabeza de Baca *We Fed them Cactus* (Albuquerque: University of New Mexico Press, 1994), 148; Clark, *Mark of Time,* 171; Anonymous quoted in Boyd C. Pratt, Charles D. Bickel and Dan Scurlock, *Trails, Rails and Roads: The Central New Mexico East West Transportation Corridor Regional Overview* Vol. 1: Historic Overview (Santa Fe: New Mexico Historic Preservation Association, 1988), 155.

[22] Clark, *Mark of Time,* 23,73.

and carrying off two railroad bridges, a highway bridge, forty houses, and seven people, did not encourage settlers.[23]

Despite these difficulties, by 1906 the tax rolls for the three-year-old Quay County show a burgeoning population. An anonymous observer writing for the *American Sheep Bulletin* reported in 1906 that from Tucumcari eastward, "as far as one can see are homesteads galore, each having more or less land under cultivation." Families settled the area, growing wheat and maize, sorghum and milo, alfalfa, pinto beans and broomcorn. By the time Panhandle pioneer Casimero Romero died in 1908, new homesteads surrounded the 320 acres of land four miles south of Nara Visa that he had homesteaded along with his son Ynocencio. The Tucumcari *Sun* bragged in 1916 that all the houses abandoned in the last drought had been filled once more, and that the Tucumcari Land office was booming. An enterprising company moved into the town in 1916 and built a factory to use yucca for rope and cordage instead of imported sisal. The area was booming, and the Panhandle grew along with its western neighbor. What sort of people were turning the Canadian watershed from a grazers paradise to a farmer's fantasy? All kinds.[24]

Like the Hispanos before them, Anglos settled the Canadian Valley in New Mexico for a number of reasons. Some came to speculate, proving a claim and then selling it at a profit and moving elsewhere. Others intended to stay and took advantage of the revised homestead laws to acquire enough land to make a living. One example recounted by historian Boyd C. Pratt was of a family, whose father, sister and two grown daughters claimed four adjoining homesteads and

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[23] Pratt et al, *Trails, Rails and Roads*, 155; "Precipitation-Bell Ranch," 310.

[24] Pratt et al, *Trails, Rails and Roads,* 155; G. C. Hammons, "Stay With Your Claims" *Tucumcari* [NM] *Sun* June 12, 1908; "Precipitation-Bell Ranch," 310; *Tucumcari* [NM] *News* April 9, 1915, 3; "Tucumcari Lands a Yucca Factory" *Tucumcari News* February 5, 1915; Morton, "History of Quay County," 67.

built their house in the center, with one bedroom in each claim so that each person could honestly swear before federal officials that he or she had spent at least six months of the year on their claim! Tomás Wesley Brown's father bought some of his land in fee simple, probably from a rancher or earlier settler, as well as filing a homestead claim to adjacent federal land. He had some experience farming in Oklahoma and Texas, and was careful to locate his family near good water and in a friendly "neighborhood" south of Tucumcari at the foot of the Caprock on Apache Creek, with Grandfather Brown and other relatives settling nearby. The Browns moved for free land as well as to find a location where Mr. and Mrs. Brown's mixed Anglo-Cherokee-Delaware ancestry would not cause them problems. A few Hispanos also settled the area during this time, but not many, and even families like the Gallegos-de Baca clan faced mounting competition for land and political power from the new arrivals. Meanwhile, all residents of the region, new comers and veterans, had to deal with the reality of the lack of water. The next few decades would prove to be challenging ones because of physical climate, international conflicts, and the unintended consequences of surging wheat prices.[25]

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[25] Pratt, *Gone*, 205,229; Brown, *New Mexico Frontier,* 80-81; Morton, "Quay County History" 35,37; Clark, *Mark of Time,* 213; Cabeza de Baca *Cactus*, 146,147; Gates, *Public Land Law,* 503.

Chapter 11 - Droughts, War and Great Dreams

Things looked better for residents of the Canadian River watershed after the drought broke in 1906, but the memory inspired the first major plans to tame the Canadian, even as dry-land farming grew in popularity under the careful tutelage of experts and enthusiasts. While the period of 1906 through 1930 was wetter than average, it did not mean that all was lush and lovely every year. After the wet spell between 1906 and 1909, mild drought returned in 1910-1911. The dry years slowed but did not stop the spread of settlement and encouraged the development of dry-farming in the Canadian River Valley. It may also have helped encourage the creation of the first irrigation corporation in the region.[1]

This was the era of canals and irrigation companies, encouraged by men like William Smyth. Smyth, a former reporter who became an evangelist for irrigation after seeing the effects of drought and the benefits of water diversions on the Maxwell Land Grant, used his *Irrigation Age* paper and 1905 book, *The Conquest of Arid America*, to spread the gospel of reclamation and irrigation for the western United States. He urged people to make the deserts bloom with the otherwise "wasted water" flowing down streams and into the seas. Smyth proclaimed that irrigation brought social benefits, elevating man because each must work for the common good, with each irrigator contributing labor and other resources to the irrigation project so that all could reap the rewards. "The welfare of each is the concern of all," as Smyth phrased it. Not only would irrigation make the desert bloom, irrigation projects encouraged desert residents to work together to form interdependent communities of small-farmers. Several Tucumcari businessmen seem to have taken such urgings to heart and they filed incorporation papers with the state in

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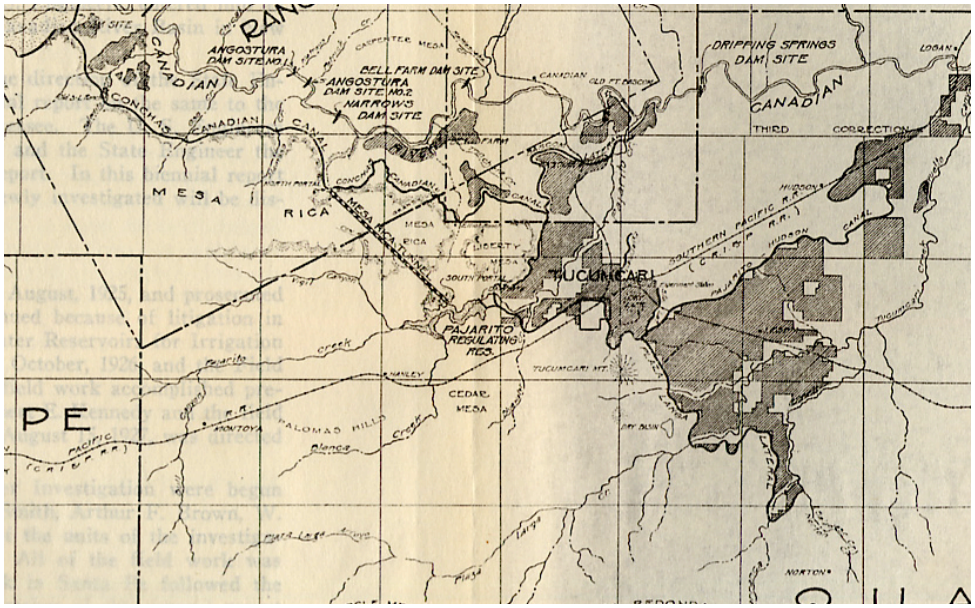
[1] Robert Julyan, *The Place Names of New Mexico,* Revised Edition (Albuquerque: University of New Mexico Press, 1998), 314.

1912 for a company that would build canals from Pajarito Creek southwest of town to irrigate fields south of the Canadian. There had also been earlier irrigation surveys in the area, including one that focused on Ute Creek at Gallegos and described canals running south and east, but this was one of the most extensive.[2]

A report in the state engineer's office files at the New Mexico State Record Center reveals the difficulties that the Tucumcari men's enterprise faced in trying to bring water to the Tucumcari vicinity. W.B. Freeman had surveyed the land on horseback and determined that water stored behind the proposed Vigil Canyon dam site could be diverted over the plains, around Tucumcari Mountain, through the town and into the Plaza Larga valley to irrigate 25,000 acres of farmland as well as watering a few lawns within Tucumcari.



[2] William E. Smythe, *The Conquest of Arid America with a New Introduction By Lawrence B. Lee* (1905; repr., Seattle: University of Washington Press, 1969), 118, 267,328; Incorporation number 7022, December 18, 1911 "Tucumcari Irrigation Company" in "Corporations – Territory of New Mexico, Volume 6" New Mexico State Corporation Commission Files, S/N 3987, New Mexico State Record Center and Archive (MNSRCA), 141; Luther Foster Drew to Interstate Land and Development Company, Denver CO, January 1, 1912, BC Box 23, MS 86, Red River Valley Corporation Collection, Center for Southwest Research, University of New Mexico, Albuquerque, NM. (Henceforth RRVC, CSWR, UNM.)

Figure 9: Tucumcari Streams and Irrigable Lands. Vigil Canyon is west and south of the "Mesa Rica Tunnel" on this map. Dam would have been where ranch border crosses Vigil Canyon.

He suggested that a 75 foot-tall (22.9 m) earth-fill dam storing 49,400 acre/feet (60,933,912 m^3) seemed the best that could be done. Freeman estimated that the cost for the project would run between $345,750.00 and $596,995.55, the latter price including building tunnels of 3500, 450, 750 and 1700 feet (1067, 137, 229, and 518 meters) through solid sandstone, building flumes and pipelines over Mesa Gulch and a second, unnamed arroyo, constructing one or two dams, laying out the canals and digging them, purchasing the right-of-way and other "minor" considerations. The laterals on the irrigation system would have brought (perhaps) 42,500 acre/feet (52,422,900 m^3) of water to 25,000 acres (10,118 hectares) at a suggested cost to the final users of $ 60 per acre of land irrigated ($148.26 per hectare). But Freeman pointed out that the improvements would raise land values from the then-current five dollars per acre to between one hundred fifty and five hundred dollars per acre ($370.65 - $1235.50 per ha) for the lands within the irrigation area. The scale of the project, which involved lawsuits and land purchases in order to obtain rights of way for the canals, hiring construction and drilling crews, blasting tunnels in a mesa, and buying the land to be irrigated, was very, very large, especially for a small group of local businessmen. And there was no guarantee that enough people would pay the increased land prices and the water use fees needed to repay the initial investment. And what about maintaining the system once it was built? The magnitude of the

effort and resources required apparently proved too daunting even for the energetic boosters of Tucumcari, because the company was unincorporated in 1915 for lack of activity.[3]

Taming the Canadian for irrigation use had been a dream and a challenge for Anglos ever since Wilson Waddingham tried it on the Bell Ranch. As the Tucumcari irrigation company backers probably suspected, given where they wanted to draw water from, both the chemistry and the hydrology of the stream worked against irrigation works on the Canadian's main stem. As many people had noted, the river fluctuated too widely to be a reliable water source during the growing season: after the June rise, just when farmers most needed to irrigate, the river would sink into its bed in some places and vanished completely some years. At other times it rose in flood, like September 1893 when it washed away two bridges and much of Tascosa, Texas, then again during the record-setting September 30-October 2, 1904 inundation that erased the community of Mills, and once more with the freshet of April 1914. Each time the waters rose they ripped out small dams, wrecked head gates on canals and dumped silt and sand onto crops growing within the river's floodplain. [4]

As if unpredictable flows were not enough to cope with, the salt content in the stream's water posed a further challenge to would-be irrigators. Some of the rock layers that the Canadian cut through were almost pure gypsum and salt. As a result, the water dissolved the salts and carried them downstream. Irrigating with this salty water would stunt and even kill crops while

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[3] W.B. Freeman, "Report on Tucumcari Irrigation project, Quay County, New Mexico," Box 29, Folder 950, S/N 4346 New Mexico State Engineer's Office Papers, NMSRCA, 6,7,11,15, 80, 63; Herbert Yeo, *Ninth Biennial Report State Engineer of New Mexico, 1928-1930* (Santa Fe: State Engineer's Office, 1930), map facing 176.

[4] United States Weather Bureau, "Flood on the South Canadian River in Oklahoma and Indian Territory, October 1-4, 1904" *Monthly Weather Review* Vol. 32, No. 11, (November 1904), 522; John L. McCarty, *Maverick Town* (Norman: University of Oklahoma Press, 1946) 251; Louis W. Vilder to C.M. O'Donel, April 15, 1914, MS 5 86 BC Box 23, RRVCC, CSWR.

gradually making the soil too saline for further use. Because of this, most truly feasible plans for bringing water to the plains depended on tapping the Canadian's tributaries. The explorations in the early 1910s focused on Pajarito and Ute Creeks and made no mention of the main stream. In 1930 the New Mexico State Engineer's office published a comprehensive plan for the area that included at least one dam each on Ute Creek, Pajarito Creek, and Revuelto Creek as well as on the Canadian proper, with extensive irrigation canals serving the area around Tucumcari and Plaza Larga Creek, just east of Tucumcari. These drew from above the Conchas confluence, where the water quality was still relatively good.[5]

Irrigation in Texas, or at least plans for irrigation in Texas, lagged behind those in New Mexico for a number of reasons. First and foremost were the problems of topography and finance. The Canadian in Texas flowed through a double valley within the High Plains: the narrow inner valley, a few miles across at most, where the river and its floodplain were located. Surrounding this was a larger, broken and hilly area, interrupted in places by isolated buttes, that lay several hundred feet below the loamy, smooth uplands. Parts of the outer valley were too steep even for cattle to graze, let alone for someone to seriously consider leveling and re-working enough to be able to irrigate the ground. Given the topography of the breaks, who could afford to pump Canadian River water uphill 300-400 feet (91.4 – 121.9 m) in order to irrigate the flat lands above? Not the farmers settling Oldham and Potter counties, who preferred to drill wells

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[5] Thomas C. Gustavson, Robert C. Findley, and Robert W. Baumgardner, Jr., "Preliminary Rates of Slope Retreat and Salt Dissolution Along the eastern Caprock Escarpment of the Southern High Plains and in the Canadian River Valley" in *Geology and Geomorphology of the Palo Duro Basin, Texas Panhandle: A Report On the Progress of Nuclear Waste Isolation Feasibility Studies* 1979 Geological Circular 80-7 ed. Thomas C. Gustavson (Austin: University of Texas for the Texas Bureau of Economic Geology, 1980), 76, 78; Herbert W. Yeo, *Ninth Biennial Report of the State Engineer of New Mexico* (Santa Fe: State Engineer's Office, 1930) facing 177.

for domestic and livestock use while practicing dry farming. There was interest in irrigating south of the Canadian River, but the technical and economic realities meant that efforts were limited to plans and groundwater pumps even before the drought in 1909-1910 (11.15 inches [283.2 mm] of rain and snow at Amarillo) considerably set back many farmers' and ranchers' budgets. The land within the breaks was for the most part too rough and rolling for efficient irrigation and would require a great deal of leveling to make good fields. A few exceptions to this included the small areas Hispano and Anglo settlers had already developed, and water for those came mostly from springs, which were more reliable than the silty, salty, maddeningly irregular Canadian.[6]

The owners of the valley land, namely the Matador Land and Cattle Company and various branches of the Landergin, Masterson, Bush and Bivins families were not interested in farming the breaks when they could prosper from ranching and their other businesses. High cattle prices made ranching seem wiser and required far less investment in infrastructure. However, the difficulties did not mean that no one was planning to use the Canadian's waters for farming or for other purposes. In 1925 Mayor Lee Bivins of Amarillo ordered the city manager to look into acquiring water rights from the Canadian for municipal use, even though the city was in the process of acquiring and developing more groundwater supplies. Some area boosters voiced interest in a dam at Ute Creek that would provide water for Texas, but no one went further than talking. Land speculators and those selling off the Capitol Lands and White Deer

[6] Author observations, 1980-2010.

acres saw no point in spending money to divert the Canadian's waters in order to sell land when farmers were already moving in and buying land, whether irrigated or not.[7]

By the time of the First World War, dry farming had become well accepted and commonly practiced in the areas west of the twenty-inch (510 mm) precipitation line. East of that line, which began at roughly 100 degrees west longitude, wheat, maize and other grains could be grown reliably without irrigation. To the west of the "twenty-inch line" farmers needed special techniques to catch and hold the precious moisture when it fell. Although there was vigorous debate as to exactly what the best tools and practices were, the most common were fallowing, dust mulching and deep plowing. Experts including E. C. Chillicott and advisors from state agricultural colleges such as Texas Agricultural and Mechanical College (Texas A&M) urged farmers to plow less often and instead to drag implements over the ground to kill any weeds and to do it again after rain in order to keep a water-resistant crust from forming. Another step was to leave part of the land fallow every year so as to catch the rain, but to plow the ground in order keep it free of water-stealing weeds and other plants. Those fields that were planted were to be sown with drought-resistant crops and plowed deeply, especially after a rain so as to trap the moisture and keep it from evaporating. A cover of dust would protect the soil water, and so farmers made a blanket of loose soil called a dust mulch that would catch any stray precipitation. After harvest, stubble was left as "trashy fallow" in the fields as another way to hold the water and also to hold the soil against the constant wind. "Intermittent contour ridging," the practice of using an implement called a lister to deep plow while simultaneously making a ridge of soil at

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[7] Amarillo City Commission Meeting Minutes, April 28, 1925; Nall, "Golden Era", 80,81; William M. Pearce, *The Matador Land and Cattle Company* (Norman: University of Oklahoma Press, 1964), 153; Della Tyler Key, *In the Cattle Country: History of Potter County* (Wichita Falls, TX: Nortex Offset Publications, Ltd., 1972), 19, 21, 25; A. E. McGregor, "Report on Reconnaissance and Preliminary Surveys of the South Canadian River for Oldham and Potter County Texas" in Gov. Hannett Files, F. 202, Box 5, S/N 14153, n.p.;

intervals in the field so as to catch runoff and stop wind erosion, was also highly approved. For a time, these practices seemed to work and dryland agriculture, along with high grain prices, helped the region prosper after 1914.[8]

The First World War, drought and influenza all affected the region to varying degrees over the next few years. As Europe went to war, military needs including manpower caused the demand for American agricultural products to soar. The naval blockade of Britain by Germany choked the flow of wheat from Canada and other Commonwealth nations and colonies, making the British more dependent of supplies from neutrals such as the United States. C.H. Meeker, editor of the *Tucumcari News,* gloated in February 1915 that local wheat prices were "the highest in seventeen years," climbing from a local low of $1.31 per bushel in December 1914 to $1.65, a price not seen since 1909. The U.S. government encouraged farmers to help meet the Europe's needs and Tucumcari's staunchly Democrat newspaper joined President Woodrow Wilson's administration in urging farmers to "feed the world." The increased demand for grain led to rising wheat prices, as the grain that had sold for as low as $.91 per bushel on some U.S. regional grain markets in 1914 climbed to $2.71 per bushel in 1917. These rewards, combined with a wet fall and spring in 1915-16 encouraged New Mexican and Panhandle wheat farmers to join other American farmers in "the Great Plow Up." The farmers broke and planted more acres, while a government bonus for pinto beans led some New Mexicans to sow their sandy soil with legumes for a second cash crop. Farmers in the western panhandle broke more ground with their newly-purchased tractors and larger plows, increasing the acres devoted to wheat and other high-

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[8] James C. Malin, *Winter Wheat in the Golden Belt of Kansas: A Study in Adaptation to Subhumid Geographical Environment* (1944; repr., New York: Octagon Books, 1973), 239, 240, 245; Nall, "Golden Era," 85,90; Boyd C. Pratt, *Gone but Not Forgotten*, 247, 248, 249.

demand grains, and by 1918 almost 600,000 acres (242,820 ha) of golden grain nodded in the Panhandle wind.[9]

Ranchers, such as James Bush of the Frying Pan on the northern and western side of Amarillo, who owned upland pastures leased them out for wheat farming and saw a tidy income out of the transaction. Amarillo, the town at the rail junction in the central Texas Panhandle just south of the breaks, grew quickly and solidified its place as the regional marketing and cultural center, drawing cattle shipments and shoppers from as far west as Tucumcari. The 1914 replacement of the highway bridge north of the city reopened the northern counties for local retailers following the old span's destruction in April 1913 when flood debris from the railroad bridge west of Old Tascosa ripped out the "Florence Bridge" at Amarillo. People from Tucumcari, Vega, Dalhart, Logan, Clarendon, Panhandle City, White Deer, and now Dumas and Borger came to Amarillo to trade. Tucumcari grew as well, profiting from its status as a railroad maintenance station and county seat as well as local market center, although it was never as large as Amarillo. Farms and homesteads quickly filled in the map of eastern New Mexico and western Texas, and people worked to take advantage of the agricultural boom.[10]

The 1910s marked the brightest point in the "golden era of agriculture" in the United States. As agricultural historian R. Douglas Hurt described, 1909 to 1914 marked the period

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[9] Gary L. Nall, "Specialization and Expansion: Panhandle Farming in the 1920s", *Panhandle Plains Historical Review* Vol. 48 (1974), 47; "Wheat Highest in seventeen Years," Tucumcari *News* February 12, 1915.

[10] Carlson, *Amarillo*, 81; John Arnot, "Canadian River Bridges" in John Arnot, Ms/Int Collection, PPHM; Mary G. Clark, 126; Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* 25th Anniversary Edition, (New York: Oxford University Press, 2004), 89; James E. Sherow *Grasslands of the United States: A Environmental History* (Santa Barbara, CA: ABC-Clio, 2007), 111; "Wheat Area Doubled," Tucumcari *News*, April 23, 1915, 1; Tucumcari *News*, January 5, 1917.

when farmers' incomes were the closest to matching urban incomes, an event called "parity." If farm commodity prices are indexed at 100 units of value for the 1909-1914 period, then in 1900 the average commodity brought in 69 units. They peaked in 1919, when world demand gave American farmers 217 units for their grain, fiber and livestock. Even better for the farmers, while receiving 100 units in 1909, farm expenditures including seed, fertilizer, mortgage and taxes et cetera were only 97. The 1917 Food Control Act guaranteed a minimum price of $2.20 per bushel for wheat in order to encourage farmers to produce more for the war effort. In 1918 the floor was raised to $2.26/bushel. Ranchers and cattle feeders also throve during this time, as demand for U.S. beef increased and exports climbed from 150,000,000 pounds in 1914 to 954,000,000 pounds (68,181,818 kg to 433,636,364 kg) in 1918. At the same time, the price of beef also increased so that ranchers who had gotten $6.24 per hundred pounds of animal (cwt) in 1914 received a gloriously rewarding $9.56 cwt! Cattlemen stopped spaying heifers, farmers plowed more ground and sowed more grain and it seemed at last that farming would pay and pay well. Even chronically poor New Mexico prospered. But national statistics for the late 1910s disguise the problems that beset the Canadian watershed: the area's high hopes and rising population did not fare well against drought and disease.[11]

Drought crept back into the region starting in late 1916, although it was not as severe as that going on farther south and in far-west Texas. A study of northwest Texas droughts gives Palmer Drought Index ratings of -1.25, -3.97 (severe drought) and -2.32 for the years 1916-1918. These numbers translated into withered crops and hungry cattle in Texas and New Mexico. Even those farmers who practiced "safety first" agriculture, such as Tómas Wesly Brown's parents faced difficulties. The Browns dry-farmed "corn, maize, kaffir corn, sorghum cane, peanuts,

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[11] R. Douglas Hurt, *Problems of Plenty: The American Farmer in the Twentieth Century* (Chicago: Ivan R. Dee, 2002), 12, 37.

popcorn, pumpkins, pinto beans and watermelon" in an attempt to get at least some crop out of the ground. But even the hardy African grains such as kaffir sorghum need some moisture in the soil in order to grow, and 1917 was too dry even for that grain. The observer at the Bell Ranch recorded 12.7 inches (322.8 mm) of rain in 1916, followed by 7.8 inches (197.4 mm) the next year. The Canadian went dry in places, as it had in 1905. In 1917 Amarillo reported a total of 17 inches (433 mm), not as dry as farther west but still precarious for any spring planted or ripening crops that survived the hard freeze and the 9.1 inches (231.1 mm) of snow that fell on May 6-7 of that year! One wonders if the General Land Office offered special hardship dispensations like that mentioned in the Tucumcari *Sun*'s report in 1908, when the General Land Office/ Department of the Interior had made a special drought concession so that people could leave their claims for more than six months, in order to find work to support their families. Even if people were allowed to leave their claims in order to take extra work, the drought of the 1910s proved yet again that one hundred sixty acres were not enough land to survive on as a dry farmer but were too much for a family to irrigate. People began leaving the far eastern edges of New Mexico's Quay and Union counties, selling the land if they had proven up their claims, abandoning the fields if they had not. Those who could bring in a crop or who had cattle fit for the market did very well because of the rapidly climbing prices for agricultural commodities, but others suffered, especially ranchers.[12]

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[12] David W. Stahle and Malcom K. Cleveland, "Texas Drought History Reconstructed and Analyzed from 1698 to 1980," *Journal of Climate*, 1, No. 1, (Jan. 1988), 64; "Precipitation – Bell-Ranch – San Miguel County" 310; Brown, *New Mexico Frontier,* 23; Tucumcari *Sun* August 28, 1908; Carlson, *Amarillo*, 80, 96; "Yearly Precipitation Totals 1892-1920" National Weather Service, www.srh.noaa.gov/ama/?n=yearly_precip; Pratt et al, *Trails, Rails and Roads,* 157; Clark, *Mark of Time,* 124, 158.

The New Mexico Cattle Growers' Association estimated that between May 1, 1918, and May 1, 1919, its members lost on average thirteen point five percent of their herds, as compared to three percent the year before. The calf crop, the number of calves born alive, was only sixty five percent of average because of poor range conditions. One sign of the difficulties being faced by ranchers is found in a US Department of Agriculture pamphlet in the Bell Ranch managers' files, entitled "Chopped Soapweed as Emergency Feed." The author began by stating that the drought began as "early in 1916 and continues unabated at the present time," June 15, 1919, before explaining how to process yucca so that cattle could eat it safely.[13]

The Matador Ranch's Alamositas Division in the far western Texas Panhandle also reported difficulties. The Division superintendent frequently reported to the company's directors in Dundee, Scotland that the pastures were "dry and in poor condition." The upland ponds and tanks went dry in May 1916 despite some good snow the previous month that had "put a good season in the ground," and as a result the "cattle and horses [were] forced to go to the creeks and river for living water. In addition to a lack of rain, the winds at the end of May were "very hot and dry," sucking more moisture out of the ground and the early grass. In March 1917, H.T. Mitchell's range report stated that "[o]wing to the very dry winter we are badly in need of some moisture to start the grass" greening up and growing. The next month the owners were advised that "[t]his has been an unusually dry spring and we are needing rain badly." By June the new grass was "badly dried up and stock water is scarce" except for streams and windmills. The upland natural lakes were empty. Winter blizzards hit the weakened cattle hard, and on

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[13] Robert K. Mortenson, *In the Cause of Progress: A History of the New Mexico Cattle Growers Association* (Albuquerque: New Mexico Stockman, 1983), 12; C.L. Forsling "Chopped Soapweed as Emergency Feed for Cattle on Southwest Ranges," USDA Bulletin Number 745, in BC Box 3, MSS 86, RRVCC, CSWR, 1.

December 31, 1918, Mitchell took time out of feeding starving cattle to explain that because of a "twenty inch fall of snow which is still on the ground." 'This has been one of the worst storms on cattle we have had in 30 years. . .The thermometer has been fourteen below zero, up to the present time it has not thawed but very little. Everything in the way of grass is covered up and soapweed is all they can get to eat."[14]

As a result of all of these problems, the 1920 U.S. Census showed 10,444 people living in Quay County, down from 14,912 in 1910. Bordering Oldham County, Texas also lost population during the 1910s, declining from 812 to 709 people. However, as people relocated, their problems moved with them and even the relatively isolated towns of eastern New Mexico and the Panhandle were not immune to the disease that arrived via iron rails, rubber tires, and wagon wheels.[15]

Influenza followed the transportation corridor along the Canadian before spreading out into more rural communities. It had been many years since an epidemic had swept through the region, and unlike the smallpox or measles outbreaks earlier in the century, the 'Spanish Flu' attacked those thought to be at least risk – young adults and the middle aged. The first officially recorded influenza death in Amarillo was Russell A. Harty, a 41 year old "minister of the Society of Armenian and Syrian Relief Commission" who was visiting from Houston when he took ill and died in St. Anthony's Hospital on October 18, 1918. However, a 31-year-old farmer names

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[14] "Range Reports," 1916, 1917, 1918, Alamositas Division Box 24 Folder 4, Matador Land and Cattle Company Records, 1874-1960, Southwest Collection/ Special Collections Library, Texas Tech University, Lubbock Texas.

[15] United States Department of Commerce, Bureau of the Census, *Thirteenth Census of the United states taken in the Year 1910, Volume 1: Population General Report and Analysis* (Washington D.C.: Government Printing Office, 1913), 101, 120; United States Department of Commerce, Bureau of the Census, *Fourteenth Census of the United states taken in the Year 1920, Volume 1: Population Number and Distribution of Inhabitants* (Washington D.C.: Government Printing Office, 1921), 119, 132.

Charles G. Innes died on October 10 of "pneumonia," the first of a number of Amarillo visitors and residents in their 20s and 30s dying within three weeks of "pneumonia," suggesting that it was secondary to Spanish Influenza. Mayor Lon D. Marrs took no chances and on October 15, 1918 ordered the schools closed and all public gatherings and entertainments stopped, while all children were to remain at home unless with a parent or running a short errand. Hispano writer Alfonso Griego recounted how the disease affected his small, relatively isolated community near Santa Rosa, west of Tucumcari. In late November 1918 the children in his family recovered from influenza but his mother Tulitas Greigo and uncle Isais died within ten hours of each other, leaving his father heartbroken and struggling to care for the ranch and his children. The disease affected Anglo, Hispano and "colored" alike, and it is easy to imagine a struggling family wondering why they had moved to the High Plains only to watch first their crops and then their relatives die. However, despite drought in New Mexico and influenza across the entire region, crowned by the agricultural depression that began in the early 1920s, a measure of prosperity returned the eastern Canadian Valley in the form of black gold.[16]

In 1919 an oil boom hit the region, encouraging exploration and the creation of dozens of companies to try and profit from whatever might be found in the ground. Geologists had speculated about the possibility of oil in the Texas Panhandle as early as 1903, when C. N. Gould mentioned the possibility in the U.S. Geologic Survey report "Water Sources of the Canadian

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[16] Carlson, *Amarillo* 86-87; Lois K. Nix and Mary Kay Snell, compilers, *Blackburn-Shaw Funeral Home Records, Amarillo, TX: 1907-1920* (Amarillo: TapRoots Research and Publishing, 2000), 85, 86-93; Lois K Nix and Mary K. Snell, compilers, *N.S. Griggs Funeral Home Records 1903-1920* (Amarillo: TapRoots Research and Publishing, 2002), 107, 107-121. The funeral home records show that there were a 106 flu/pneumonia deaths out of a total of 198 deaths listed between October 10 and February 8, 1919. "Public Gatherings Prohibited" *Amarillo* [TX]*Daily News* October 15, 1918; "Schools of City Open Monday" *Amarillo Daily News* November 1, 1918; Alfonso Griego, *Good-bye My Land of Enchantment: A True Story of Some of the First Spanish-Speaking Natives and early Settlers of San Miguel County* ([Albuquerque?]: Alfonso Griego, 1981), 59, 60.

River." It was not until an "eccentric" clerk named Blackshear hunted through the Canadian Breaks looking for oil seeps that anyone else gave much thought to the possibility. Blackshear found no surface evidence of petroleum, but after the 1911 boom in Electra, south and east of the Panhandle, Amarillo-area businessmen became willing to invest money for exploration. Millard C. Nobles, president of Noble Brothers Grocer Company and one of the founders of Amarillo's streetcar service, hired Gould to re-map the area. In 1916 drilling started in the breaks north of the river and east of John Ray Butte on the Masterson Ranch (part of the old LIT) in north-central Potter County. On December 18, 1918 drillers brought in the Masterson #1 oil well at a depth of 2605 feet (794 m) below the surface, producing 10,000 cubic feet of natural gas per day. Other early wells found very little oil but did tap more natural gas, which was sold for home heating and commercial uses.[17]

Further prospecting east of Amarillo in Carson County led to the discovery of the Panhandle Oil and Gas Field on May 2, 1921. The Panhandle Field, concentrated in a northeast-southwest line along the western flank of the buried Amarillo Mountain formation, was an arm of the Anadarko Basin geologic complex that extended into Oklahoma. Prospecting continued and roughnecks brought in the first high yield well, the Smith No. 1 in Hutchinson County north of the Canadian, in 1925. When deepened, the well hit "a reserve that yielded ten-thousand barrels per day," (55,000 gallons, 208,197.65 liters). A local oil boom followed and in 1925 the Panhandle Field produced a total of one million barrels (55,000,000 gallons), with a high percentage of the wells coming in within the Canadian Breaks. The next year a surge in drilling sent twenty five million barrels to the refineries that sprang up in Amarillo, Borger and other

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[17] Carlson, *Amarillo*, 88, 90; "Nobles, Millard Clinton," http//:www.tshaonline.org/handbook/online/articles/NN/fno23.html.

towns near the field. By this point in time "gushers" were capped quickly, if they were allowed to "blow" at all, and there is no record of any oil spills or releases into the Canadian as a result of the wells in the breaks and uplands in Texas. This does not mean that there were none, however, just that there is no evidence for it. Landowners and speculators all along the Canadian River and throughout the watershed watched developments carefully, hoping for their own chance at finding black gold. [18]

The residents of Tucumcari had not waited for their eastern neighbors' success to begin speculating on the possibility of their own local oil boom after exploration began south of the Canadian watershed. In 1919 the New Mexico State Incorporation Commission recorded eleven new firms headquartered in Tucumcari and Logan and formed for the purpose of petroleum exploration, for providing oil-field supplies and for other related industries, all spurred by the activity near Amarillo and in Texas' Permian Basin. Oil strikes in 1924 around Artesia in Lea and Eddy Counties opened up the New Mexico's most prolific oil field and fueled hopes for the area around Tucumcari, but the Canadian River watershed failed to produce anything on the scale of Texas's and Oklahoma's fields. The geology refused to cooperate with the boomers and the rush left behind only dry wells, a modest carbon dioxide mining industry in the Ute Creek watershed and a wealth of geologic data. The oil frenzy provided jobs even in areas where no oil

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[18] N.D. Bartlett "Discovery of the Panhandle Oil and Gas Field" *Panhandle Plains Historic Review* Vol. 12 (1939) (reprinted from *Amarillo News-Globe* August 14, 1938), 48, 49, 50; "A Legacy of Progress" New Mexico Oil and Gas Association, http://www.nmoga.org; Paige W. Christiansen, *Scenic Trips in the Geologic Past No. 14: The Story of Oil in New Mexico* (Socorro: New Mexico Bureau of Mines and Mineral Resources, 1989), 21, 23.

was found, and helped ameliorate to a small extent the hard times that struck agriculture just after the end of the First World War.[19]

Despite the oil boom, the national agricultural recession following the First World War affected the Canadian Valley, although the drought in 1922-25 probably did as much harm. Cattle and grain production in 1920 exceeded demand because European farmers recovered faster than expected and Canadian and Argentine grain could once again compete with more expensive U.S. grain. The surplus of wheat and removal of the federal price floor led to a rapid decline in grain prices, from $2.26/ bushel in 1918 to $.81 in 1920, as wheat lost sixty four percent of its wartime price. Cattle prices also fell, from the peak of $16.45/cwt to$7.31/cwt in January 1921. The national average net farm annual income dropped from $1395 to $517. Prices for other goods also declined, but not as quickly as farm income did, so farmers and their families felt pinched between rising costs and declining incomes as the "golden era" of U.S. and Panhandle farming came to an end. Growing crops for the cash market continued to replace "safety first" agriculture because farmers needed cash more than they had before 1914. As if falling commodity prices were not enough of a blow, farmers who had taken out loans to buy land and equipment during the boom found themselves in debt. Tractor technology had progressed to the point that small gasoline-powered machines like the Fordson could pull two plows as well as other implements and were affordable for some farmers, who often bought them using loans. In order to pay for production, household expenses and the mortgage on their extended wheat acres, those farmers who had access to enough additional land planted more acres, so that the greater number of bushels grown would make up for low price per bushel. Lucian Burnett, who farmed north of the Canadian River in Texas, recalled that most of the land

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[19] New Mexico State Corporation Commission, "Corporations of the Territory of New Mexico" Vol. 6, S/N 3987, NMSRCA, 422-593; Christiansen, *Oil in New Mexico*, 23.

around his farm was not plowed until the late 1920s. "The biggest part of it" was "broken out" in 1929, in anticipation of the arrival of the railroad in 1930. Two years later, wheat brought twenty cents per bushel as more and more people in the county planted wheat. When this happened on a national scale, prices fell again as the amount of grain harvested during this second "great plow-up" exceeded demand, pulling farmers deeper into the debt cycle. At the same time, mechanization meant that fewer people were needed to work the farms, increasing unemployment.[20]

Year	Potter	Oldham	Quay	Union
1910	12,424	812	14,192	11,404
1920	16,710	709	10,444	16,680
1930	46,080	1404	10,828	11,036
1940	54,256	1385	12,111	9,095

Table 2: Population Change in the Canadian Watershed

Some New Mexican farmers had shifted to growing pinto beans during the war because of the government bounty on the protein-rich legume. The beans proved to be a mixed blessing: they brought in needed cash, but local banks would only give agricultural loans for pinto beans,

[20] Nall, "Specialization and Expansion," 56,65; Worster, *Dust Bowl*, 89, 90; Lucien Burnett to Woody Coffee, October 20, 1962 in Ms/Int "Burnett, Lucien," PPHM, 14,15; "Oldham County" www.tshaonline.org/handbook/online/articles/OO/hco2.html; "Amarillo Population Growth" from www.Goldenspread.us/Amarillo/History?Timeline.html; "BBER-UNM: New Mexico County Population, 1910-2000," www.bber.unm.edu/demo/ctyshist.htm.

forcing people to change over from grains, and farmers expanded their fields and plowed the sandy-soil areas that would dry out and blow in drought years like those of the mid-1920s.[21]

Even as wheat acreage increased and things recovered somewhat after 1924, some bankers and agricultural extension specialists both in Texas and New Mexico recommended that farmers diversify their crops again, and by 1925 warnings of another impending wheat price collapse began circulating. Drought on top of the recession proved too much for some, and northeastern New Mexico lost more farmers even as Texans and New Mexicans south of the Canadian Valley plowed more acres. The weather failed to assist the farmers, however, when a drought returned in 1923-25.[22]

The weather pattern in the early 1920s shifted slightly, changing when the rain and snow came. Summer precipitation declined between 1920 and 1926, while the number of winter precipitation events soared. However, these light rains and snows left less water. The fall rains benefitted the winter wheat in its early stages, but if they came after the first frost, the moisture leached the goodness out of the grass, while dry summers baked the ground and hurt both farmer and rancher. It was a double blow to ranchers such as O'Donel for the Bell Ranch, the Matador managers, the Gallegos-De Baca clan and the Griego family. Alfonso Griego, who grew up west of Tucumcari, remembered the 1923-25 drought as the event that broke his family. The Griegos had lost much of their livestock in the 1919 blizzard and did not recover before the dry years

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[21] Pratt, *Gone but not Forgotten,* 259.

[22] Nall, "Specialization and Expansion," 56,65; Worster, *Dust Bowl*, 89, 90; Hurt, *Problems*, 44; Carlson, *Amarillo*, 81.

ruined their range. The family sold their holdings for three dollars per acre to Anglo ranchers, except for a total of 320 acres that Alfonso's father and grandfather kept.[23]

Farther east, in the Canadian Breaks, the drought began slowly in late 1923. Reports of precipitation on the Alamositas Division of the Matador Ranch along the Canadian ceased, and almost every month the Division supervisor reported, "dry." The next year was "dry," "hot and dry," with "pastures are poor" as the temperatures reached "one hundred ten in the shade" in June. Rains in August and September helped "put a good season in the ground" but the cattle remained thinner and weaker than they should have been for late summer. October was again, "dry." The winter came with storms, including "twenty days of severe weather" in December followed by a blizzard on January 25th, 1925, that brought cold temperatures but little moisture to the parched valley. By March 1925, Alamositas Division supervisor H. T. Mitchell reported that, "[o]wing to the very dry weather, the Canadian River has been dry for some weeks and we have been short of water in our river pasture," on the south bank of the stream in Oldham County, Texas. On April 11th the Division manager noted that it was 92 degrees in the shade. The rains began on May 6th and by May 11th, "[t]he Canadian River is pretty high and Rito Blanco [Creek] has lots of water in it."[24]

This was the end of the drought, as subsequent rains proved, but the Matador Ranch still lost cattle that year, and the calf crop of 3783 head was lower than in the pre-drought years. The

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[23] For precipitation pattern analysis, see Appendix C; Griego, 62, 65; Pratt, *Gone*, 259; John Shipley and Cecil Regier, "Winter Wheat Grazing and irrigation Water Management, Northern High Plains" Texas A&M Agricultural Experiment Station progress Report PR 3030, (May 1972), 1,6.

[24] "Range Reports," Alamositas Division, 1923, 1924 and 1925, Box 24, Folder 6; Alamositas Division Herd Book 1911-1924, Box 4 Folder 9, 11,15; Ranch Manager Diary 1925, Box 2, Folder 6, all in Alamositas Division, Matador Land and Cattle Company Records, 1974-1960, Southwest Collection/Special Collections Library, Texas Tech University, Lubbock, Texas.

ranch also continued spaying heifers to sell as meat animals in an attempt to keep the herd numbers low enough for the Canadian Valley to support. When the rains did return, they washed sediment into the streams and river, eroding the bare ground between heavily-grazed grass clumps. The heavy grazing also took a toll on riparian vegetation and the range reports for February through April often warned that the pastures were "poor along the River and other watercourses, fair" or even "good" elsewhere, as the cattle concentrated in the sheltered and watered hollows and valleys. Not everyone faced as many difficulties as the ranchers did. Or perhaps more accurately, not everyone remembered the times as being so hard. Laura Lony and Albert Beda of Tucumcari, on the other side of the state line from the Matador, recalled sixty years later that the 1920s were good to excellent years, at least when compared to the 1910s.[25]

The region's economy remained fairly stable and the number of farm losses slowed and even stopped in some areas as the decade progressed. Some ranches grew larger even as farmers found ways to survive, expanding their acreage in the latter part of the decade and planting more wheat and sorghum, milo and maize. On the national scene, flappers and radio and the exploits of the "Lone Eagle" intrigued the nation, while farmers and their legislators lobbied for federal assistance to prevent another cycle of boom and bust.

Their lobbying efforts failed. In 1927 and 1928 President Calvin Coolidge vetoed versions of Representatives Charles L. McNary and Gilbert. N. Haugen's McNary-Haugen Farm Relief Bill, which would have set two-tiered commodity prices, encouraging exports while keeping domestic prices up until farmers' incomes again reached parity. Coolidge and opponents

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[25] "Range Reports," Alamositas Division, 1925, Box 24, Folder 6; Alamositas Division Herd Book 1911-1924, Box 4 Folder 9, 11,15; Ranch Manager Diary 1925, Box 2, Folder 6, all in Alamositas Division, Matador Land and Cattle Company Records, 1974-1960, Southwest Collection/Special Collections Library, Texas Tech University, Lubbock, Texas.

to the bill, which had first been proposed in 1924, argued that the funding was unconstitutional because it taxed food processors (mills, packing plants, dairy-product makers) in order to pay farmers, and that it would raise food prices within the United States, something the federal government did not need to be getting involved in. Despite these "setbacks," the Panhandle and eastern New Mexico prospered, perhaps not as much as city residents, but still, life seemed good. The oilfields in Texas and on the Llano in New Mexico provided jobs for farmers who lost their crops and helped soften the blows of the agricultural recession. Farther downstream along the Canadian River, events in October 1923 signaled the beginning of the end of the river's free-running era and heralded the beginnings of federal control over the stream.[26]

The Canadian flooded in seasons other than autumn, but it always seemed to set records when it did flood in the fall. On Sunday October 14 and Monday October 15, 1923 both branches of the Canadian River in Oklahoma crested their banks, starting the chain of events that led Oklahoma's government to initiate the creation of the first Canadian River Compact. That October, eastern New Mexico and the western Texas Panhandle had been wet by any definition of the term, with heavy rainfall extending north into the panhandle of Oklahoma. The Bell Ranch recorded 8.78 inches, one third of the year's total, that month. Amarillo was blessed with near-record yearly total of 39.75 inches. The Canadian was already swollen after several weeks of rain in late September, even before a series of storms drenched the watershed. Once the ground around the river became too soaked to hold any more moisture, the excess flowed into the Canadian and high water moved downstream through Texas and Oklahoma. The Canadian's riverbed sands began moving downstream as more and more water flowed into the stream,

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[26] Hurt, *American*, 267; Hurt, *Problems*, 59-60.

shifting the sediments and washing away the footings of bridges. Fast-moving floodwaters then smashed the debris into structures farther downstream.[27]

Heavy rains in Texas, New Mexico and western Oklahoma sent the North and South Canadian Rivers tearing through their valleys, inundating fields, ripping out bridges and turning Woodward (in the Panhandle) and Norman into islands for brief periods of time. The *Daily Oklahoman* newspaper warned on October 15 that Woodward had been cut off since the eleventh, and that "a fourteen foot wall of water is on its way from New Mexico . . . and it is feared that this will take out the Santa Fe Rail Road bridge at Norman." The next day's front page proclaimed that, "Bridges on railroads and wagon roads have been engulfed by the swirling torrents that have swept down the valley, inundating thousands of acres of land, sweeping out homes along the river bottoms and causing inestimable damage to crops of all kinds." The North Canadian also devoured part of the dam on Oklahoma City's municipal reservoir, causing water supply problems even as residents of the capitol city's low lying neighborhoods fled to the high ground, including the state capitol hill, for shelter. As the waters receded, north-south communications, highways and railroads across the state remained out of service for over a week, with final losses to infrastructure, crops and private property amounting to roughly $75,000,000.00. Oklahoma was, courtesy of the unruly, unpredictable, and unprintably described Canadian, a mess and the state government turned upstream for both the cause and the solution to its problem.[28]

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[27] H.C. Frankenfeld, "Rivers and Floods" *Monthly Weather Review* Vol. 51, No. 10, October 1923), 547.

[28] "Hundreds Flee Fury of Flood," Oklahoma City *Daily Oklahoman* Monday, October 15, 1923,1; "Western Areas of State May Face Famines," "River Rips Huge Gap in Dam; 15,000 Flee Torrent's Wrath; Flight Directed By Military," Oklahoma City *Daily Oklahoman* Tuesday October 16, 1923, 2,3; Oklahoma Commission for Drainage, Irrigation and Recreation

The proposed solution to the flood problem was simple – stop the water before it left the upstream states. Heavy rains in Texas, New Mexico, and the Oklahoma Panhandle had added to rivers already swollen by rain in central parts of Oklahoma. If the out-of-state surplus could be held until local high water passed, proponents of river control argued, then everyone would benefit. In the year following the great flood of 1923, the Oklahoma State Engineer's office proposed working with Texas and New Mexico to regulate the Canadian and its major tributaries. From this start Oklahoma and soon Arkansas approached the other states within the entire Arkansas River basin to hold a conference on flood control and navigation. Representatives from the governors' offices of Texas and New Mexico were appointed to discuss the possibilities of harnessing the unruly stream, in the process beginning the separation of the river's wet water and paper water.[29]

According to state and national laws concerning rivers, the Canadian River was actually two rivers – a wet river and a paper river. The wet river cared nothing for the curses, ambitions and observations of the people around it. The river flowed, or did not flow, depending on the weather. Human activity contributed to the alterations the river made to its valley, but the wet river had existed without humans in the past and would probably do so in the future.

The paper river, however, was the creation of politicians, engineers, lawyers and valley residents who desired to "conserve" the river by using every drop possible. For that to happen, the waters had to be divided, "apportioned" between the states, and then allotted to those

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letterhead, Folder 10, Box 3a Governor Martin E. Trapp papers, Division of State Archives, Oklahoma Department of Libraries, Oklahoma City, OK (henceforth DSAODL)

[29] Joe O' Brian to Edward E. Blake, June 18, 1924; A. S. Stinett to M.E. Trapp, September 17, 1925, both in Folder, 10 "Drainage, Irrigation and Recreation" File RG8F2, 3a, M.E. Trapp papers, DSAODL; "All Arkansas Drainages May Be Harnessed" publication unknown, *Amarillo Daily News* ? August 28, 1925, Vol. 35, No.28, Box 1, E. E. Blake Papers 2006.03 Oklahoma State History Research Center, Oklahoma City, OK.

interested in acquiring water rights to the stream's flow. New Mexico's Canadian Valley boosters urged the governor to speed action on controlling the paper river before someone else did, such as their neighbors downstream. A copy of a 1924 article from the *Amarillo Daily News* proclaims that "The Panhandle may blossom as a Rose of Sharon soon" explaining that "when the Panhandle blooms like a rose may not be that far off – because surveys of the Canadian River will be made today [July 15] for possible dam sites for irrigation purposes." An attached note explained that Texas booster A. S. Stinnett wanted "a mammoth dam in the Tucumcari Country where the river is narrow and rock bound." Five weeks later U.S. Representative John R. Morrow wrote to Tucumcari attorney Royal A. Prentice that, "[i]t is of the utmost importance that New Mexico protect its irrigation rights at once. This [Oklahoma plan] will probably result in an apportionment of the waters of the Canadian or Red River for irrigation projects in New Mexico. . ." He further lamented that "The trouble with our state has been all along its unprotected water rights . . . It is our *manana* [sic] spirit that gets us in bad ever once in a while."[30]

The creation of this paper river required the approval of Congress, because an interstate water compact was a treaty between the states wherein they agreed to share the resources for their mutual benefit. The governors of Texas, Oklahoma and New Mexico appointed Amarillo businessman A. S. Stinnett, Oklahoma City attorney E. E. Blake and Tucumcari businessman R. J. Freeland respectively to meet and discuss the creation of the paper Canadian and how to apportion the wet waters. Kansas also sent a representative to some of the meetings, such as the

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[30] E.E. Blake and David C. Warner, "Source Stream Control by E. E. Blake of Oklahoma City, OK and David C. Warner of Columbus, OH, February 25, 1932"; "All Arkansas Branches May be Harnessed" *Amarillo Daily News* [?] August 28, 1925, both in Folder 4, Box 1, E. E. Blake Papers, 2006.03, Oklahoma State History Research Center; John Morrow to Royal A. Prentice, 19 August 1924, 1, 2, in Governor Hinkle Papers, Folder 223, Box 6, S/N 14125, NMSRCA.

one held in Amarillo on August 28, 1925, as did Colorado and Arkansas. Governor Hinkle of New Mexico had been uncertain about his ability to send a delegate, but the state legislature agreed to pass a law allowing for the appointment of a commissioner, and work began on the first Canadian River Compact.[31]

The Canadian's water belonged to Texas and New Mexico via possession and the laws of prior appropriation. While within those states, the water belonged to the state, which granted water rights to the person who put the water to beneficial use. This could be irrigation (most often) or industrial purposes, and the individual who first used the water and registered that use with the state had seniority. That meant that he or she had first claim to the water, even if their place of use was downstream of a more "junior" right. In times of scarcity, the juniors had to watch water flowing downstream to do its duty to the senior, and only after his right was filled could the next most senior user take any water.[32]

This method of dividing the waters was very different from the Spanish idea of "sharing the shortage" that had come into place in New Mexico along with Spanish water laws. According to Spanish tradition, even senior water users could be forced to accept a lower apportionment in times of drought and distress. Unlike every other major stream in New Mexico, the Canadian in 1925 remained unappropriated. Since no one had found a way to put the frustratingly variable stream to beneficial use, aside from watering livestock, why bother claiming a right? A similar situation existed in Texas, although there were a few small claims by the Matador and other

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[31] Gov. James Hinkle to E. E. Blake, August 30, 1924 in Governor Hinkle Papers, Folder 223, Box 6, S/N 14125, NMSRCA; J. R. Freeland to E. E. Blake November 19, 1926 in Gov. Arthur Hannett Papers, F. 202, Box 5, S/N 14153, NMSRCA.

[32] James E. Sherow, *Watering the Valley: Development Along the High Plains Arkansas River, 1870-1950* (Lawrence: University of Kansas Press, 1990),108;

ranches. Those along the river could not or did not need to use it for irrigation or industry, while those on the uplands did not have the resources to pump it uphill if they wanted to. That part of the negotiations was easy: there were no major private water claims for the states to have to sort out. Their representatives must have sighed with relief, especially the men from New Mexico. Above the states, the federal government retained control over all navigable waterways, which did not describe the Canadian in New Mexico and western Texas unless it was in flood, so the only federal interest in the stream was via the Bureau of Reclamation and the records suggest that the states did not invite them to participate even as observers.[33]

Representatives of Oklahoma, Texas and New Mexico met in 1925 and by 1926 proposed what would become the first Canadian River Compact, first in Amarillo, then with representatives of Colorado and Kansas and Arkansas in Little Rock, followed by a final large meeting with delegates from Oklahoma, Texas, New Mexico, Louisiana, Kansas and Arkansas in early 1926. This was not the first river compact proposed among various states – Kansas and Colorado had battled over the Arkansas while Texas and New Mexico worked to divide the waters of the Pecos and New Mexico, Texas, and the governments of the United States and Mexico deliberated over dividing the waters of the Rio Grande. Between 1917 and 1922, Colorado, Wyoming, New Mexico, Utah, Arizona, Nevada and California had waged verbal battles over shares of the water from the Colorado River before reaching an agreement that Arizona refused to accept. Questions of local versus federal control over water apportionment, of

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[33] Betty Eakle Dobkins, *The Spanish Element in Texas Water Law* (Austin: University of Texas Press, 1959), 134; Malcolm Ebright, *Land Grants and Lawsuits in Northern new Mexico* (Albuquerque: University of New Mexico Press, 1994), 94, 196; Ira G. Clark, *Water in New Mexico: A History of its Management and Use* (Albuquerque: University of New Mexico Press, 1987), 231; this author has found no mention of any federal agency in any of the documents prior to 1930.

riparian laws as compared to prior appropriations and the duty of headwaters states to those river users downstream kept the courts busy and water lawyers in business.[34]

The discussion about the Canadian seems to have been less heated than some other compact negotiations, probably because the area had such a relatively low population. The 1926 Compact, in essence a treaty between the three states, proposed that Oklahoma, Texas and New Mexico would share the Canadian's waters, and all three states would also share the costs of flood control, regardless of where the water retaining structure was located. This was novel, in that Texas and Oklahoma would pay for part of a dam in New Mexico, and vice versa. The idea was that of equity: all three would benefit from flood control so all three states would share the cost. Oklahoma's experts calculated that building dams at Ute Creek, Conchas, one near Canadian in the eastern Panhandle and one west of Amarillo would cost less in the long term than would another flood like that of 1923. New Mexico would receive a million and a half acre/feet of water, Texas could claim 2,000,000 acre feet, and New Mexico would contribute to the construction costs of dams up to $8.00 per acre foot of water restrained. No contribution had yet been agreed upon for Texas' share. One imagines John Wesley Powell's ghost smiling on the efforts as they confirmed his argument that government on the watershed-level was the best, if not the only way, to harness the waters of the West for beneficial use.[35]

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[34] Donald Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (New York: Oxford University Press, 1985), 209; "Summary of the Report of the Arkansas River Commission" in Arthur Hannett Papers, Folder 202, Box 5, S/N 14153, NMSRCA, 1,2,3; Sherow, *Watering the Valley*, 126. Sherow, Norris Hundley and Douglas R. Littlefield all explore different riverine legal battles. See Norris Hundly Jr. *Water in the West: The Colorado River Compact and the Politics of water in the American West* (Berkeley: University of California Press, 1975) and Douglas R. Littlefield, *Conflict on the Rio Grande: Water and the Law 1879-1939* (Norman: University of Oklahoma Press, 2008).

[35] "Summary of the Report of the Arkansas River Commission" in Arthur Hannett Papers, Folder 202, Box 5, S/N 14153, NMSRCA, 1,2,3; John Wesley Powell, "Report on the Lands of the Arid

The first Canadian River Compact had a checkered career. Approved by the U.S. Senate, the Compact was ratified and signed by the states of Oklahoma and New Mexico. Texas' legislature did not approve the treaty in 1927 because the document failed to reach that point in the docket during the legislature's regular session due to the large number of other bills being considered (or so sources claim). In 1929 the bill passed a special session of the state legislature but Governor Dan Moody vetoed it. Governor Moody stated that he "[was] in doubt about the validity of such proposal" that Texas would benefit from paying for dams in New Mexico. In addition, he averred that " . . .no scientific surveys have been made of the area covered by this compact and that the rights of Texas or their value are not definitely known. I am further informed [by engineers] that the feasibility of the project that might be contemplated by the compact has likewise never been demonstrated . . ." He also expressed concerned about what rights Texas would lose in the compact. Despite Texas' failure, the other signatories acted as if the Compact were in force and made plans and met in session accordingly. Texan interests did not go unrepresented, however, because A. S. Stinnett from Amarillo attended the meetings as an interested observer, reporting back to residents of the area. Although studies were conducted and construction discussed, no main-stem or even large tributary dams were built between 1926 and 1934. A lack of funding was the main problem, since despite its oil revenues New Mexico remained a relatively poor state, Oklahoma had its own dams and diversions to pay for, and federal aid was not forthcoming since the states' had not asked for federal monies. However,

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Region of the United States with a More Detailed Account of the Lands of Utah" 2nd Edition. (Washington D.C.: Government Printing Office, 1879), 30.

events in Mississippi and Louisiana in 1927 opened the door for federal assistance in taming the Canadian, or so it seemed at first.[36]

The Canadian River's 1923 rampage shrank to a mere temper fit when compared to the Mississippi River's inundation of broad swaths of Mississippi and Louisiana in April,1927. Arkansas too suffered flooding, but nothing like the deaths and destruction caused by breaking and dynamited levees farther downstream as the swollen river reclaimed its old floodplains and channels, killing people and forcing the survivors from their homes along several hundred miles of river. Again, melting snow and upstream rains had fed the river's tributaries as well as the main stream, a double burden for the river-control structures to try and contain.[37]

The governments of Oklahoma, Arkansas, Kansas and Colorado, among others, took the opportunity to push the federal government for upstream dams in their states as a way to prevent another great flood on the lower Mississippi. That the states would also gain irrigation and navigation benefits were, of course, minor points of interest compared to the importance of downstream flood control. In the process of lobbying Washington, the Arkansas Basin states initiated a series of meetings and agreements based solely on watershed, again as John Wesley Powell had urged forty years before. However, great dreams of river control foundered on

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[36] Oklahoma State *Senate Journal* March 23, 1927, 2077; *Canadian River Compact* Section III B, both in Gov. Arthur Hannett Papers, Folder 202, Box 5, S/N 14153; Governor Dan Moody, "Veto of House Bill No. 80" C.S. 2, 1929, accessed through www.lrl.state.tx.us; Herbert W. Yeo, *Ninth Biennial Report: State Engineer of New Mexico, 1928-1930* (Santa Fe, NM: Office of State Engineer, 1930), 186, 196, 202.

[37] John R. Barry, *Rising Tide: The Great Mississippi Flood of 1927 and How it Changed America* (New York: Simon and Schuster, 1997), 16, 170-171, 187.

economic realities, even at the federal level, after 1929. It would take more than an interstate compact and fond hopes to put a dam on the Canadian.[38]

[38] Walter E. Parker to E. E. Blake, February 17, 1928, 1; E. E. Blake to Walter E. Parker, n.d. [reply to above letter], 3, 5, both in E.E. Blake Papers, 2006.03 OKSHRC. Parker was an economist from New Orleans and executive vice president of the National Flood Prevention and River Regulation Commission.

Chapter 12 – Dam Follies

The Canadian River project would call on the resources of the entire watershed as politicians, local residents, the Army Corps of Engineers and the recalcitrant owners of the Bell Ranch angled for, argued against and plotted towards the taming of the Canadian. By 1920 technology no longer limited damming the Canadian, but finances certainly did. Federal surveys along the river, augmented by more detailed work by the New Mexico State Engineer's office and similar work in Texas, found sites along the Canadian, Ute Creek and a few other streams that would be feasible for dams. The stretch between Ute and Amarillo offered possible dam locations near Trujillo Creek in Oldham County and one downstream of the Canadian River bridge north of Amarillo, but water at the latter site "would be back in a location that has a great deal of improvements in it that would be very expensive to acquire," improvements that included the main highway bridge and the LX Ranch headquarters complex, among others. Within New Mexico, the Canadian-Conchas confluence and Ute-Canadian junction afforded good solid stone walls to tie the sides of a dam to, sediments in the valley floor that could support a concrete or an earth-fill structure, and relatively narrow canyons upstream that could hold a lake without losing too much water to evaporation, but the state did not have money enough to build anything there. A 1928 map from the New Mexico State Engineer's office shows a carefully regulated stream with small and medium-sized water control structures on every place they could be constructed,

so that no water would go downstream without doing its duty to the citizens of the state.[1]

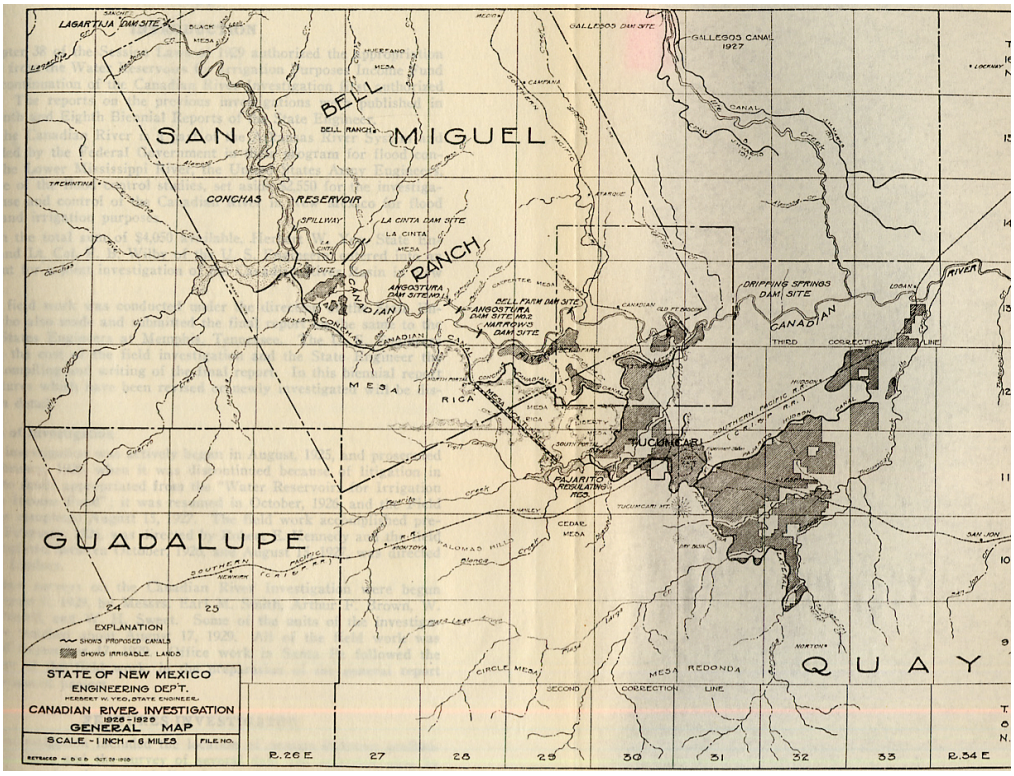

Figure 10: The Conchas Project - 1928.

Texans also eyed the Ute-Canadian junction, and hydraulic engineer A. E. McGregor wrote a detailed study concerning the possibilities of bringing the water from the proposed lake into Oldham County to use for irrigation, but gave no suggestion of the probable costs. No one worried about or even discussed the effects that damming the stream would have on the hydrology and geomorphology of the river itself. After all, a dammed stream was a domesticated and controlled stream, and one of the triumphs of civilization and a hallmark of progress, at least

[1] Herbert Yeo, *Ninth Biennial Report State Engineer of New Mexico 1928-1930*, (Santa Fe: State Engineer's Office, 1930), 177.

to engineers and irrigation champions. But no one had the funds to pay for the dams needed to hold back the river (and the pumps, and pipes, and paperwork and potential lawsuits, and . . .).[2]

The Great Depression and New Deal changed life along the Canadian Valley as what started as a flood control project became a recreation and irrigation project that in turn began another phase in the Canadian's geomorphic changes. The agricultural depression of the 1920s blended into the Great Depression with less notice in eastern New Mexico than in some places, although the drought that followed made things much worse. People who had gardens and some livestock, such as the last members of the Griego family or the Baca-Gallegos clan, could survive at least until their well and creeks went dry. The oil fields continued to provide some jobs, as did service work at hotels and restaurants along Route 66, the new highway that roughly paralleled the south bank of the Canadian from Amarillo to Santa Rosa. As Governor Andrew Hackenhull of New Mexico put it in a letter to the Arkansas Basin Commission, "Among the class of people who live in this area, charity is not well accepted and employment is the only solution for their distress," at least according to those in Santa Fe and Austin.[3]

Drought crept back into the area starting in 1933, adding another layer of misery for those trying to hold onto their land and livelihoods. 1930 and '31 had been dry but not too bad. However, in 1933 Amarillo recorded only 12.22 inches of moisture, while the Bell Ranch managed 5.65 inches, an all time low record that stood until records ceased to be kept at that site in 1955.

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[2] A. E. McGregor, "Report on Reconnaissance and Preliminary Surveys of the South Canadian River for Oldham and Potter County Texas" in Gov. Hannett Files, F. 202, Box 5, S/N 14153, n.p..

[3] Donald W. Whisenhunt, "The Texas Attitude Toward Relief, 1929-1933" *Panhandle Plains Historical Review,* 46 (1973), 95; Andrew W. Hackenhull to Arkansas Basin Commission attn Arch Hurley, December 2, 1933, in Gov. Andrew Hackenhull papers, Folder 202, Box?, S/N 13117, NMSRCA.

Year	1932	1933	1934	1935
Amarillo, TX	21.14" / 536 mm	12.22" / 310.4 mm	13.33" / 338.6 mm	15.49" / 393.4 mm
Bell Ranch	16.77" / 426 mm	13.43" / 341.1 mm	5.65" / 143.5 mm	12.99" / 329.9 mm

Table 3: Dust Bowl Yearly Rainfall

It is easy to imagine the winds whipping up the dry sands of the Canadian's bed, adding them to the swirling dust that coated the yucca and mesquite brush and turned cottonwood trunks tan. The next year was better, but not by enough to grow crops or even to hold down the soil, which had started to blow even where it had not been plowed. The Alamositas Division supervisor reported in July 1934 that the range was "very dry, grasses poor, Water scarce," and that the "weather [is] exceedingly hot and dry." As a result the decision had been made and he had "sold some cattle to the government and expected to sell some more." In February of the next year he noted that the weather continued to be "dry and windy during the month have had several bad dust storms." The crops at the farms were almost complete losses, even the sorghum and milo. The sandy pinto bean acres in New Mexico blew easily in the harsh southwest winds, while winter wheat shriveled and pasture land failed to green enough to sustain cattle that could hardly be sold on the depressed market. People in the region seemed to be running out of resources – financial, physical, mental – and some pled with their governors for help.[4]

[4] Boyd C. Pratt, Charles D. Bickel and Dan Scurlock, *Trails, Rails and Roads: The Central New Mexico East West Transportation Corridor Regional overview* Vol. 1: Historic Overview, (Santa Fe: New Mexico Historic preservation Association,1988), 155,157; Timothy Egan, *The Worst Hard Time: The Untold Story of those who Survived the Great American Dust Bowl* (Boston: Houghton Mifflin Co., 2006), 9; R.G. Bryant to Gov. Clyde Tingly, April 2, 1935, Gov. Andrew Hackenhull papers, Folder 202, Box?, S/N 13117, NMSRCA; Alfonso Griego, *Good-by My*

In 1933 the State of New Mexico began lobbying the federal government for assistance that would target the eastern part of the state. A dam on the Canadian would serve flood control purposes, thus benefitting those downstream, while also providing local employment and possibly recreation opportunities as well. The New Mexico State Engineer's office added its weight, although with some reservations, especially as to who exactly was supposed to be responsible for the project – the state engineer, who oversaw water distribution and water rights? The governor's office? Or maybe some new entity would have to be organized in order to streamline things. Federal funds were also needed to help deal with technical problems at Elephant Butte Dam on the Rio Grande River. Because of all of these things, State Engineer Herbert W. Yeo was not overwhelmed with enthusiasm for building a dam on the Canadian until his other difficulties were sorted out. However, residents of the Canadian Valley were excited about the idea.[5]

Letters arrived to Governor Andrew Hackenhull's office from all over the region. The San Miguel County Chamber of Commerce voiced its support of a dam at Conchas in November 1933 because the project would provide employment, create a lake that would attract tourists, justify a road across eastern New Mexico and provide flood control on the Mississippi. Mayor

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Land of Enchantment: A True Story of Some of the First Spanish-Speaking natives and early Settlers of San Miguel County ([Albuquerque?]: Alfonso Griego, 1981), 67; Boyd C. Pratt, *Gone But Not Forgotten: Strategies for the Comprehensive Survey of the Architectural and Historic Archaeological Resources of Northeastern New Mexico* Vol. 1: History of Northeastern New Mexico (Santa Fe: New Mexico Historic Preservation Division, 1986), 265-266; Bell Ranch Precipitation Records, RRVCC, CSWR; Amarillo Yearly Precipitation record, www.srh.noaa.gov/ama/?n=yearly_precip; "Range Reports" 1933, 1934, Box 24, Folder 9, and 1935, Box 24 Folder 10, Alamositas Division, Matador Land and Cattle Company Records, SWC, TTU; Geoff Cunfer, *On The Great Plains: Agriculture and Environment* (College Station: Texas A&M University Press, 2005), 148, 163.

[5] A.S. Stinnett to E. E. Blake, December 23, 1927 in Arthur Hannett Papers, Folder 202 Box 5, S/N14153, NMSRCA; Pratt, *Gone*, 255, 265; Arch Hurley to A.W. Hackenhull, January 30, 1934, in Andrew Hackenhull Papers, File 202, Box?, NMSRCA.

and city developer Ross D. Rogers of Amarillo sent the governor and the Arkansas Basin Commission a note the next month urging them to seriously consider a Conchas project. Amarillo was supportive because the city had outgrown its local water supplies and wanted water from the lake (notwithstanding that it would require a pipeline over two hundred miles long), and added that the jobs on the project would be nice too. Governor Hackenhull sent Arch Hurley of Tucumcari a telegram on December 19 confirming his receipt of the news that "People willing to form irrigation district to maintain program [stop]," adding the reminder that, "New Mexico will be governed by provisions of Chapter Forty laws nineteen twenty-seven act ratifying Canadian River Compact in matter of distribution of Canadian River Water [stop]." The tireless dam promoter Arch Hurley of Tucumcari replied in January 1934 that the "greatest draw back to the project" was the lack of a single body in the state to oversee it, and cautioned that conditions in eastern New Mexico were getting worse. "There were three army engineers here last week, looking over the site . . .and made a report that in this section we are 15% worse off than sixty days ago, this being due to no rain or snow up to this point." It seemed that everyone in the area was interested and enthusiastic about the possibility of a dam where the Conchas River joined the Canadian. There were, however, two notable exceptions to the general excitement: Albert Mitchell and Julian Day, the manager and the owner of the Bell Ranch.[6]

Herbert Yeo and his staff informed Governor Hockenhull that the best location for a dam would be near the Angosturas, the canyon narrows just below the Canadian-Conchas confluence on the Bell Ranch. This area included some of the Bells' best water and pastures, and Julian Day,

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[6] Las Vegas-San Miguel County Chamber of Commerce to A.W. Hackenhull, November 4, 1933; Ross D. Rogers to Arch A. Hurley and Arkansas Basin Commission, December 1, 1993; Andrew Hackenhull to Arch Hurley, December 19, 1933; Arch Hurley to A. W. Hackenhull, January 30, 1934, all in Folder 202, Andrew W. Hackenhull Papers, MNSRCA.

while sympathetic to the ranch neighbors' plight, was reluctant to sell or donate the land and right-of-way to the state. A flood control dam was not the primary problem in Day and Mitchell's minds, although it would cause difficulties for the Bell Ranch. The problem lay, to quote the Man Miguel Chamber of Commerce, in "other developments because 400,000 acre/feet or more of water . . .is a resource which will be further developed once a start is made." The tourism envisioned by residents of Las Vegas and Tucumcari would disrupt ranch operations and Albert Mitchell probably had visions of people sneaking under fences, panicked cattle, and livestock sick from eating scraps of sandwich wrappers. The prospect of having roads across the ranch to allow access to the lake for fishing, boating and swimming did nothing to mollify Mr. Mitchell, who greatly disliked the thought of breaking up the ranch's pastures, especially now that it was so dry and they needed to make best use of every bit of green growth and every drop of water.[7]

Visits by "committees" from the towns of Roy and Mosquero to "encourage" Albert Mitchell and Mr. Day to cooperate with the state also failed to warm either man to the idea. Arch Hurley did the state no favors when he went to Connecticut in early 1935 to visit with Mr. Day and the other stockholders, without any credentials or authority from the state. In part because of this, Day pointed out that there was no one in the state authorized to speak for New Mexico, since the State Engineer's Office was not involved and there was no other party specifically detailed to manage the state's water resources. That the Bell was receiving considerable help from the Soil Conservation Service in the form of Range Conservation Fund monies to improve the wells and water sources on the Bell did not matter to Mitchell and Day, especially after they

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[7] David Remley, *Bell Ranch; Cattle Ranching in the American Southwest, 1824-1947* Revised Edition (Las Cruces, NM: Yucca Tree Press, 2000), 288, 295; Michael E. Welsh, *A Mission in the Desert Albuquerque District 1935-1985* ([Albuquerque]: U.S. Army Corps of Engineers, 1985), 25.

learned in October 1935 that Arch Hurley and the governor had been telling the Army Corps of Engineers that the ranch had agreed to a right of way and land transfer – which they had not even been asked about. Governor Clyde Tingley grew more and more irritated with the Bell's owners as they insisted on receiving at least $100,000 for the land needed for the dam and right-of-way to maintain the structure while forbidding public access to the lakeshores for recreation. While the governor steamed, work on planning and lobbying for the dam continued apace.[8]

The ongoing difficulties with the landowners did not stop the governor, state senators and representatives from lobbying for a dam. The site at the Canadian-Conchas junction had been evaluated for water retention possibilities by the Bell Ranch's management as well as by the state of New Mexico because the canyon was relatively narrow with smooth walls 200 feet (60.96 meters) high, and only twenty or so feet (six meters) of sand lay between the riverbed and relatively solid shale bedrock. The pool would not flood out any settlements, and construction material could be dug and quarried from within two miles of the dam location. The proposed structure would be earthfill with a concrete gate and overflow rising 240 feet (73.2 m) from the riverbed and capable of holding up to 1,108,340 acre-feet (3.61×10^{11} gal, or 1.37×10^{12} l) of water. A smaller, concrete dam was also a possibility, but seemed less likely, according to the engineer's reports. Engineer Yeo included the cost of a diversion tunnel for an irrigation project in his 1930 calculations for the cost of the project, reaching a final rough total of $11,776,170 for the earthfill dam and $390,039.40 for the tunnel and canals to bring irrigation water as far as the fields near Hudson. Lateral canals to the Ag Experiment station northeast of Tucumcari and to Plaza Larga creek would cost extra, but did not need to be included in the initial project.

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[8] Louis E. Stoddard to the Honorable Frank C. Walker, October 19, 1935, in F. 208, Box 8, S/N 13102, Gov. Clyde K. Tingley Papers, NMSRCA. Stoddard was the Bell Ranch's lawyer and vice-president, Walker chairman of the national Emergency Council.

Undaunted by the projected cost of the project and inspired by the prospect of jobs and a new recreation area, valley residents set to work trying to get the dam.[9]

While Governor Tingley exchanged increasingly terse letters with Albert Mitchell and Bell Ranch vice-president and attorney Louis E. Stoddard, people from Las Vegas, Santa Rosa, Tucumcari, Logan, and Amarillo took action on their own. Arch Hurley of Tucumcari, the area's representative to the Canadian River Commission, went on speaking tours to Amarillo and other area towns, arguing and preaching for a dam, proclaiming that it would benefit Texas and New Mexico both by providing jobs and recreation opportunities that would bring more business to Texas as well as New Mexico. He and others appealed to regional pride and pointed out that this was a chance for locals to show the federal government just how serious they were about getting a dam on the river. By 1935 the only remaining obstacle seemed to be money – enough money to buy the land from the Bell Ranch.[10]

Part of the 1935 Emergency Projects Act authorized the Army Corps of Engineers to begin construction of a flood control dam at Conchas, New Mexico. On August 1 the Tucumcari Chamber of Commerce issued a "Vote of Thanks" for the project, even as fundraising continued apace. Everything seemed settled, but the Bell's owners balked and caused work to come to a screeching halt even before it really started. Albert Mitchell wrote to Captain Hans Kramer of the Corps of Engineers on September 2 that while Kramer and members of his staff were welcome to visit the ranch "at any time you may desire and to spend as long a time as you want" as private citizens, the Army Corps surveyors were forbidden entrance in their official capacity until further

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[9] Yeo, *Ninth Biennial Report*, 187, 190.

[10] James L. Briscoe to Clyde Tingley January 30, 1935; Wilbur C. Hawk to Clyde Tingley, May 18, 1935; Arch Hurley to Clyde Tingley, May 18, 1935; all in Folder 23, Box 8, S/N 13102, Clyde K. Tingley papers, NMSRCA.

notice. Governor Tingley in reply ordered the Army Corps engineers to continue working and stated that New Mexico would pay any damage claims "per Chapter 151-103, New Mexico Statutes, 1929 compilation and Chapter 130 Laws of 1933. The State Engineer assumes all damages from survey, borings et al." Meanwhile the Bell Ranch's attorney wrote to Frank Walker, chairman of the National Emergency Committee and advised him on September 6 that there was no entity in the state "with any authority to deal with us, although a body known as the Inter-state Streams Commission has brought condemnation proceedings on 34,000 acres of our land and the Court has selected appraisers." Furthermore, Stoddard informed Walker that the governor had offered the Bell stockholders $35,000 worth of irrigation and diversions in exchange for the land taken for the dam and reservoir. A month later Louis Stoddard wrote Walker again, stating that in addition to the agreed upon 17,000 acres (6880 ha) valued at $254,000 the state had originally said were needed for the dam, now the state wanted an additional 17,000 acres (6880 ha) for a park.[11]

Despite the Red River Valley Corporation's protests, the state began condemnation proceedings and valued the land at $100,000. According to the Bell Ranch's management, the state of New Mexico's valuation failed to take into consideration the high costs of fencing the area out of the ranch, creating new water sources for ranch livestock, and loss of pasturage sufficient for 1000 cows and their calves (and ten percent of the ranch's income) plus the $5,000 in labor to patrol and maintain the new fences. As a result, the ranch filed for an injunction with the New Mexico Supreme Court to stop the project, claiming that the project was not truly a flood control project but rather a public make-work effort, and that the land was being taken without due process, among other complaints. In their arguments, Mitchell, Stoddard and Day

[11] Remley, *Bell Ranch,* 295; A. Mitchell/ J.O. Seth to Hans Kramer, September 2, 1935, Folder 279, Box 8, S/N 13102, Clyde Tingley papers, NMSRCA.

suggested that if ranch were to get the water and other assistance that Arch Hurley had offered in the name of the state and the Army Corps (and that the Bell's owners had previously agreed to), the Red River Valley Corporation owners would accept the condemnation value, plus $65,000 for fencing and water conveyance. The Emergency Council, through the Army Corps, informed Governor Tingley that the federal government would build the dam, but acquisition of the site and right-of-way depended on the state, thus giving New Mexico's citizens the opportunity to show their own efforts and good will. If the land could not be acquired by October 22, the project would be cancelled and the funds redirected to a viable project. As a result of these developments, Governor Tingley turned again to the residents of the Canadian River watershed for support.[12]

New Mexicans and Texans responded by slowly raising pledges of funds to help the state buy the land if it could not condemn it. In Amarillo, seventy-nine businesses and individuals came forward. The Daily News pledged $ 300, the International Harvester implement dealer offered $ 500 and Amarillo Hardware put up four hundred dollars, while Café Marizon employees donated $7.50 and Cunningham Floral scraped together five dollars to add to the total of $6,000. Tucumcari was not remiss in offering help: Peterson Lumber gave the most with $500, and other donors included Arch Hurley, E. W. Bower, L.D. Stith, the First American National Bank, and the Gas Company of New Mexico among the total of 116 pledges for a total of $15,000. Some people could only promise five dollars, but they offered their mite. Las Vegas businesses including the Charles Ilfeld Company ($2,000), Gross Kelly Co. ($1500) and others also put forward pledges of cash to the tune of $5675 from twenty donors, even as the Red River

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[12] Louis Stoddard to Frank C Walker, 6 September 1935 and October 19, 1935, Folder 280, Box 8, both in S/N 13102, Clyde Tingley papers, NMSRCA; Welsh, *Mission in the Desert,* 24.

Valley Corporation fought the dam and condemnation in the State Supreme Court, while the dam's proponents sought still more funds.[13]

In order to make up the gap between the condemnation and the federal monies available, Governor Tingley went to the celebrations surrounding the opening of Boulder Dam in Nevada. While there, he visited with his friend Franklin Delano Roosevelt. Roosevelt agreed to release funds sufficient to buy the right-of-way and make everything possible, provided that information about the source of the additional money was kept quiet. Tingley kept the agreement secret, or so he thought, and continued encouraging local efforts to meet the Bell Ranch's purchase price. The bargain stayed a secret only briefly because Arch Hurley "spilled the beans" at the October 9, 1935 Amarillo meeting, generating the furious phone call recounted at the beginning of the chapter. Just as things were truly looking desperate for Tingley, Hurley, Stinnett and other proponents of a dam at Conchas, the Bell Ranch yielded just enough to make the dam possible.[14]

On November first the Bell Ranch owners made an offer of compromise. They would accept $165,000 and 2,500 acre feet (814,628,575 gallons, or 3,083,704,600 l, or 3,083,700 m^3) of water and the hardware necessary to move it in payment and damages in exchange for letting New Mexico buy 18,164.86 acres (7351.32 ha) of the ranch's land. On November four the State Supreme Court publically dismissed the Bell Ranch suit and eleven days later the Army Corps, State of New Mexico and Red River Valley Corporation signed agreements allowing construction to begin. The Governor's thoughts on the matter were summarized in an October 15

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[13] "Contributions to Conchas Dam Fund"[Amarillo] n/d; "List of Contributors to Conchas Dam Site" [Tucumcari]; Las Vegas Light and Power Co. to Clyde Tingley, October 19, 1935; all in Folder 280, Box 8, Clyde K Tingley papers, NMSRCA.

[14] Clyde K. Tingley and M. Alverson, October 9, 1935; "Conversation Between Governor Tingley and Mr. Alverson, National Emergency Committee, Washington D.C., October 12, 1935," both in Folder 280, Box 8, Clyde K. Tingley Papers NMSRCA.

conversation with Mr. Alverson of the National Emergency Council. "We have been through all the courts in New Mexico and hooked [the ranch owners] at every turn. . . . You can't satisfy them – you couldn't satisfy them if you gave them the state of New Mexico. They own 550,000 acres and only pay fifty cents an acre for taxes. . . They have a kingdom of their own." The governor and others directly involved in the Conchas project soon discovered that regal ranchers were only one of many difficulties that would have to be sorted out.[15]

Enthusiasm in the Canadian Valley for the project diminished a little as it became apparent that the work would be minimum wage and that no concessioners would be allowed to set up shops, boarding houses or other things at the work site, aside from those who obtained contracts from the Army Corps of Engineers. One early example of the frustration was that of George L. Lims, owner of the Lims Broomcorn Company of Tucumcari. He wrote to Governor Tingley on September 3, 1935 complaining that the Army Corps of Engineers and the Civilian Conservation Corps were using brooms made by convicts at Ft. Leavenworth. "It is injurious to New Mexican broomcorn growers . . .and an insult as well as an injustice to New Mexico's free labor and New Mexican industries." The governor passed the letter on to the Army Corps, which replied that they were required by federal law to use a certain percent of convict-made products in each project. One suspects that Mr. Lims was not mollified by their answer. Meanwhile, those already at the Conchas Dam construction site had larger worries, some of which spread to the surrounding communities.[16]

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[15] Clyde K. Tingley and M. Alverson, October 9, 1935; "Conversation Between Governor Tingley and Mr. Alverson, National Emergency Committee, Washington D.C., October 12, 1935," both in Folder 280, Box 8, Clyde K. Tingley Papers NMSRCA.

[16] George L. Lims to Clyde Tingley, September 3, 1935, Folder 279, Box 8, Clyde Tingley Papers, NMSRCA; Hans Kramer to Clyde Tingley 10 Sept 1935.

Even before construction began, hundreds of men had flocked to the arid and remote construction site in hope of obtaining a job on the project. On September 10 Captain Kramer sent an urgent telegram to the governor's office warning that "Typhoid fever present among squatters between Conchas and Newkirk STOP Representatives of Sate Bureau of Public Health advise epidemic probable and that they have no funds for medical care." That same day Dr. W. W. Johnson, the district health officer, reassured the director of the Bureau of Public Health that there had been only one case of typhoid fever, and that the problem was due to the lack of sanitary facilities available to the one hundred and fifty men squatting on dusty, scrub-covered rangeland belonging to a Mr. Maes. The men had paid three dollars a month for permission to camp there while they attempted to get a job on the Conchas project. The health officer advised his superiors to require Maes to provide sufficient sanitary facilities as well as potable water, and to require the Army Corps hospital at the construction site to admit any new cases of typhoid. Dr. Johnson noted that vaccinations of the squatters had begun September 9. The doctor also pointed out that "few if any of the squatters" were residents of New Mexico.[17]

The men camping in the brush, locals or otherwise, wanted jobs, even those that paid only $.25 an hour, and they were willing to travel to the back of beyond that was the Conchas site in order to find work. Construction was done largely by hand, using shovels, picks, wheelbarrows and horse-drawn scrapers. Since the local men knew how to make adobe, adobe bricks were used where possible. Heavy equipment also came into use, but in order to keep as many employed as possible, there were few opportunities to learn how to run the bulldozers and backhoes, at least for those men employed under the Works Progress Administration portion of the project. The contractors for the Army Corps hired Mexican nationals from California who

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[17] W. W. Johnson to J. Rosslyn Earp September 10, 1935, in Folder 281, Box 8, Clyde K. Tingley Papers, NMSRCA.

already knew how to operate heavy machinery, a fact that led to tension in the workers' camp and complaints from New Mexicans. The mandatory contributions paid by New Mexican employees to the state's political machine also drew protests, although mostly from the Army Corps' personnel on behalf of their workers. Despite the corruption, illness and complaints, work on the dam moved quickly.[18]

The continuing drought in some ways made construction easier since there was very little water to be diverted out of the dam site and little rain fell to slow construction. The Bell Ranch headquarters, 12 miles (19.3 km) from Conchas, reported 9 inches (226 mm) of precipitation in 1936, 14.3 inches (363.2 mm) in 1937 and an even better 16.1 inches (409) the following year. Amarillo's water fortunes improved as well when, after a low of 12.2 inches (310 mm) in 1933, the city got 15.5 inches (393.7 mm) in 1935, then 19.6 inches (501.7 mm) of precipitation the following year and a respectable 17.10 inches (434.3 mm) in 1937. Although still too little precipitation for a good wheat crop, at least it was moisture and was enough to help those who still had some grass. Meanwhile, federal money also poured into the High Plains through more than just Army Corps contracts.[19]

Much of the High Plains was in the area called the Dust Bowl. Land plowed for wheat and carefully dust-mulched blew away when the rains failed while the wind continued to blow. Cimarron County, OK and Dallam County, TX were two of the hardest hit counties, but all of eastern New Mexico and the Texas Panhandle suffered, either from drought or from dust storms that brought other peoples' topsoil raining down onto good land and sifting through every gap,

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[18] Welsh, *Mission*, 43,46.

[19] Bell Ranch Official Weather Observations, 1934, 1935, Red River Valley Corporation Collection, CSWR; Welsh, *Mission*, 46.

crevice or crack in buildings and cars. Money from an oilfield job did not help people trying to cope with gritty meals, dusty bed sheets and omnipresent dirt.[20]

Cattle and cattlemen suffered as much as the farmers and towns folk. Livestock and people suffered the effects of breathing fine dust and bacteria all day for months, and "dust pneumonia" carried off the young and the old, humans and bovines both. The Canadian dried to a trickle when the rain and snow stopped, and some of the springs failed as dust choked them and the water table dropped. It is easy to imagine frustrated ranchers watching herds of thirsty, starving cattle trying desperately to find forage and moisture on the sand flats where the river had once run. People tried to find substitutes for grass: Tómas Wesley Brown and his father chopped yucca to feed their cattle on in 1932-33. By the next year people around the Browns began leaving. "The valley was beginning to be abandoned by most of the original homesteaders," and was reverting to ranch land. Those who could hunkered down, leaned on their spring-watered or windmill-irrigated gardens, bartered and traded and hoped for more rain next month, next year. Amid all the bustle and furor surrounding the dam at Conchas, other aspects of Canadian Valley life went on as best as people and companies could manage.[21]

In Oldham County, the manager of the Matador Ranch's Alamositas Division sold some cattle to the federal government and hoped for rain. "Had very bad wind all day. Bad dust storm," noted the Alamositas Division manager on March 18, 1933. In the weeks that followed he recorded that they " . . . had heavy dust storm today" and "had dust storms today." April first

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[20] Donald Worster, *Dust Bowl*, 25th Anniversary Edition (New York: Oxford University Press, 1998),131.

[21] Tómas Wesley Brown, *Heritage of the New Mexico Frontier,* (New York: Vantage Press, 1995), 119, 121; Gunnar Brune, *Springs of Texas* 2nd Ed., Vol. 1, (College Station: Texas A&M University Press, 2002), 35,37, 157; Paul H. Carlson, *Amarillo: The Story of a Western Town* (Lubbock: Texas Tech University Press, 2006), 135.

was "very windy and dusty", followed by a dust and sand storm on the fourth. Later that month, the Matador shipped 3000 head of cattle to Kansas and to parts of Texas that were not a dry as the High Plains. In June the Rita Blanco pasture was abandoned for lack of water and the cattle moved to the Canadian Valley. Those cows that were nursing calves were especially bad off, but improved quickly after rains in August refilled the ponds and refreshed the close-cropped grasses. The following years brought more of the same, along with concerns about the long-term effects of the drought on the grasses and other plants in the Breaks. The manager also kept an eye on the WPA road project then underway that would connect Channing, where the Division headquarters were, with Vega, the Oldham County seat on the south side of the Canadian. The workers finished the north side on September 21, 1935, and were about to start work on the south side of the river. Because of its geographically spread properties, the Matador Ranch and its owners fared better than did those ranches and ranchers who were constrained to only the land they had in New Mexico or Texas. Cattle born in the shelter of the Breaks and overwintered there were then moved to Montana or even into Canada to mature and fatten. Although the ranch did not make a great deal of profit for its owners, the Matador's cowboys and other workers at least had jobs, shelter and more-or-less regular meals, unlike many.[22]

Those who could no longer hold out turned to charity and to the government to help them survive and to stay on the plains and Breaks. The New Deal's "alphabet agencies" assisted many residents of the Canadian watershed. Direct assistance via work relief with the Civilian Conservation Corps, Army Corps of Engineers or on Works Progress Administration projects helped bring needed income to families. Soil Conservation Service advisors studied the damaged and barren fields and pastures and provided better ways of dealing with eroded ground and

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[22] Ranch Manager's Diaries, 1933, Box 24, Folder 10 and 1935, Box 24, folder 12, Matador Land and Cattle Company, SWCTTU.

blowing topsoil, while the agency made special equipment available for those who wanted to put the new techniques to use. The SCS also purchased some of the worst-eroded land, eventually turning it over to the Bureau of Land Management or National Forest Service to manage as the Rita Blanca and Cimarron National Grasslands. Payments from the Agricultural Adjustment Agency and its successors helped soften the blow for some farmers and ranchers who lost all their livestock to starvation or government slaughter. Even as the region was working together to bring order and a measure of control to the Canadian River, the federal government was becoming more and more involved in both daily life and the functions of the Canadian River. As a result, when the gates closed at Conchas Dam, the federal government through the Army Corps of Engineers controlled the Canadian, not New Mexico or Oklahoma. But the stream below the Conchas floodgates was a rather different river from what had once been there.[23]

A flood in 1937 delayed work, but construction proceeded year around and Conchas Dam rose where once had been Comanche camps, Hispano settlements, a *pastores*' ford across the Canadian and the Bell Ranch's pastures. On December 29, 1938 the gates on Conchas closed, trapping 550,000 acre feet (67,841,4000 m^3) of the Canadian and Conchas Rivers' flow behind walls of earth and concrete 235 feet (71.4 m) high and 1250 feet (379.8 m) long, with an additional four miles (6.4 km) of earthen dikes stretching out to the sides. The project's final cost was fifteen and a half million dollars. Once the gates closed, the river's behavior began changing just downstream of the dam's face. The water eventually released from the reservoir was "hungry" because it had left all its sediment behind in the growing lake. The lake acted as a settling pool that allowed the sand and silt to sink out of the river's waters and onto the bottom of

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[23] Worster, *Dust Bowl*, 131, 190, 210; Carlson, *Amarillo*, 130-132; J.O. Woods, "Report on Trip to Northeastern New Mexico to Investigate Wind Erosion" Folder 6 Box 11 F, U.S. Soil Conservation Service Records 1919-1953, CSWR; Whisenhunt, "Texas Attitude Towards Relief," 95, 107; Brown, *New Mexico Frontier,* 121.

the reservoir. As a result, the Canadian's hungry waters eroded sand and silt from the riverbed downstream of where they left the dam, repeating a process that had happened so many times before in the stream's long history. The near cessation of floods to scour out the banks allowed willow and other plants to re-colonize the edges of the channel, further narrowing the river. Meanwhile, plans were already afoot within the Bureau of Reclamation to begin work on the irrigation system that would draw water from Conchas via earth-lined canals and make the plains around Tucumcari bloom once again. The Army Corps of Engineers office in Albuquerque congratulated itself on the successful completion of the dam, even as the river quietly chewed down in its bed before wandering eastwards once more.[24]

The Canadian flowed through a changed valley once the rains returned. Mesquite spread rapidly into overgrazed pastures and abandoned fields, turning grasslands into brush country. Another plant, this one introduced to the United States because of its lovely pink flowers and ability to slow erosion, also began working its way downstream along the Canadian. Salt cedar, a tamarisk native of the Middle East, had already choked parts of the Pecos River valley and filled in a large part of McMillan Reservoir. By 1940 the tree appeared along the Canadian, its silvery foliage and lovely pink flowers concealing the damage it would eventually cause and even the great floods of the 1940s failed to dislodge the tenacious new addition to the valley.[25]

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[24] Welsh, *Mission*, 51; Garnett P. Williams and M. Gordon Woolman, "Downstream Effects of Dams on Alluvial Rivers" Geological Survey Professional Paper 1286 (Washington D. C.: U.S. Government Printing Office, 1984), 14,23.

[25] Stephen Bogner, *Ditches Across the Desert: Irrigation in the Lower Pecos Valley*, (Lubbock: Texas Tech University Press, 2003), 219; Ken E. Rogers, *The Magnificent Mesquite* (Austin: University of Texas Press, 2000), 48, 49, 55; H. L. Bently, "Cattle Ranges of the Southwest: A History of the Exhaustion of the Pasturage and Suggestions for its Restoration," *USDA Farmers Bulletin* No. 72 (Washington, D.C.: Government Printing Office, 1898), 7, 13.

The river itself remained unpredictable despite the new dam – between September 30 and November 15, 1941, the river remained above flood stage because of heavy rains in New Mexico and Texas, just a few months after peaking at the highest discharge ever recorded for a single event – 135,000 cubic feet of water per second had flowed past the Canadian River Bridge gage on July 25. These very high, sustained flows of water surged through Texas and into Oklahoma while Amarillo's civic leaders watched and no doubt wished there was some way to stop the flow and hold it against future need, and while area residents wondered how they would get to Amarillo to go shopping or conduct other business if the bridges washed away yet again. Quicksand still caused problems for the unwary and experienced alike, and the lack of bridges between Amarillo and Logan made life at Cal Farley's Boys' Ranch as exciting and challenging as it had been for residents of Tascosa, for Casimero Romero, and for the Native Americans who had gone before. And in 1946 Ynocencio Romero, now a resident of Amarillo and father of three grown children, took local historian Ernest Archambeau on a tour of Romero Plaza and old Tascosa, pointing out where the Canadian had once been.[26]

The Canadian no longer flowed free. A new era in the region's history had arrived with the first shovel of dirt turned at Conchas. Now the river was not just a matter of local concern, but one that belonged to the federal government. Regional need brought in national agencies and attention and although they were a far cry from seemingly all-powerful organizations such as the Tennessee Valley Authority, the Army Corps of Engineers, Bureau of Reclamation and Soil Conservation Service would make their presence known. Cattle still grazed along the Canadian's

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[26] Jose Ynocencio Romero, "Spanish Sheepmen on the Canadian at Old Tascosa" as told to Ernest R. Archambeau,*Panhandle Plains Historical Review* 19 (1946), 73; "Peak Streamflow" for the Canadian River at the Canadian River Bridge, Potter County, Texas, site number 07227500, http://nwis.waterdata.usgs.gov/nwis/peak?site_no=07227500&agency_cd=USGS&format=html. Last Accessed 18 November, 2009.

banks in New Mexico and Texas and farmers cultivated winter wheat and sorghum on the upland plains, no doubt reading the latest war news and wondering if they could get parts for their tractors. Homesteaders' abandoned farmhouses leaned slowly northeastwards as the prevailing winds battered them to the ground, while bunchgrasses returned in some places when farming retreated. What had begun in the 1910s had happened again during the 1930s as people gave up after trying to farm on too little land with too little moisture. It was a cycle almost as old as the Canadian's cycle of downcutting and deposition – people advanced and people retreated with advance and retreat of the rains.

When the gates closed at Conchas, most of the Canadian in Texas and New Mexico returned to being a river of cattle. Ranching remained the center of the area's economy, followed by farming and tourism. The Canadian downstream of the Bell Ranch rose and fell with the permission of the Army and the presence or absence of rain and snowmelt. Still too rough for plowing, the Canadian valley and Breaks harbored deer, cougar and white-faced cattle, wild turkeys and cowboys, and boys in need of the second chance provided by Cal Farley, Julian Bivins and the remnants of Old Tascosa. The valley seemed wild still, but the river was wild no more.

Conclusion: Mesquite, Dams and White Face Cattle

Humans, even as they dreamed of ever-larger water control projects, still had difficulties coping with the chaotic nature of the Canadian River and the physical environment of the Texas and New Mexican High Plains. Despite the hopes of A.S. Stinnett, Frank Cabeza de Baca, Arch Hurley and the other, unnamed residents of the Canadian River watershed who had thought that taming the Canadian would make the valley into a prosperous and populous region, damming the stream did not solve the region's problems or simplify the task of living with the river. Part of this was due to the agencies responsible for the dams: their activities imposed an additional layer of control and regulation over the stream and the region surrounding the river, another aspect of the increasing direct and permanent federal government presence in the High Plains that began during the Dust Bowl and Depression. The Canadian did succumb to human control, mostly, when the construction of additional dams at Fritch in Texas (north of Amarillo) and at Logan in New Mexico, combined with twentieth-century groundwater pumping, tamed and drained the river's waters into near non-existence. To see some of these changes to the river valley, let us take to the skies once more, this time in 2009.

Imagine a lovely early autumn day on the High Plains, a good day for traveling. A red-tailed hawk soars along the Canadian River south of Raton, New Mexico not far from the river's headwaters. Her sharp eyes note patterns of lines on the ground extending away from the stream, with green fields around them. Father downstream the river passes by clusters of earth-brick and metal buildings, some occupied, some abandoned to the elements, before the Canadian drops into the twisting, tight-walled gorge. A little water flows down the sandy and rocky canyon below the hawk's wings, but not much. It is early fall in an average year, and despite the seasonal dryness

the hawk has fared well on rodents living in the fields and pastures. To the east, a gleam of white marks the first towers of cloud where storms are building. The raptor feels the air surge under her wings and circles up in the unstable air, gaining height before she moves on.

The afternoon sun shimmers on Conchas Lake and the bird banks her wings, turning east. There is little to eat among the vacation homes and golf course, the boat ramp and parking lots around the dam and so the bird soars onwards over the mesas and valleys around the river. In places the stream's tributaries are invisible, their channels choked with water-stealing tamarisk. Even the prairie dogs and mice have given up on those areas, and there is no point in wasting energy hunting the thickets. Instead the hawk turns south, away from the river valley, and searches for her prey near the city of Tucumcari. Mice, rabbits, and snakes lurk in the stubble of harvested crops irrigated by the Canadian's water, and the raptor soon stops on a fence post beside the interstate, tearing hungrily into a foolishly bold cottontail. The storms have stirred up the air, making flight difficult, but she is well fed and finds shelter from the winds and cold rain in some cottonwood trees near an abandoned farmhouse.

If you were to take to the air from Tucumcari Municipal Airport after the storms pass and continue east along the river, the Breaks would seem much as they had in 1850, at least at first. No roads cross the river between Logan and Boys' Ranch, although lightly used trails still lead down to the stream. These are private ranch roads and the land's owners do not always take kindly to uninvited guests. The Canadian narrows a little as it winds through the Breaks, but not because the *tules* and tall grasses have returned. Instead of hackberry and big bluestem, now mesquite and tamarisk narrow the river channel by stabilizing its banks. Indeed, mesquite covers the slopes of the Breaks north and south of the Canadian, replacing the open grasslands with a maze of green, thorny brush. Yucca and prickly pear and ocatillo cactus are also easy to find.

Fences running across the rolling land mark ranch boundaries but the deer and bobcats, wild turkey and an occasional cougar still manage to find their way up and down the river valley. Eventually you fly over a narrower, deeper stretch of stream that turns into a marsh and then a twisting lake. Lake Meredith, named for one of the area's leading boosters and river-control proponents, comes to an end at Sanford Dam. From here the Canadian flows unencumbered, although much smaller, east towards Oklahoma.

Back at Tucumcari, Interstate Forty (I-40) has replaced the Canadian as the region's primary transportation route. Just beyond the sight of drivers following the seemingly endless four lanes of concrete, soybeans and maize, cotton and pinto beans, and alfalfa for the new dairy farms that have moved into the region all ripen towards harvest. On billboards along the interstate, Tucumcari boasts of its community college, of its hundreds of hotel rooms and restaurants, of the Mesalands Dinosaur Museum, and of Conchas Lake. Gates on the interstate, standing open and unused on this cool September afternoon, warn that in winter the vital thread of cement sometimes closes between Tucumcari and Amarillo. East of Tucumcari there is no shelter from the storm when blizzards come, only the little settlements of San Jon and Endee and then more miles of ranch land. Once the interstate climbs the Caprock, there are miles of open winter wheat fields and pastures until one reaches Vega and then Amarillo. This stretch of I-40 is no place to be stranded when the snow flies on fifty-mile-an hour north winds. New Mexico's Canadian River lowlands remain a corridor, carrying people and goods from the mountains to the plains. But now it is "fly-through" country as well as "fly-over" country, with 75 mph speed limits and billboards luring drivers to stop "just one hour ahead."[1]

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[1] Preceding three paragraphs based on author's observations July 13, 2009 and September 22, 2009.

The story of the Canadian River illustrates a number of different ideas and themes within environmental history, regional history and the larger story of humans' interaction with their physical environment and with each other. One of those themes is the role of humans within their physical surroundings. Like the bison of the shortgrass steppe, humans were and are a keystone species. Their actions affect many parts of the Canadian River's story as different cultural groups entered the area, tried to achieve and perpetuate what they saw as "the good life," and dealt with the changes that their activities and that climatic variations had on the physical environment. As the ecologist Robert V. O'Neill points out, humans play a central role in their ecosystems, wherever they happen to be. Native Americans, along with wolves, were the top predator on the bison herds, especially after the introduction of horses to the Great Plains. The replacement of bison with sheep, domestic cattle, and horses, also done by humans, changed the species composition of parts of the Canadian watershed. While the eating habits of the bison encouraged the dominance of buffalo grass and certain of the grama grasses, human eating habits brought domesticated grasses (wheat, sorghums, and maize) to the region. On a much grander scale than the earlier beaver, Hispanos and Anglo-Americans built river control structures along and eventually across the Canadian. Human culture determined to an extent just how the peoples modified their environment, and how they imagined what their ideal surroundings would be.[2]

Human migration into and through the region shows how this played out. Unlike the traditional narrative of constant westward expansion across the Great Plains and High Plains, here the initial tide of settlement washed from west to east with the Comanches and Hispanos moving out of the Great Basin and the Rio Grande Valley respectively onto the High Plains and

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[2] Robert V. O'Neill, "Is it Time to Bury the Ecosystem Concept? (With Full Military Honors, Of Course!)" *Ecology* 82 No. 12 (2001), 3279.

along the Rio Colorado, adapting to their surroundings as they went. Water historian Michael C. Meyer and cultural geographer Richard L. Nostrand theorized that Hispanos, descended from a culture long-adapted to life in semi-arid climates, experienced "ecoculturation" (Meyer's term) or "bonded to their environment" as Nostrand phrased it. To an extent they modified their behaviors to match the realities of the limited water in the region and retained the legal practices of Spain regarding water distribution and use, even after the imposition of the common-law riparian tradition of the United States. However, as with the Comanches before them, this does not mean that the Hispanos lived "in harmony" with their environment. They moved eastwards because of overcrowding and overgrazing in the Rio Grande watershed that forced shepherds to push onto the plains in search of more pasture for their rapidly growing flocks of sheep. Much as the Comanches had de-forested parts of the Canadian River valley in order to feed their horses, the Hispanos' flocks probably overgrazed the riparian vegetation and the tall-grasses of the Canadian River breaks.[3]

To borrow from Frederick Jackson Turner's "Frontier Thesis," first the Indians claimed the region, followed by hunters and traders, then ranchers and finally town builders. But these ranchers owned more sheep than cattle, and founded settlements that looked south and west to Spanish and Mexican traditions instead of to British antecedents. There were homesteaders and land speculators, including the Gallegos-y-Baca family and Casimero Romero, but there were also *peons* and *patrons* who owned land holdings that shared a great deal of culture with the *estancias* of northern Mexico. Anglo-American legal and economic practices crept into the area decades before the first U.S. and British-born ranchers moved onto the plains, and the Hispano *ricos* who possessed the resources and knowledge took advantage of them to amass large land

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[3] Robert MacCameron "Environmental Change in Colonial New Mexico" in James E. Sherow, ed. *A Sense of the American West* (Albuquerque: University of New Mexico Press, 1998), 48, 53.

and livestock holdings. Where land laws were not as favorable, or as open to manipulation, Hispanos faced a more difficult time keeping the land they claimed. Control of water and of the Canadian Valley's other resources were the key to the soon-arriving Anglos' success or failure, just as they were for the Comanches and Hispanos before them.[4]

Comanche, Hispano and Anglo actions affected the Canadian River, especially when their habits and practices were combined with the changing weather patterns that occurred at the time of the end of the Little Ice Age. Comanche horse herds competed with the bison for the tall grasses of the valley, while the horses' owners cut down trees for fuel, lodge poles and stakes, and to get bark for horse fodder. After the Comanches were forced out of the Canadian watershed, Hispanos drew on the same resources, as well as grazing ever-larger flocks of sheep in the valley and on the uplands. Hispanos, including the Romero-Durand and Gallegos-Baca families among others, established both seasonal and permanent settlements, tapped the tributary streams for irrigation, and left their own stamp on the valley. It is impossible to know how the localized overgrazing by the tens of thousands of sheep introduced to the Canadian Valley by the *ricos* would have affected the river over the course of decades, but the evidence from other locations suggests that it could have caused many of the same alterations in the river that were witnessed later, when domestic cattle dominated the region. As a result, whether the extensive

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[4] Frederick Jackson Turner "Significance of the Frontier in American History." *Annual Report of the American Historical Association for the Year 1893* (Washington D.C.: GPO and American Historical Association, 1894) accessed through: www.library.csi.cuny.edu/dept/history/lavender/frontierthesis.html; Thomas W. Kavanagh. *Comanche Ethnography: Field Notes of E. Adamson Hoebel, Waldo R. Wedel, Gustav G. Carlson and Robert H. Lowie* (Lincoln: University of Nebraska Press, 2008) 188; Michael C. Meyers, *Water in the Hispanic Southwest: A Social and Legal History 1550-1850* (Tucson, AZ: University of Arizona Press, 1984), 4; Richard L. Nostrand, *The Hispano Homeland* (Norman: University of Oklahoma Press, 1992), 24-25, 214; Maria Montoya, *Translating Property: The Maxwell Land Grant and the Conflict Over Land in the American West, 1840 - 1900* (Berkeley: University of California Press, 2002), 2, 72, 219.

land use practiced by the Hispanos would have been sustainable over time remains unknown, although their legal culture and its ideas of community water ownership and "sharing the shortage" derived from centuries of life in a semi-arid climate would have worked well, assuming it would have been allowed to operate beside the existing Texas water laws. In short, there was no period when Native Americans or Hispanos lived simply and in harmony with "nature" (however defined). Neither the Comanches, nor the Hispanos, nor the earlier Antelope Creek people had lived in static environments or with an unchanging river.[5]

The arrival of Anglo-Americans and industrial ranching coincided with drought, the combination of which led to changes in the Canadian's inner channel and local hydrology where geology permitted. The river had aggraded in the past, but the "grazing-out" of the Breaks, tributary valleys and riparian areas sped up the process and caused the river to revert to being a sandy, braided, shallow stream in places where it had been narrow, deep and clear. Instead of a simple tale of cattle causation, the Canadian's story proves to be convoluted and chaotic in the sense of demonstrating the unpredictable alterations and unforeseen consequences from environmental and anthropogenic actions.

As shown above, the Canadian River narrative goes beyond a simple tale of decline and fall from ecological harmony. It is tempting for historians of the Great Plains and of other environments to look back on the days of the Native Americans, or of the Hispano settlers, as being a golden era. One example of this is the popular work, *The Worst Hard Times* by journalist and oral historian Timothy Egan. He argues that it was the Great Plow Up of the 1910s and 1920s that led directly to the human hardships and the soil loss of the Dust Bowl. The

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[5] Malcolm Elbright, "Whisky is for Drinking, water is for Fighting: Water Allocation in Territorial New Mexico," *New Mexico Historical Review* 81, No. 3 (September 2006). See also Robert MacCameron "Environmental Change in Colonial New Mexico" in James E. Sherow, ed. *A Sense of the American West* (Albuquerque: University of New Mexico Press, 1998).

Comanches and even the great ranches had been better for the land than were the cash-hungry farmers who settled the High Plains, according to this line of thought. Farming, as Egan describes it, turned the lush grasslands and river valley into a barren, blowing wasteland. Donald Worster's earlier and somewhat more academic work *Dust Bowl* tells a similar story of the deleterious effects of capitalism in the form of over-expanded wheat farming as the cause of the Dust Bowl. As Robert O'Neill points out, these "fall from paradise" narratives assume that there was some stable and ideal environment to begin with, and that humans lived at one with, or in harmony with it. But the Canadian River has rarely been stable – its only constant is stochasticity and the tendency to change with the seasons and the climate. And the climate has been changing in varying ways and at different speeds ever since the planetary atmosphere thickened enough to support winds and precipitation. And as the story of the Comanches shows, overhunting, drought and overgrazing occurred without the presence of Anglo-American farmers or corporate agriculture cutting up the grass and tapping the river's waters.[6]

One question among many that historians of western water have debated and discussed is that of what role water control played in regional political development. Donald Worster, drawing on the work of the Chinese-history specialist Karl Wittfogel, argues that the 19th and 20th centuries witnessed the development of a "hydraulic empire" of top-down control over the waters west of the 100th Meridian. Only a strong central government such as that of Imperial China or the one that emerged in the United States in the 20th Century could develop and regulate the waters of the west, in Worster's example those of the Colorado River Basin. This in turn led to the dominance of federal management over regional interests and the loss of possible small-

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[6] Timothy Egan, *The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl* (New York: Houghton Mifflin, Co., 2006), 10, 25; Donald Worster, *Dust Bowl* 25th Anniversary Edition, (New York: Oxford University Press, 1998), 6-7.

scale solutions to the problems of the arid region. As Wittfogel's research demonstrated, the optimum solution to a water (or other resource) control difficulty for the *state* was not necessarily the optimum for an *individual*, or even for a locality, suggesting that state control could be harmful to local interests, a hypothesis that Worster supported. In contrast to Worster's understanding, the Canadian River story suggests that the historian of California's water development, Norris Hundley, is closer to the actual case, as is Rio Grande specialist Douglas R. Littlefield. Management of the Canadian began at the local and state level, only involving federal control at a relatively late stage. Even then the *State*, in the form of the Army Corps of Engineers and Bureau of Reclamation, was subordinated to more local interests.[7]

Instead of a strong central power regulating the stream, the states and private interstate groups did much of the work until economics and politics led to federal involvement, and that on a piecemeal basis until the late Twentieth Century. Even in the year 2010, regional interests in the form of the Canadian River Municipal Water Authority exercise as much if not more influence on the river and its valley than does the federal government. Eleven cities, the members of CRMWA, determine allocation of the Canadian's water from Lake Meredith. CRMWA directs state, local and federal resources towards water-quality control through salt remediation and salt-cedar eradication, among other activities. It is possible to argue that this is simply because the Canadian River is too unimportant for the federal government to take great interest in it, unlike the Colorado River, and that by providing grant monies, the federal

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[7] Donald Worster, *Rivers of Empire* (New York: Oxford University Press, 1985) 7, 22, 28, 259-260; Karl Wittfogel, *Oriental Despotism* (New Haven, CT: Yale University Press, 1957), 2-3, 22, 129; Norris Hundley, *The Great Thirst: Californians and Water – A History* (Berkeley: University of California Press, 1992), xvi, 407, 412-414, 416; Douglas R. Littlefield, *Conflict on the Rio Grande: water and the Law, 1879 -1939* (Norman: University of Oklahoma Press, 2008), 11, 15, 218.

government *does* control the system at the expense of local freedoms and solutions. However, at least as late as 1938, local and state practices, ideas, efforts and laws played a greater role in the story of the river than did national interests.[8]

However, even the federal government's intentions and goals for the river are subject to the physical climate of the High Plains and to the clouds that form, release their snow or rain, or simply drift across the Canadian watershed. The meteorological climate of the region still dominates life much as it did when the Comanches were "lords of the South Plains." The same could be said for much of North America – drought and floods affect all parts of the continent, but not with the same frequency and intensity as in the semi-arid and arid zones. Since the mid Twentieth Century Anglo-Americans in Texas and New Mexico have tapped the Ogallala Aquifer's fossil waters but they still depend on rain and snow and the flow of the Canadian for many things. Because this heavy use of the Ogallala's groundwater has lowered the water table and thus weakened or dried up many of the springs feeding the river, the Canadian is even more sensitive to the presence and absence of precipitation within its watershed than it was before 1950. Dust storms remain a possibility, especially between February and April when the winds arrive but the rains do not. Drought, when it comes, discourages tourists as well as causing problems for farmers and ranchers across the region. Despite improved irrigation technology that has made precision watering and direct-to-root subsurface irrigation possible, rain and snow frequently determine the outcome of the crop year for both irrigated and dry-land crops. The Canadian River itself varies with the season and year, sometimes vanishing completely between Logan and Amarillo, sometimes flashing up from one foot to four feet in depth in the course of an hour. Many modern Anglo-American residents remain at least partly dependent on the river,

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[8] Hundley, *Great Thirst*, 412, 414; "CRMWA- Salt Cedar Management" www.crmwa.com/salt%20cedar.htm.

and on the precipitation that feeds it, much as the Hispanos and early ranchers did. Tourists visit Lake Meredith, Ute and Conchas lakes, and the eleven cities and towns in the CRMWA use river water, augmented by well water. Ground water is a cushion and an insurance policy, but rain and snow, heat and cold still determine if the period will be remembered as a good or as a bad year. In short, the Canadian River and the physical environment still matter, even if they do not completely determine the course of lives in the region.[9]

Through the Canadian River's story runs another thread – that of conflicts. People struggled to maintain their preferred cultural patterns in the face of drought and flood, of vanishing bison or an abundance of horses. The Comanches competed with both Hispanos and Anglos for the resources of the Canadian River valley, just as Anglos later fought among themselves for access to the most profitable land. People also fought with the Canadian River as well as over it: quicksand, floods and droughts made building bridges and highways difficult, while high water swept away the first attempts at irrigating from the main stream. Politics too entered into the mix, as residents of the watershed competed with other people in the country for federal funds and expertise in order to build the Conchas Dam and the irrigation district that later drew on the stored waters.

These conflicts also included differing ideas about the best use of the river. The biologist and philosopher Richard Dawkins coined the term "meme" to describe ideas and fragments of culture that struggle to propagate and continue their existence in ways similar to those of biological genes. By the time the gates closed on Conchas Dam, the dominant memes belonged to the Anglo-American capitalist culture, which placed cash value on the river and its valley

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[9] To view an example of the Canadian's recent flow January 3-February 2, 2010, visit: http://waterdata.usgs.gov/nwis/uv?cb_00065=on&cb_00060=on&cb_00045=on&cb_00095=on&cb_00010=on&format=gif_default&period=30&site_no=07227500.

based on what it could be used for – livestock raising, irrigation and tourism. The Hispano meme of "sharing the shortage" and the Comanche's meme concerning the Canadian's intrinsic *puha* failed to reproduce because they were overpowered by the Anglo-American ideas. Some cultural traits lingered in the corners as place names, ranching culture and local legends about Quanah Parker, Casimero Romero and the XIT Ranch.[10]

The story of the Canadian River also tells us more about the broader history of the western United States. In the relatively small space and short time considered, the complexity of the region becomes apparent. The traditional narrative of Native American simplicity, Hispano limitations and Anglo-American expansion at the expense of the physical environment and of previous residents grows weaker. Humans remain a keystone species, shaping much of the river's story, but the role of climate and changing weather in the region is almost as central. Climate alone did not determine the success or failure of the various groups who tried to establish permanent presences in the region, but it certainly influenced their decisions and actions and reactions. Human and non-human elements intertwined to form the tapestry that is the Canadian River's story.

Topographically and culturally the Canadian River remains a vital part of the regional identity. Amarillo and Dalhart use ranching heritage tourism to draw visitors interested in the legendary XIT Ranch and the world-famous Charlie Goodnight. Every summer the musical drama "Texas," shown in Palo Duro Canyon, portrays Quanah Parker and Goodnight and other characters for guests from all over the world. Tucumcari depends on tourism, and visitors to Ute Lake provide the core of Logan, New Mexico's revenues. Students learn about the XIT and other ranches, about the Comanche and the buffalo hunters in grade school, although in both Texas

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[10] Richard Dawkins, *The Selfish Gene* Second Edition (New York: Oxford University Press, 1989), 192.

and New Mexico the state history curriculum focuses on other parts of the state: the Rio Grande valley in New Mexico and central Texas's Edwards Plateau, Coastal Plain and Cross Timbers. The Amarillo Chamber of Commerce tourism arm urges people to "Step In To the Real Texas." Eastern New Mexican boosters focus on Conchas and Ute Lakes, paleontology and Route 66, and talk about developing agro-tourism and guest ranches. Interstate panels discuss salt cedar and water quality, and Hispanos and their more recent Mexican-American cousins take pride in having settled the area before Anglos ever did. And the Canadian, the Rio Colorado, trickles along, watering cattle, tourists, deer and wildcats, cities and lawsuits as it cuts its way through the High Plains.

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Appendix A - Terminology

Aggrading – a stream that is building up its channel by depositing material in the river bed, burying the older sediments.

Anastamosing: a stream that is divided into many channels within the main riverbed, often divided by sandbars or small islands. A main channel may not be evident within the river banks.

Anglo-American or Anglo-Texan: The Caucasian men and women coming from Europe or the United States to settle the High Plains.

Cíbolero: a Hispano who hunted the bison on the High Plains. Often the subject of popular songs, such as the *corrida* about Juan Maés, who was killed on the Llano.

Cimarron: Spanish for "wild" or "uncontrollable."

Comanchero: a Hispano who traded with the Comanches. Not as well respected as the *ciboleros*, especially by upper class Hispanos and Anglos.

Degrading – a stream that carries away more sediment than it deposits, thus cutting its channel deeper into the bed or the surrounding terrain. A gulley or arroyo is an extreme example of a degraded stream.

Dry-land farming – farming without irrigation, often using specially bred crop strains or ground-working techniques to make best use of precipitation.

Fictive kinship: a fictional relationship used for purposes of diplomacy or trade. A person may be "adopted" and so accorded rights and protection or other special status in order to clarify their role with a group.

Genezario: one of the mixed blood or converted Indians who were encouraged to settle the eastern frontier of the Spanish colony in order to provide a militia, buffer and example for the "wild" Indians of the Plains. The term comes from the Turkic word "janissary."

Hispano/a: a person from New Mexico who traces their ancestry back to the Spanish colonists who settled New Mexico, especially the northern areas.

Partida: the practice of raising sheep on a share system.

Pastor: Spanish for shepherd

Pueblo: literally "town," used in New Mexico to designate a Native American settlement such as Taos, Pojoaque, Sandia or San Ildefonso.

Rico: "Rich man;" one of the well to do and politically powerful upper class in New Mexico. Often allied with the Americans through marriage.

Plaza: a Hispano settlement, often named for a patron saint or the founder (ex. San Hilario, Romero *plaza*)

Stochastic: chaotic. The Canadian River is a stochastic stream because of the unpredictability of its fluvial geomorphology due to the strata over and through which it flows and the regional climate.

Wether: a gelded male sheep raised for wool and mutton.

Appendix B - Ranch Corporations, Common Ranch Names and Brands

Capitol Syndicate/ Capitol Freehold Land and Investment Company, Ltd.	XIT Ranch	XIT
George Littlefield	LIT Ranch	LIT
Lucien Scott	LS Ranch	LS
Prairie Land and Cattle Company	Cross L (Cimarron)	
	LIT (Canadian)	LIT
Bates and Beal, Inc.	LX	LX
American Pastoral Company	LX Ranch	LX
Red River Land and Cattle Co.	Bell Ranch	
Francklyn Land and Cattle Co./ White Deer Land and Cattle	Francklyn Ranch	Various
James Adair and Charles Goodnight	JA Ranch	JA
Reynolds and Lee	LE Ranch	LE
Francisco Gallegos	Gallegos Ranch	Various

Howrey Brothers Cattle Co.	HOW Ranch	HOW
Matador Land and Cattle Company Ltd	Matador Ranch	various

Appendix C - Methodology

1.0 Carrying Capacity Determination

Carrying capacity was determined by using soil surveys (Canadian Valley proper) and distance-to-water (upland areas), as well as forage production and stocking rate recommendations.

1.1 The first step was to calculate forage per acre. Figures from Lauenroth and Sala "Longitudinal Study" (398) were used for shortgrass forage production, while mixed grass production came from McCollum's figures in Cox and Cadenhed, eds (30).

1.2 The Soil Survey books for Oldham and Potter Counties of Texas provided total area of the counties: 960,640 Oldham and 587,520 Potter. For each county the area described as "rolling range" was determined, that being the area within the Breaks that is generally suitable for grazing. This area was multiplied by 75% to determine the probable grazed area, less slopes too steep for cattle to graze or too dry to support palatable forage. Results: 353,034 a (Oldham), 330,480 a (Potter).

1.3 Mixed grass calculations were performed using the lighter than optimal rate of 18.8 acres/ AMU (good years). For poor years, a rate of 37.4 acre/ AMU was used.

1.4 Shortgrass Calculations: because a shortgrass stocking rate recommendation was unavailable, the forage production method was used, drawing from the short grass production given by Lauenroth and Sala. Total production per acre was multiplied by 0.5 (conservation constant) times 1 acre to determine Total Available Forage (TAF). TAF divided by 800 lbs of food per AMU gives the stocking rate in AMU months. AMU months divided by time on pasture (12 months) gives number of animals per acre. This yielded a result of 22.25 acres per cow/calf pair/year.

1.5 The available area within each county was then divided by the AMU recommendations/ calculations to produce the numbers of cattle that could be kept within the valley all year around without overgrazing the area in years of marginal precipitation. Note that these figures do NOT include distance to water considerations because of the multiple sources and lack of data on exact locations of springs compared to grazable range.

2.0 Water Concentration Determination. Water source concentration for upland grazing land use was determined using the Capitol Lands Plat Book at the Panhandle Plains Historical Museum Archive.

2.1 The maps are bound such that they cannot easily be copied or scanned. Therefore permission was obtained to trace the appropriate map pages.

2.2 The three divisions and a portion of one division were converted from leagues to acres and hectares.

2.3 The number of water sources were counted. In leagues with more than one source, both were counted if they were at opposite sides of the league and if the leagues on either side of the central leagues did not have their own water. Wells beside natural water features were not counted as additional features, nor were two playas in close proximity, nor mills beside check dams ("tanks").

2.4 The area of land around each water source that would have been heavily was calculated as the area of a circle with a two mile radius, to account for 90% of grazing activity. For Punta de Agua Creek, a compass was set using the map scale of 0.93" = 2 miles and the area measured from lines centered on the stream.

2.5 Watered area/ total area = percent of the division that would have been grazed 90% of the time. This does not allow for the mineral blocks or portable water that might have been used to spread the cattle out farther from the primary water sources.

2.6 Results: Middlewater: Total 259, 537 acres served by 46 water sources for 184,971.52 watered acres [w.a.] (71.27%; 7.7% natural water) Punta de Agua Pasture – 87,205a/ 40,014 w.a. (45.9%); Buffalo Springs North – 406,743a served by 61 water sources for 245,288.32 w.a. (60.31%; 13.34% natural water alone); Escarbada in Canadian Watershed – 127,058a served by 26 water sources for 104,549.12 w.a. (82.28%; 0.00078% natural water alone)

Middlewater	259,537a / 105,030 ha	46	184,971 a / 74,855 ha	71.2 % watered
Punta de Agua	87,205 a/ 35,291 ha	2	40,014 a / 16,193 ha	45.9 % watered
Buffalo Springs	406,743 a / 164,603 ha	61	245,288.32 a / 99,265 ha	60.31 % watered
Escarbada	127,058 a / 51,419 ha	26	104,549.12 a / 42,310 ha	82.28 % watered

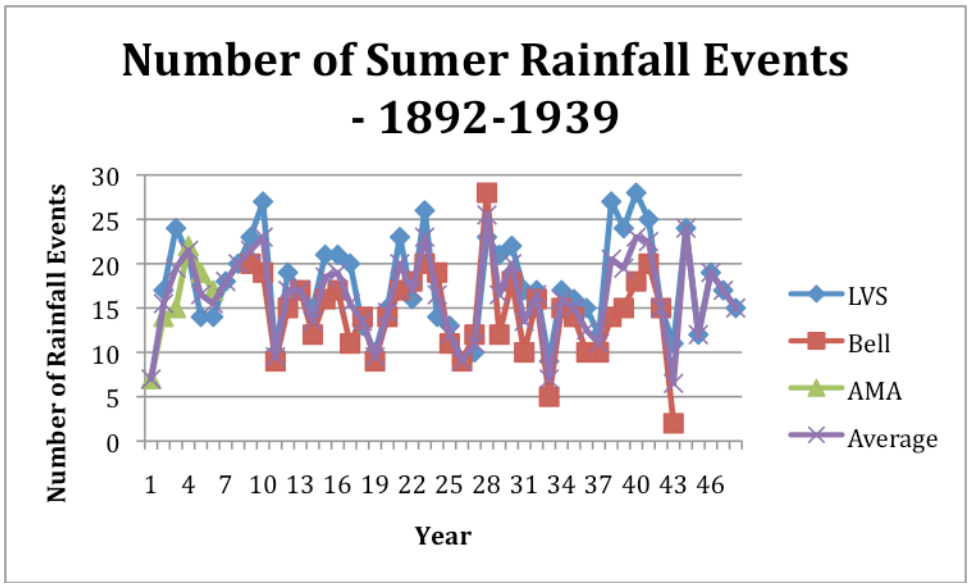
3.0 Weather Analysis. The analysis of precipitation pattern changes was made using Balling and Wells methodology, however, raw data were used because of the lack of computing power and lack of data sets available for the time period under consideration.

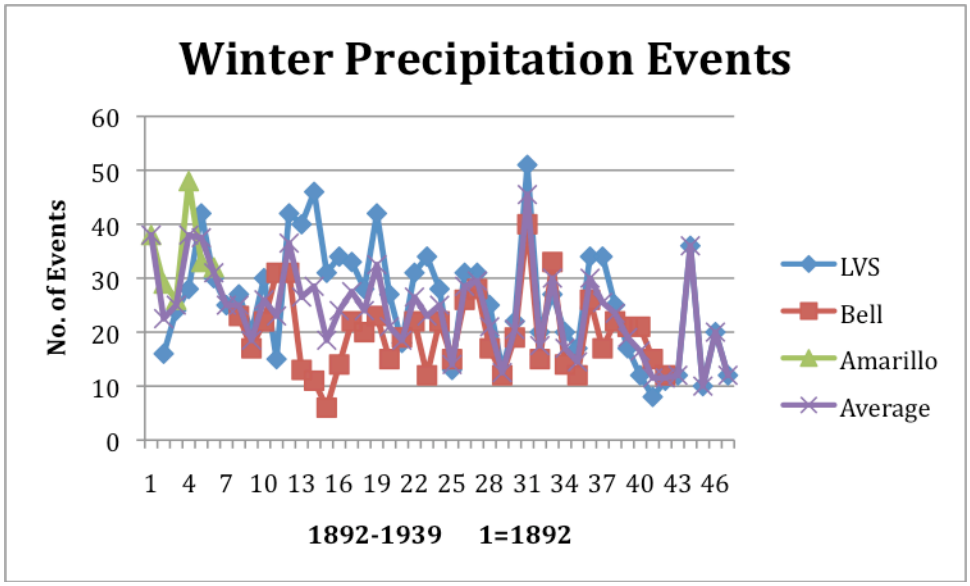
3.1 Daily precipitation data were gathered for Las Vegas, NM, Amarillo TX and Bell Ranch, NM. The Amarillo data set was incomplete and consisted only of

the years 1892-1896 inclusive. Attempts to obtain the full data set for Amarillo failed and in the interest of time, the partial set was used and the yearly totals compared with the other sites for general trend comparison.

3.2 A count was made of: total days with precipitation, precipitation of .25-.49 inches, .50-.75 inches, and greater than .75 inches. The precipitation days were then broken down by water year into winter (October 1-March 31) and summer (April 1 – September 30).

3.3 Number of intense summer events (greater than .25 inches/day), number of winter events and number of low-intensity events were then graphed against years, along with the two or three station average and the trends studied. Graphical representations of data follow.




Winter Precipitation Events
No. of Events
60
50
40
30
20
10
0
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46
1892-1939 1=1892
LVS
Bell
Amarillo
Average

Number of low-intensity rainfall events 1892-1939. Y-Axis = Number of events.
X-axis = Year. Year 1=1892