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Home/land: Kiowa, New Mexico- A Grassland's Story

Heather R. Yaryan

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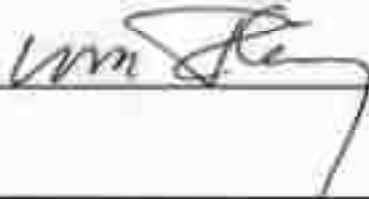
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Approved by the Thesis Committee:



Chairperson

Sharon E. Churchill



**HOME/LAND:
KIOWA, NEW MEXICO- A GRASSLAND'S STORY**

BY

HEATHER YARYAN

**BA INTERCULTURAL COMMUNICATION &
ENVIRONMENTAL STUDIES
SAN DIEGO STATE UNIVERSITY, 2002**

THESIS

Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Community and Regional Planning

The University of New Mexico
Albuquerque, New Mexico

May, 2011

Acknowledgements

This research could not have been written without the extensive support of family, friends, mentors, and colleagues. As this is a story connected into my deep personal roots in New Mexico, I first wish to acknowledge all of my family- past and present- who instilled in me the importance of being both a good land steward as well as a good neighbor. My family's ability to care for the land and care for others is exemplified in this work, as is their resiliency to overcome hardship. I relied heavily upon family archives and stories to guide and inform this research. I wish to recognize and honor my grandfather, Hoy Connelley, through the writing of this thesis. He committed his life to retaining the health and integrity of arid grasslands and the people of grasslands throughout the world.

The process of writing this thesis was truly an organic process unfurling and evolving and one that required a great amount of patience and faith from my research committee. I deeply appreciate the support of each of them.

I first wish to acknowledge my committee chair- Ted Jojola. Ted's path forging and commitment to Indigenous Planning is both honorable and inspiring. Thank you Ted for encouraging me to tell my own story and your confidence that it is an important story to tell. And like an old tractor that needs both a solid kick start and dedicated steward to guide the way through the fields, I needed and got both the kick start and tremendous support (and much needed humor) from my mentor of watersheds and Leopold stories- Bill Fleming. Thank you Bill for getting me back in gear and more importantly, always reminding me to "think like a watershed". Finally, I wish to thank Sher Churchill, whose inquisitive mind challenged me to go deeper and who also inspired me through her Buddhist teachings to bring this writing back to a center place of peace.

My life as an ecologist and planner has been supported by many influences and inspirations. Aldo Leopold being top on this list. On a more personal level, I would like to thank B.T. Leathem- my dear friend and mentor in botany, ecological restoration and the true way to be and live as a practitioner of deep ecology. I also would like to acknowledge my colleagues at Regenesys- a creative and disciplined team of thinkers dedicated to Place and regenerative planning. And to all my family and relations near and far, and all who have adopted me as family, all my love for all of your love that you have given to me.

My deepest gratitude is extended to the stewards and residents of the Raton Basin, past and present. Your knowledge sang the landscape of Kiowa into being. And finally, I give thanks to the Creator- to the soils, the grasses, the pollinators, the bison and antelope, the deer and bear, the rains, the sun- the sky and stars- the embodiment of Kiowa.

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ABSTRACT OF THESIS

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B.A., Intercultural Communication and Environmental Studies
San Diego State University, 2002

Master of Community and Regional Planning
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ABSTRACT

The purpose of this thesis was to illustrate how cultural and natural histories inform place-based community planning. Utilizing both cultural and natural histories, the planner may begin to see patterns of habitancy as they correlate to ecological fluctuations. I focused my research on Kiowa, New Mexico the community my family homesteaded in the grasslands of Northeastern New Mexico and took an auto-ethnographic approach to conducting my research.

The story of Kiowa is both unique and universal. The intricacies of the land and people are, indeed, woven into a specific place and times. It is the intersection of Place and of migration of people moving through Place that is the launching point of a dynamic, co-evolving relationship. Utilizing the story of Kiowa, we, as planners, can reference the lessons learned as seeds for future stewardship and planning endeavors. In essence, this story may be seen as a fractal of a more expansive pattern and applications to the field of community and regional planning.

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CHAPTER 1

Introduction

Home.

Home/land.

Land.

Home/place.

Place.

In a society dependent upon verbal language words are musings that serve to enliven our sense of self, our sense of purpose and offer us a sense of belonging. But as words alone these phrases lack significance, lack meaning. Their richness lies in the identities that are grown from the boundaries we define ourselves in relationship to. This is the essence of culture. These are the roots that nurture us, that shelter us, that feed our communities and honor the geographies of our souls. As words alone, home/place dissolve into abstraction. In isolation from intimate human relationship, these landscapes are wiped clear from the canvas of our maps and left as squiggles of topographic patterns meant to convey the meaning of our physical geographies. But just as the word home, is meaningless when we are unable to dream or image its forms in our minds and its essence in our hearts, these physical geographies disappear from our human memory without the stories that sing them into being.

I am the daughter, the granddaughter, and the great granddaughter of a place that no longer is languaged on modern maps. Somehow the memory of the place and its meaning dissolved over generations of bold sweeping winds and subtle topographic distinctions. I am the daughter, granddaughter, and great-granddaughter of a beautiful expanse of high-desert grasslands. The place of antelope. Of wild turkey. Of bison. Of ancient seas, the mammoth and some of the earliest human ancestors we have recognized on the North American continent. A place of such abundance- across layers of collected histories- that it is hard to imagine how such a place could loose its name on a map. Or even more, loose its place in a regional memory.

I am the daughter, the granddaughter, the great granddaughter of a place called Kiowa, New Mexico, and it is now my duty to also become the mother, the grandmother, and the great grandmother of this place. In this work, I wish to honor my ancestors of all names and faces. To bring rain upon the memories of a place that was hit hard by drought, but lies latent, a dormant seedbed, waiting for the season to change.

CHAPTER 2

Background

This paper has emerged out of an overarching inquiry aimed to understand how land-use decisions and actions affect the ecological health of a community. In the context of ecological health, I am referring to both natural and social ecologies which, when combined, form a holistic community. I also wish to emphasize the nature of community, defined through the uniqueness of place: a co-evolution of land and people, growing in a shared environment. Placing emphasis on the co-evolution of land and people reminds us that we, humans, are a part of our environment. If we wish to sustain community health, our land-use decisions and actions should reflect reciprocity between social and natural ecologies. This is the formative argument for local, place-based, land-use planning.

To contribute to the larger research body emphasizing place-based planning, I felt it was critical to root my research as a personal journey instigated by two fundamental questions: *“Where am I from?”* and, *“Where do I belong?”*

The question, “Where am I from?” seems at first quite simple. I was born in New Mexico, so I am from New Mexico. But is it that simple? Continuing backwards, I look too, at where my family is from. My mother was born in Las Cruces, New

Mexico, my father in Colorado, although as an infant, his family rejoined his grandparents in Mesilla, New Mexico. All four of my grandparents lived the majority of their adult lives in New Mexico as is true for six of my great-grandparents and four of my great-great grandparents. With the support of my families' roots here, I feel even more as though I am, indeed, from New Mexico. This question is, of course, much more complex as we begin to look at the places our ancestors have lived and have lived in long-term, meaningful relationships to place. Indeed, questioning our indigeneity. And then when we arrive at the second question, "Where do I belong?" we may begin to see how the patterns of our indigeneity overlay the pattern of the places we inhabit, setting out to achieve an alignment between ourselves and our home in a way that enables reciprocal and regenerative relationships.

As a planner, seeking to develop greater understanding of how to foster a land-ethic and deep awareness of right-relationship with place, I realized an urgent need to step back from the role of outsider and step into the role of insider. The most grassroots, ground up approach I could take was to start with who and where I come from. To narrow the research, and apply it to regional planning issues, I journeyed back to the point in time my family came to New Mexico and the place they knew as home: Kiowa, New Mexico.

CHAPTER 3

Planning: Theoretical Basis of Research

This project has evolved through a community-based planning approach, utilizing historic and current local knowledge to tell the layered stories of Kiowa, New Mexico. One layer to this story has required analysis of policies, land-use and management decisions that have shaped the recent history and the current state of the community. It is also critical to note, that the land itself, has been a valued teacher in this planning process; leading me to better understand the relationships of the natural ecologies that create the essence of the Raton Basin in Northeastern New Mexico. The story and essence of the land has revealed itself in a directed and poignant way. Through extensive literature review and ecological analysis of the landscape's natural history, the identity of this landscape has proven to retain a consistency for over 12,000 years; consistent in identity, process, function and role in the larger physiographic region of which it is a part.

The planning and theoretical approaches to this project are rooted in indigenous planning theories, Leopold's land-ethic, community-based participatory planning, regional planning theories (regionalism), ethnographic inquiry, ecology and a personal journey into my family's New Mexican heritage. I have also utilized contemporary, sociological, and anthropological theories of *home* and cultural identity to develop a

broader theoretical foundation for the plight of migratory and displaced peoples. The research has also developed with the belief that knowing is an experiential process and applications of our knowledge reflect the context and place of our learning. This is the empirical position of the research, and a foundational principle in a place-based planning approach.

Indigenous Planning Paradigm

The indigenous planning paradigm is based on land-tenure as opposed to land ownership. Land-tenure is represented by a deep understanding of one's roles and responsibilities in one's environment (Cajete, 2005.), which arrives through continued co-existence in a place. This relationship to land grows out of a reciprocity; we give to the land as the land gives to us. Based on this implicit agreement with Earth, the land-tenure perspective towards land management may be seen as synonymous with sustainability.

Indigenous metaphysics is based on the reality that there is no distinction between our environment and ourselves. The environment in which we live must be remembered as the foremost teacher to all our knowing, our knowing of ourselves, as well as our understanding of how we relate to all around us. Cajete describes the process of defining our identities in relationship to place as "Windows and Mirrors." In this process, we come to know what is, based on what is around us. We learn how to

interact with our environment by observing the complexities, intricacies, and vast beauties of patterns in nature. In essence, we learn to see.

Manulani Meyer (2005) articulates the difference between “vision” and “sight” through connection to place. Vision, as defined by the Hawaiian word, *akakú*, represents seeing with our minds, whereas sight, *nana*, implies observation and careful attention to the world around us. Meyer elevates the importance of defining knowledge as a combination of mind, body and spirit, which she offers as the “triangulation of meaning”. This concept argues that, if we come to know and understand something, we will develop awareness of it through our environment, process it through a reflective process in our minds, and achieve a deeper sense of understanding as it (the object/idea etc.) harmonizes with our spirit. Within this definition of meaning, if an idea is not supported through context and specificity of place,

- One cannot develop a deeper understanding of one’s relationship and roles with place, and
- The idea is stagnant and cannot evolve because it lacks meaning through relationship.

I would like to bring Meyer’s definition of meaning forward into a critique of standardized land policies, suggesting a shift in current land-management policies toward embracing place-based specificity.

Leopold's Land Ethic

“A thing is right if it tends to preserve the integrity, stability and beauty of the biotic community. It's wrong if it does otherwise.” Aldo Leopold

Aldo Leopold (January 11, 1887 – April 21, 1948) is often considered to be the forefather on the modern conservation movement. His concepts of conservation intimately connected the role of *Homo sapiens* as a part of the greater ecological community. The predominant body of Leopold's work in, and writing on, conservation followed the vast environmental catastrophes of the late 1920's and 1930's, including the Dust Bowl.

Nationally, the conservation initiative began with the origins of the Forest Service supported by FDR and Gifford Pinchot. The conservation mentality at this point in time was based on sustained yield; managing our resource use so that a net profit could be gained in a way that net profit (from natural resource extraction) would be replenished over time. Although the early base of conservation initiative did account for an ecosystem's carrying capacity, the emphasis was still extractive in focus. There was a deficit mentality to this approach, aimed to not put the environment in deficit, but to allow the Nation's pocketbook to be placed in deficit. In the end, the Nation's pocketbook won out over the environment in a sustained yield approach.

In the late 1920's and 1930's, Leopold was working as a forester for the Forest Service in New Mexico. Following both environmental and economic collapse, Leopold took a fundamentally different stance than the "sustained yield" approach of Pinchot. *"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect"* (Leopold, 1966).

Leopold recognized that the field of ecology lacked the foundation that all social sciences were built upon; ethics. He argued that in the absence of an ecological conscience, or later referred to as a land-ethic, then men will continue to regard themselves as being greater than all other species. Leopold also defended the argument that as long as men resided in the belief that they were better than all other things in their community (which he defined to include soils, water, plants, and animals), then the degradation of land would continue, including loss of biodiversity through species extinction and demise of ecosystem functioning. Leopold's land-ethic was grounded in the belief that conservation theories and applications needed to return to the needs of the land, and that human consciousness needed to be returned to the uniqueness and specificity of place. From a deep understanding of the local ecosystem, people would come to know how to be effective stewards and inhabitants of place.

Leopold was also one of the first conservationists to acknowledge the need to transcend political boundaries and “think like a watershed.” He encouraged land stewards and natural resource managers to see beyond jurisdictional boundaries that fragmented the landscape and re-envision the land as one holistic community (ecosystem). Land-use would be determined by what ultimately supported an ecosystem’s ability to regenerate. Therefore, the ecosystem processes inherent to each place would continue to function as a key contributor to the larger health of the ecosystem in a way that supports the health and diversity of all species. *“Conservation means harmony between men and land. When land does well for its owner and the owner does well by his land; when both end up better by reason of their partnership, we have conservation. When one grows poorer, we do not”* (Leopold, 1966). Leopold’s definition of conservation extends into another ecological concept known as “the commons.”

“The commons,” can be defined as an area of land that is held in common by a population or group of people. They are cooperatively managed so that the land continues to regenerate and sustain the needs of the community without exceeding the natural carrying capacity of the ecosystem. The commons were traditionally lands held in common tenure primarily for the purposes of grazing. They were lands that were on the outskirts of the built community and very akin to modern day public lands.

As Leopold rooted himself in his own practice of living a land-ethic on his farm in Sand County, his awareness of how a small-scale parcel is sighted in a larger ecosystem became more intimate and personal, “ It is not only boundaries that disappear but also the thought of being bounded,” (p. 41).

Regionalism

Regionalism is defined as an approach away from the accumulation of power over nature toward an ecological principle of interaction with the natural world. Lewis Mumford was a fore-thinker in the concept of regionalism. This concept bridged planning with ecological frameworks, starting with a definition of region as a set of environmental relationships that extend over a certain area. Further, Mumford added that a region is shaped by its topography, climate, and soils, “to which plant and animal life must respond” (Mumford,1927). Through this definition, the concept of a region may be seen as synonymous with a watershed.

In relation to planning and community dynamics, Mumford retained the view that culture is shaped by region; not the other way around. He stated, “The Environment does not act directly upon man: it acts rather by conditioning the kinds of work and activity that are possible within a region” (Mumford, p. 285). Thus the social and economic relations of place, should be informed by the place itself.

Three principles were established by Mumford to promote the efficacy of regionalism. The first principle was termed "neotechnics," the adaptation of new technologies for the purpose of restoring the natural environment. The second principle, "organicism," advocated that nature needed to be restored as a primary influence on culture through literature, architecture and the built environment. Finally, Mumford believed that the scale of "community" needed to return to the human scale with civic-minded social order (Luccarelli,1995). Ultimately, by utilizing these principles as base for regional planning, human relations with the ecology of Place could be re-attuned and brought to a balance. This was an early platform for sustainability.

Community-based Participatory Process

A community-based participatory process, is developmental and grows out of the visions and needs of local people as well as being shaped by the existing conditions and potential of local natural resources. Local community participation is used to inform both the planning process and land-use/management decisions. This process is an effective tool for empowerment, self-determination, and local development measures, as it ensures that the community's voices are heard.

The community-based participatory process is very different from the standard approach to land-use planning. The "standard" (or historic) approach to planning is authoritarian in its approach and application of land-use policies and regulations. The

view of land is in terms of ownership demonstrates an administrative ordering of nature by society (Scott,1998). This planning approach is often directed from a centralized land-use agency. The consequences of such centralized land policies include an oversimplification, or generic assessment, that fails to identify unique conditions, resources and needs of local ecologies. Thus, through this planning approach, the control of natural resources is a dual function of ownership and governmental regulation.

CHAPTER 4

Research Methodologies

Research methods have included an analysis of: historic settlement patterns, the Canadian Headwaters watershed, and policies and land-use that have socially affected the landscape. An extensive body of literature was also reviewed covering regional planning, indigenous planning, natural history, grasslands ecology and conservation. I also utilized family archives, oral, written and photographic, to tell my family's story, a fractal of a larger pattern of inhabitation. Additionally, I was able to interview elder homesteaders and their descendents who gave much life to the grassland's story.

Finally, the landscape's story was told to me through time spent in it; camping, walking, sitting and observing. The time I spent back on my family's homestead was invaluable. I watched it across seasons and was intimately connected with the quiet and vast diversity of life there. On every trip I was blessed with enumerable amounts of wildlife: big flocks of turkey and grouse, prairie falcons and ferruginous hawks, a golden eagle, large herds of elk, shy visits of mule deer, and beautiful synchronized dancing and racing of incredibly large herds of pronghorn antelope, my personal favorite. Signs of bear showed up around my campsite, their bellies filled with chokecherry and wild plum. Coyotes, were the rising dawn alarm. My blue heeler found his calling in rounding stray cattle back into the fenced grazing lands they had temporarily been freed from. Perhaps the most significant creature I met along the

way, was a black and gold turtle. Almost one foot in diameter, it eased its way across the dusty ranch road; traveling the higher ground after an afternoon thunderstorm.

Afraid a passing truck may not see my friend, I stopped, picked him up, and moved him off the road. His ancient reptilian skin, eyes, and patience spoke to me of the early animals of the region, coming forward with resilience at the new life of the Pleistocene. As he continued on his way through the yellowing sand sunflowers and paler yellow of the grasslands, I paused and watched with thanks, as his form finally disappeared and blended into all around us.

I have come to see Kiowa and the voices of my family, as fractals, of a vast, multi-lingual, multi-temporal story of early settlement in the Western United States, and to an even finer fractal, the voices of rural Northeastern New Mexico.

A Sioux Prayer

Translated by Chief Yellow Lark - 1887

Oh, Great Spirit, whose voice I hear in the winds_

Whose breath gives life to the world, hear me

I come to you as one of your many children

I am small and weak

I need your strength and wisdom

May I walk in beauty

Make my eyes ever behold the red and purple sunset.

Make my hands respect the things you have made

And my ears sharp to your voice.

Make me wise so that I may know the things you have taught your children.

The lessons you have written in every leaf and rock

Make me strong-----!

Not to be superior to my brothers, but to fight my greatest enemy....myself

Make me ever ready to come to you with straight eyes,

So that when life fades as the fading sunset,

May my spirit come to you without shame.

CHAPTER 5

History: The Natural and Cultural Stories of Place

The Connelleys in Kiowa: A Beginning

On November 4, 1913, a path was fated. A team of four mules pulling a small wagon stalled on the banks of the “Red River,” and sounds of a laboring woman could be heard across the short-grass plains of Kiowa, New Mexico. Elmer Connelley and his young wife, Cordelia, had set off from Shawnee, Oklahoma with sights on Pagosa, Colorado. The vision was to join the Connelley clan who had gone on before them, and to begin their future in horse ranching.



*Elmer & Cordelia
Connelley- wedding
day, c. 1912*

Weather and time pushed the young couple to try and make the high mountain passes across the Sangre de Cristos before the heavy storms of winter prevented their journey. Perhaps their expediency across the rutted wagon trails of Oklahoma and New Mexico were too hurried for a woman eight months into her pregnancy. The travelers' haste was halted as Cordelia's labor ensued a month ahead of schedule.

November 4, 1913, was a stormy day. High winds pushed snow sideways across the horizon. Cordelia, or Delia as she was known throughout her life, was eighteen and her husband Elmer was just four years older.



Hoy Calvin Connelley, Kiowa, New Mexico, c 1913

It was their first child who was on its way. On the high-plains of northeastern New Mexico, there was not much to shelter a storm, so the young mother- to-be took shelter underneath the wagon where, with the assistance of her husband, she delivered a baby boy. Hoy Calvin Connelley, my grandfather, was born. Newborn Hoy was washed with the waters of the Cimarron. It was a homesteaders' christening. One that connected his soul to the Cimarron and its grasslands for life.

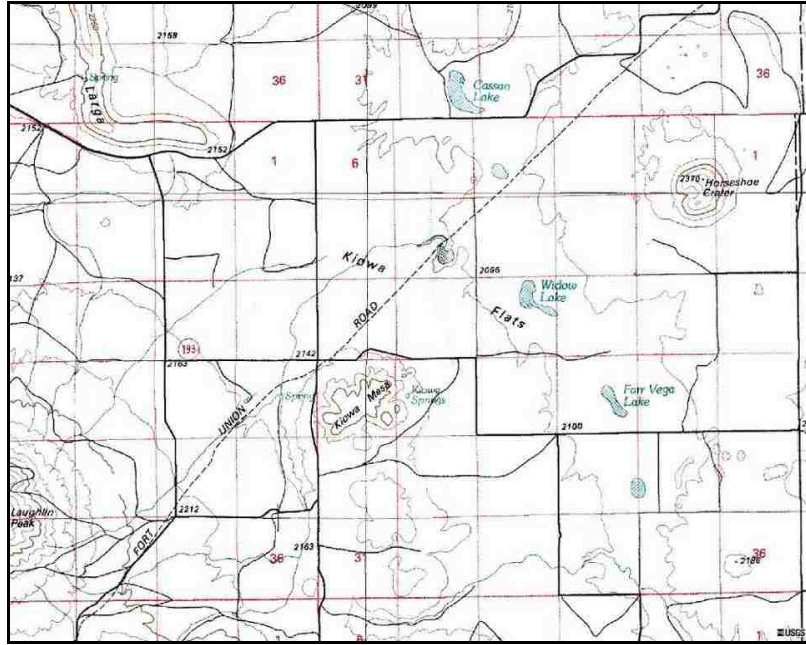
With new baby and winter approaching, Elmer and Delia were encouraged to stay in New Mexico and not continue their travels on to Colorado. They built a shelter, a dugout sod house, and hand dug a forty-foot well, while racing to beat the cold and heavy snows of deep winter. This was the beginning of their lives in Kiowa, New Mexico.

Ecological Context: Thinking like a Watershed

Geographic Context

Kiowa, New Mexico lies in the Raton Basin in the northeastern quadrant of the state of New Mexico. It is approximately 30 miles southeast of the city of Raton, New Mexico sited at 36° 39' 14 Latitude (DMS) and 104° 6' 28 N Longitude (DMS). Politically, Kiowa sits in the southeastern corner of Colfax County (New Mexico) while the basin as a whole lies within the boundaries of Colfax, Mora, Union and Harding Counties. The main route to get there is U.S. Hwy 64/Hwy 87- from Raton; one would travel east towards Capulin, New Mexico for approximately 29 miles before turning south on county road 193.

Kiowa is cradled by the Sangre de Cristo Mountains to the east, the Raton Mountains and Sugarite Canyon State Park to the north, volcanic outcroppings (including Capulin Volcano) to the east and a large expanse of short grass prairie, including the Kiowa National Grasslands to the south.



Kiowa, New Mexico- from Raton Quadrangle, USGS.

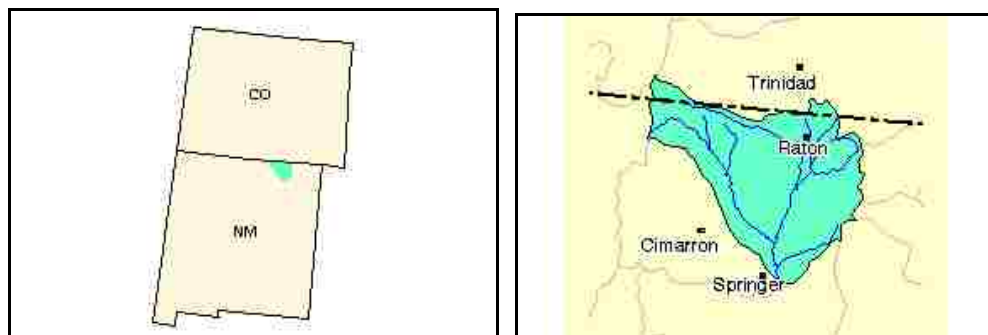


Aerial of Kiowa, New Mexico. USGS.

Kiowa, and the neighboring communities, are considerably higher in elevation than the remainder of the high-plains. The elevation of Kiowa is 7,100'. The High-Plains are geographically identified as beginning at the 99th meridian and extending to the Eastern edge of the Rocky Mountains. The plains gradually slope up towards the mountains with an elevation gain of 1800' feet (4,500'-6,300' east to west). Between 1914-2005 the average annual precipitation was 15.71" with average temperatures of 68.6° (maximum) and 33° (minimum) (Canadian WRAS 2006).

The majority of the Raton basin is within the Canadian headwaters watershed, a sub-watershed of the larger Canadian Watershed as defined by the U.S. Environmental Protection Agency's watershed boundaries

(http://cfpub.epa.gov/surf/huc.cfm?huc_code=11080001).



The headwaters of the Canadian are the Sangre de Cristo Mountains and the southern boundary is the point of confluence of the Canadian and Cimarron rivers. The principal surface waters are the Canadian and Cimarron rivers. Smaller surface waters include the Rio del Plano (closest stream channel to Kiowa), the Vermejo River, the Unã de Gato and

Tinaja Creeks. Surface water is scarce and during the drier parts of the year in-stream flow can diminish to a flow not much more than a trickle. However the major rivers are rarely completely dry.

Although the Canadian and Cimarron rivers are two distinct tributaries, regionally (historic and current) the river continues to be referred to as the Red River (and the region as the Red River valley) or the *Cimarron* (even where it is defined as the Canadian River by the USGS and EPA). The red clay soils in the riverbeds and resultant red muddy waters (during high-flow events) contribute to the river's name. One meaning of the word *Cimarron* is reddish in color, or cinnamon. Spanish translations also make reference to *cimarron* as meaning wild, and untamed.

Between the major rivers there are a few perennial springs as well as intermittent springs and *playas*. The entire surface waters flow into the Arkansas River and Dry Cimarron and Canadian Rivers except in the extreme southwest corner where water flows to Pecos Watershed- which flows to the Rio Grande via the Pecos River.

A Place of Fire and Ice

The Raton Basin- also referred to as the Raton section of the high-plains- was



charismatically shaped by fire and ice. It stands apart from much of the rest of the plains due to the volcanism of its landscapes. The volcanoes of this region stretch from Trinidad, Colorado to Clayton, New Mexico and cover approximately 8,000 square miles. In North America, the Raton volcanoes are the easternmost volcanic field of the Cenozoic (66.4 million years ago) to present. Between 2 - 8 million years ago, the northern edge of the region erupted and overlaid a massive lava flow across the region. When the landscape began to erode, it resited erosion due to the lava formation.

What remains are remarkably high, long mesas and volcanic cones that dramatically rise from the basin floor. Kiowa Mountain is a volcanic cone and a wayfinding point for my family's homestead. It lies to the southeast. To the north is Mesa Larga, one of the longest mesas in the region. Due north by northeast is Horseshoe Mesa, which actually is a volcanic cone with its center core absent. To the west, are the Sangre de Cristos. The view of the range extends from the Spanish Peaks of Colorado, Mt. Baldy above Eagle's Nest (New Mexico), and Hermits Peak near Las Vegas, New Mexico.





The grassland ecosystems evolved in the Pleistocene. Periods of glaciation established the widespread moisture, providing the resources for the grasslands to evolve. The end of the Pleistocene was a time of fertility and abundance. Populations of early bison (*bison antiquus*) were vast. Very early people were known to have been in this region following the bison. The earliest archeological site in the region is the Folsom Site, eight miles south of Folsom, New Mexico. At this site, The Folsom Point was discovered with remains of *bison antiquus*, and carbon dated as approximately 12,000 years ago . Overall, the greatest limiting factor in the ecosystem is water. However, it may be argued that it is the grasses that have determined, and will determine, the destiny of all other life in the region.

The ecology of Kiowa, and the surrounding Raton Basin, is best categorized as shortgrass prairie. Lying on the eastern slope of the Rocky Mountains, this basin is a node in a

lengthy corridor of grasslands that extend along the entire backbone of the North American continent, from Canada down to the staked plains of Oklahoma and Texas.

The shortgrass prairie ecosystems are a key contributor to the much larger physiographic region of the Great Plains. Shortgrass prairie has been identified as one of the largest contiguous ecosystems in North America, as well as some of the most endangered, due to fossil fuel exploration, conversion to agriculture, and development.

In a healthy ecological state, grasses comprise 90% of the vegetation of shortgrass prairie, with forbs and shrubs comprising most of the remaining vegetation. Trees, including willow and cottonwood, are restricted to watercourses. In good precipitation years, grasses are abundant. A range in excellent condition would demonstrate over 50% ground coverage, limiting erosion potential. Horticulture in Kiowa, including corn, needs some form of irrigation and was historically restricted to bottomlands along streams.

In an average precipitation year there is generally only enough water to support short (less than 2 feet) and medium-sized (2-4 feet) grasses. Shortgrass prairie is dominant. Medium-sized grasses, and the three main species of tall grasses—big bluestem, indiangrass, and switchgrass—are also present. Blue grama and sideoats grama are two dominant grasses that thrive in the region.

(See appendices for complete table of vegetation found in Kiowa)

The shortgrass plains are climatically characterized as a region marked by low precipitation and seasonal temperature extremes. Airflow and storm events from the Sangre de Cristo mountains to the west are the key determinant in climatic variability with westerly prevailing winds. Since the earliest records of humans in the basin, indicated by the Folsom era some 11,000 years ago, the basin has experienced a repetitive ecological pattern; periods of extreme drought interspersed with shorter periods of cooler temperatures and greater levels of precipitation. Surface water is limited and precipitation patterns historically determined population rates of growth, inhabitancy and dispersal.

During the cooler and moister periods, the basin has proven to be remarkably abundant with very populous herds of large mammals, including *Bison antiquus*, and more recently, *Bison bison*, mule deer, elk, and pronghorn antelope. Non-native grazers have also benefited during the periods of abundance. Historic and contemporary land use includes cattle ranching, and to the lesser extent, sheep and horse grazing.

History of Inhabitancy: The Peoples of the Raton Basin

Early Peoples: 11,000 BC- 6,000 BC

Inhabitancy of the Raton Basin extends over approximately 11,000 years. Some of the earliest inhabitants of the basin were hunters following the large mammals including mammoth and *bison antiquus*. These hunters were utilizing spears and points propelled

by atlatls which became referred to as Folsom points, based on the points found with the remains of bison at Folsom, New Mexico. Prior to this archeological finding, scientists believed human occupation in North America began approximately 3,000 BC. The archeological sites in the Raton Basin added considerable understanding about the length of history to human co-evolution with our continental and regional landscape heritage. Sites associated with Folsom extended from northeastern New Mexico into southern Colorado (San Luis Valley, Zapata, and Trinidad, Colorado), northeastern Colorado, the northeast corner of Texas and west-central Kansas. This region, not coincidentally, has a common natural history, which are all identified as grassland regions, primarily associated with the High-Plains.

A Period of Climatic Warming: 6000 BC- 500AD

An extended period of climatic warming (6000 BC- 500AD) followed the Pleistocene. (Trimble,1980). This period was the hottest and driest time in early history, resulting in . great diversification of both plant and animal species. Hunting diversified, and there was an increase in gathering of plants. Archeological evidence indicates that there was a vast migration of people through the plains at this time from all directions. Human interactions and use of plants and animals greatly shaped the species diversity and ecosystem of present day. People gathered wild foods, which included acorns, plums, chokecherries,

and squash. Maize was the first horticultural plant to have been found in archeological middens. On present day T.O. Ranch (outside of Maxwell, NM), two caves were excavated. The sites contained grass bundles of maize, prairie dog skin bags of maize, and matates. Faunal remains at the caves and other archeological sites in the basin included: bison, deer, elk, antelope, jackrabbit, cottontail, coyote, wildcat, badger, rodents, eagle, wild turkey and turtle.

Radiocarbon dating of archeological sites show an increase in population in cooler, moister mountain areas 5600-7000 years ago and correlating minimal population in plains 7300, 6300 and 5300 years ago. It is clear evidence that people moved based on cycles of abundance and depletion, a pattern that reoccurs throughout historic and contemporary habitancy in the region.

Settling In: Horticulture and Semi-Permanent Structures, 500 AD- 1500 AD

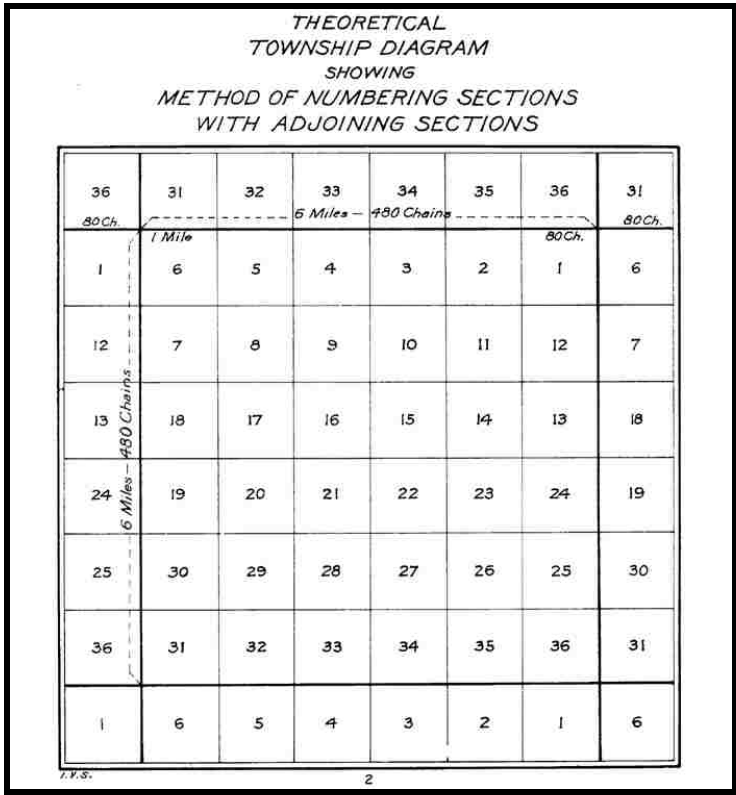
Between 500 AD and 1400 AD, the population in the basin boomed (Gunnerson, 1987). Horticulture combined with semi-permanent dwellings began to appear in the basin circa 900 AD. Besides maize, beans and squash began to be cultivated and new types of corn appeared, which genetically was linked to cultivars of the Southwest Pueblo cultures. The people were primarily Caddoan speaking whose dwellings were semi-permanent earth lodges. Both farming and villages were primarily in the lower river bottoms. Early ceramic evidence is minimal but indicates cultural influence of the Pueblo people to the southwest

as well. Dependence on cultivation plants created vulnerability to local climatic conditions and during fluctuations in the mid 1400's the central high plains depopulated with minimal rainfall.

Around 1500 AD climatic conditions improved and, with increased moisture, grasses and bison became abundant. Athabascan-speaking Apache moved in (from Canada) before the return of Caddoan speakers. Apache were the dominant population in the basin until approx. 1720. A few Apache settlements were identified in the Dry Cimarron in northeastern New Mexico, and at places within sight of the Sangre de Cristos, a few miles out into plains. However, tipi rings dominated as early evidence of habitancy. The prevalence of tipi rings indicates brief but perhaps repeated inhabitation connected to hunting game. The Apache people began to move as the Comanche moved into the basin in the early 1700's. Up until the 1800's, the Comanche were the dominant cultural group in the basin, primarily inhabiting the basin in seasonal camps for the purposes of hunting.

In 1785, Congress passed a statute defined as the General Land Ordinance. The purpose of this ordinance was two-fold. First, it was enacted as a means to settle and systematically organize the expanse of land west of the Ohio River. The categorization and ordering of the land was implemented through the Public Lands Survey System (PLSS). The PLSS divided land into a grid pattern defined by 6 square mile townships, all comprised of 36 sections, 1 square-mile each:

The surveyors, as they are respectively qualified, shall proceed to divide the said territory into townships of 6 miles square, by lines running due north and south, and others crossing these at right angles, as near as may be, unless where the boundaries of the late Indian purchases may render the same impracticable, and then they shall depart from this rule no further than such particular circumstances may require. (U.S. Congress, 1785).



The second, underlying, purpose of the 1785 land ordinance was to “civilize” the growing American population. Socialization was an important priority of this ordinance and the grid system was designed to be governed by a hierarchical authority

of central government. As the government was new and developing (and still threatened by European control and siege), controlling land and people was seen as essential for governmental progress. This system was an attempt to lure individuals to invest in land assets and to encourage long-term habitation and land possession across the continent by “Americans.” Native land claims and titles were extinguished in order to ensure clear title to land for future ownership.

At the turn of the 19th century, the Santa Fe Trail began to make a distinct mark on the migration of peoples in the Raton Basin. After Mexico gained its independence from Spain, in 1821, the region was opened for trade. One part of the Santa Fe Trail followed the Dry Cimarron across present day Union County into Texas. A different route, also following the Dry Cimarron, went into Oklahoma and Kansas with a branch extending into the northwestern corner of Texas. The later route went into New Mexico through Clayton and rejoined the Dry Cimarron on Carrizo. (Inman, 1916). In 1825, the Santa Fe Trail, and Canadian and Arkansas watersheds were ordered to be surveyed by President Monroe. In 1827, the region was resurveyed and the final survey was submitted to Washington. Travel and trade increased and the population of northeastern New Mexico expanded.

Indian policies were established in response to the ideologies underlying Western expansion. In 1831, the U.S. government enacted the Indian Removal Act to remove tribes

from areas deemed public or state land trusts- clearing these lands for American settlement. Tribal lands were ceded to the United States through treaty and military force.

From 1841 on, federal policy promoted the transfer of newly acquired federal lands to small farming families that could build the backbone of a new nation. At the same time the government was driving Indians off their ancestral lands and extinguishing native title, it was encouraging non-Indians to settle on the same lands.

In 1862, the Homestead Act was enacted as a means to encourage non-Native settlement. Clear title was given to the land with proof of settlement and cultivation for five years. Once improvements were justifiable, a homesteader could file their claim for the patent (or deed of title) to the local land office. That same year (1862), Congress authorized General Carlton to establish a fort in the plains of New Mexico bringing the US military to the plains, as Carlton justified, in an effort to provide “protection” for the homesteaders from the Kiowa, Apache, Comanche and Mescalero. This was the creation of Fort Sumner. In conjunction with the establishment of Fort Sumner, Carlton established a 40 square mile reservation at Bosque Redondo to relocate tribes to. For the following six years the US government exercised extreme force against the tribes throughout the southwest region, forcibly relocating them off of their ancestral lands to Bosque Redondo, and temporarily to other forts similarly established (Fort Wingate, Fort Stanton, Fort Union). The most detailed account of this removal was the Navajo

Longwalk (January 1864) in which thousands of Navajos were forced to walk over 300 miles in the dead of winter to Bosque Redondo. Many people died from the cold and starvation. Many others died from infections and viruses introduced by the military.

Although the Navajo long-walk is most prominent in written history, the Navajo were not the only people forced to walk and relocate under such extreme conditions. This forced removal included Apache, Pueblo, Kiowa, and Comanche peoples.

FREE LAND!

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— of —

FREE  PUBLIC LAND!

— NOW OPEN FOR SETTLEMENT, NEW —
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This land is considered by competent authorities as the
Finest Farming Land yet undeveloped in the South-west
and is now

Open to Everybody for Entry

at the newly established

Land Office at Folsom.

The Rock Island R. R. survey has chosen this point for the junction of their main line west with the Denver, Texas & Ft. Worth Railroad. Among other prospects may be mentioned the county-seat which will be located here when the county is divided. The surrounding country is famous for beautiful and picturesque scenery, which, with the delightful climate to be enjoyed here the year round, will make of Folsom the most popular resort in the west.

Farming and Stock-raising can here be successfully carried on.

Intensive crops of Alfalfa, Wheat, corn, oats, barley, timothy, clover and rye can be raised here, while our fruits and vegetables surprise the most skeptical. In addition to this, the country has long been considered the best stock-raising country in the United States. Rich and fine grasses grow here abundant. Among other resources are **Forests of good PINE TIMBER, while GOOD COAL crops out** prolifically all over this district, and can be obtained easily by digging for it. The stratum will prove that the rainfall is greater in this country than in any section of the territory, so that crops can be raised without irrigation. This country is not so much in need of capital as it is in need of **WORKERS**—nature's wealth is already here, but must first be developed by the industrious man who wishes to get his own's out of his labor. Abundant supply of pure, clear water is obtained at a depth of only 15 ft. Come and see for yourself, or address the **Forest Agency, Folsom, New Mexico.**

Folsom In the highest respects of the soil and growing location on the Denver, Texas & Ft. Worth R. R. It is situated on the southern slope of the Royal Noble mts. at an altitude of 5,000 feet.

Free water.

Free land advertisement following the Homestead Act Of 1862 (Folsom 1888-1988: Then and Now. Folsom Centennial Book Committee, 1988).

Arrival of the Railroad in Raton Basin: 1880



Cattle Train c. 1890 near Kiowa, NM. “The Dutch Outfit- West of Capulin”

Photo courtesy Bill Emery. Folsom 188-1988: Then and Now.

Mass extraction of natural resources began with construction of the railroads. The area surrounding Raton became a major source of coal for the railroad. Lumber was extracted from the eastern slopes of the Sangre de Cristo for both railroad ties and fuel for steam engines, as well as construction materials for company housing and buildings. In 1880, the Atchison Topeka and Santa Fe Railroads were completed connecting Missouri to Santa Fe, New Mexico.

The railroad heightened the possibility and extended the breadth of grazing on the grasslands of Raton Basin. Cattle and sheep ranching started promptly following the completion of the railroad and in 1881, a land office was established in Clayton (Bloom, Lansing, and Donnelly, T.C, 1933). This land office was the start of regulation and regional oversight of land-use, primarily grazing, in the basin. In the early 1890's, a rail extension was added by the Southern and Colorado rails from Emory Gap (Colorado) to the Texas state line to facilitate livestock transport across the region. Later in 1907, a branch of the Topeka and Santa Fe Railroad was built from Raton to Des Moines, New Mexico.

Raton was strategic in railroad economy because of its location between Denver and Santa Fe and its wealth of coal resources. It was the main depot between these two cities during the railroad era of coal powered engines, as well as providing resources and labor for smelting ore for the railroad tracks and ties. Coal company towns were developed with extractive and unhealthy relationships across the board. The railroad companies set up temporary infrastructure to house employees and run operations. New immigrants to the United States were brought out west to work as railroad and coal company employees. The company structure kept the poor, poor, through limited wages and leasing and credit programs. They built false economies and communities and set false dreams and sense of security. Once they established a rail section and extracted all they could, they would

close shop and move on, literally demolishing buildings and leaving large populations without work. Many miners in the Raton area found other means of support doing “whatever they could to support themselves and families.” The Raton basin continues to have strong pockets of ethnically diverse communities due to distinct ethnic groups of railroad immigrants. (Pappas, M., 2003).



(Caption read, “ Folsom Depot: A large crowd awaits the arrival of Theodore Roosevelt on a presidential campaign stop.” Image courtesy of Folsom 1888-1988: Then and Now)

Going Back to the Roots of the Connelley Migration:

Pre-New Mexico, Elmer and Delia:

The path of Elmer and Delia's lives was not an unusual one. In fact, it was one that many others traveled who sought a place to call home. Elmer Connelley, my great-grandfather, was born to Irish tenant farmers. James Connelley, his father, was a fourteen year old stow-away on the USS Rotterdam. He literally hid amongst sacks of potatoes in the cargo of the ship that sailed from Galway, Ireland to Ellis Island, New York. James was an adventurer who left his life in southwest Ireland and ended up in Georgia. He worked as a tenant farmer, a common life of Irish immigrants.



James Connelley (left) and "Uncle Eddie"- Oklahoma, circa 1885

As United States nationhood expanded, Irish tenant farmers, like many other people, were pushed off the land they farmed and continually moved further west. They leap-frogged their way from Georgia to Arkansas, then to Missouri. As each state of the nation

became organized, they were pushed further west. As Irish tenant farmers, they held no land in ownership. They were accustomed to taking care of others' lands, then being forced to move. By the 1870's, James Connelley was living in "Indian Territory" of eastern Oklahoma with his wife Elizabeth who was of Irish and Creek (Muscogee) decent. In 1891, their son Elmer was born.

In 1895, my great grandmother, Cordelia Harter, was born in Potawatomi, Oklahoma, near present day Shawnee, Oklahoma. Her mother was Potawatomi from the Mission Band of Potawatomi (later called the Citizens Band of Potawatomi) and her father was Scots-Irish and Swedish. Her biological father died when she was in utero and her mother remarried a widower who had children of his own. My great-grandmother



described feeling like she was a black sheep amongst her new stepsiblings and that their mother accommodated to needs of her new husband and his children more than her own. She often made references to living in between worlds and not really belonging in one place.

(left) "Aunt Pearl"- Delia's aunt.



*Oklahoma, c1880. (below) Gradeschool, Shawnee, Oklahoma, c. 1900.
Cordelia- last row (children) third from left*

At age six, she was sent away to school where she was to live with her aunt Pearl, her mother's sister who had no children of her own. It was at school where she met Elmer.



Cordelia Harter- second row, fourth from left- holding basketball. Elmer Connelley, back row, fifth from left, standing directly behind Cordelia. grade school, Oklahoma. Circa 1903

Elmer described my great-grandmother as being a firecracker in a small package. She was spirited and physically strong, although small. She stood out from the other children with her dark auburn hair, something he loved about her. Later, when interviewing fellow homesteader Mr. William Weir, he described, “Mrs. Connelley was something else. She wore men’s boots and trousers under her skirts. And in those days, no women wore boots and trousers. But then again, it wasn’t a life cut out for most women.” (Interview, September 2005).

January 6, 1912, New Mexico became the 47th state to join the union. Shortly thereafter, it was opened to homesteaders and permanent settlers began to settle the Raton Basin Region. With the arrival of Hoy and a twist of fate, the Connelleys were able to officiate their new home/place by filing a homestead claim and demonstrating a commitment to settling the land making improvements. They planted birch and cottonwood as windbreaks and began other improvements of their land.



Kiowa lies in the southern portion of what is considered the “high plains” of North America. It is an arid region with a climate controlled largely by the winds and rain shadow of the Rocky Mountains to the west. To improve their land by making it irrigable, part of the definition of improved lands under the Homestead Act. Dependent upon rain, they dry farmed, growing pinto beans and wheat as their main crops, while keeping a smaller garden of vegetables that could sustain their growing family and withstand the weather of the plains.



Hoy, Alfred, & Dorothea Connelley, Kiowa, New Mexico c 1919

In 1909 in an attempt to settle the Great Plains congress doubled the amount of land a person could improve on and own, from 160 acres to 320 acres. The increase of the acreage was aimed to compensate for the limits of arid lands and promote dry farming for homesteaders on the plains. In 1916, congress passed the Stock-Raising Homestead Act targeting cattle ranchers to settle the arid lands. Acreage was increase to 640 acres and claimants simply had to prove use of the land for grazing and livestock.



Hoy, Dorothea, Alfred, & Cowan Connelley, Kiowa c. 1921



Cowan, the "lil'mule-skinner", c 1920



"Connelley Mule Team". Hoy, Dorothea, Alfred, & Cowan Connelley, Kiowa c. 1921



Hoy, "Young Wrangler" c 1921



By 1920, the Connelley homestead had grown. They had three other children after Hoy, Alfred, Dorothea, and Cowan, with a windmill for their water source, and a few hogs, chickens, sheep and a dairy cow. The promise of having a place to call home and prospects of owning land was looking good.



Photos clockwise: (above) Delia and kids, Kiowa, c 1921; Connelleys, Eddie Harter (Delia's brother), Mr. Price, c 1921



Dorothea, lambing season, and Connelley kids, lambing season, Kiowa, c 1923.

“We had community because we had love. The homesteaders loved one another and helped each other out. They were always going on a checking in on a each other....”

(Mr. Weir)

“It seems that is a critical part of community- a love of your neighbor and a love for the land” (HY)

“ Well yes, that’s it- isn’t that the foundation of community” (Mr. Weir)

(Interview with Mr. William “Bill” Weir, Kiowa homesteader, September 2005)

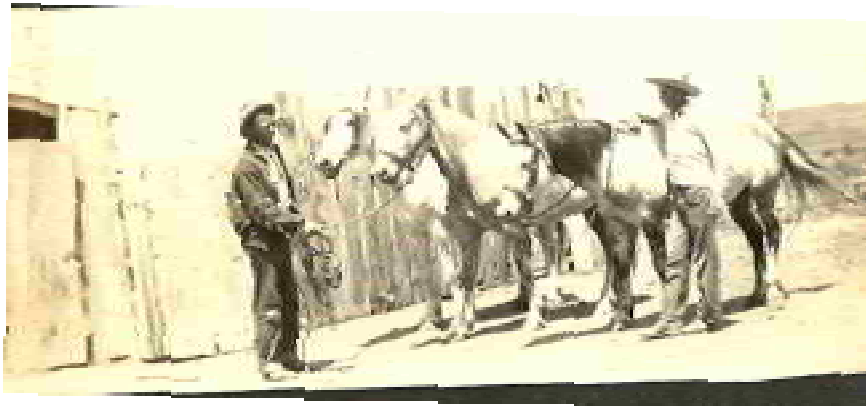
Kiowa was not an easy place to live but family and community made it “home”. The homestead community was scattered across the plains- and their “community” was spread across the Raton Basin- neighboring



towns included Clayton, Folsom, Maxwell, Wagon Mound, Colfax, Capulin, and Johnson Mesa. These were the larger communities but within the boundaries of the basin, many smaller communities, each primarily consisting of a few extended families,

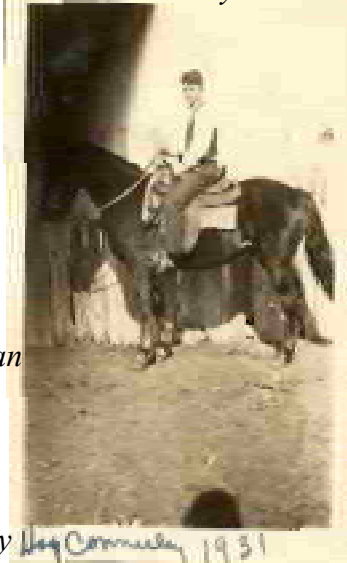
thrived. In order to sustain through the extremes of the climate and isolation from larger towns and cities, people relied heavily on their neighbors, and “neighbors” may have lived at least a long day on horseback or 15 miles away as a crow flies.

Delia was the post-mistress. And so their home also became the Kiowa post office. As adolescents Hoy, Alfred and Cowan helped to transport mail from the main post offices in Raton, Maxwell, Clayton and Capulin. They would travel a day on horseback to collect the mail and return the next day with the local deliveries.



“I remember one night Hoy had rode over to Raton for the mail delivery and that that point we were living here (Raton) already since my daddy had taken to working in the mines. A big snowstorm was a coming in. And so my mama asked Hoy to stay over for dinner, cause I think she really wanted him to stay the night. Hoy insisted he could make it back and hurried off. It wasn't much more than an hour later that the operator called in a message from Mrs. Connelley insisting Hoy stay the night in Raton. When the news went back that Hoy was already on his way, panic struck. I'm sure Mrs. Connelley was pacing and rubbing that worry stone of hers. A few hours later, we had a knock at the door. It was Hoy, frosted over asking for permission to stay the night like a dog with his tail between his legs. He said he'd gotten as far as the mesa and the drifts were up to his stirrups and some even deeper and he couldn't get back home even if his horse would swim him the whole way. So I'd guess he'd learned his lesson especially after he got a stern talking to from his folks who figured him frozen dead that night.”

(Interview with Albie Price, 2005).



Delia also happened to be one of the most educated women in the community since she had an eighth grade education. Naturally, this led to becoming the school headmistress. Kiowa had a one-room school that covered all ages and grades up to grade 8. She was able to get a monthly stipend of \$60 for this job. It also served as the community center, a place for meetings and also for many of the women's circles. Delia helped the ladies sew ornate embroidery on their skirts and dresses to spruce them up for dancing. She was

known for her handiwork. They would quilt and sew and can their foods as a collective. They managed to get a steam-powered canning machine, an upgrade from the large batching on the school's woodstove.

“All the ladies had gathered up with their seasons goods that they were gonna can with the new machine. They fired it up and it was so powerful it shot up like a rocket, blowing a hole straight through the roof!” (Interview with Mr. Weir, 2005).



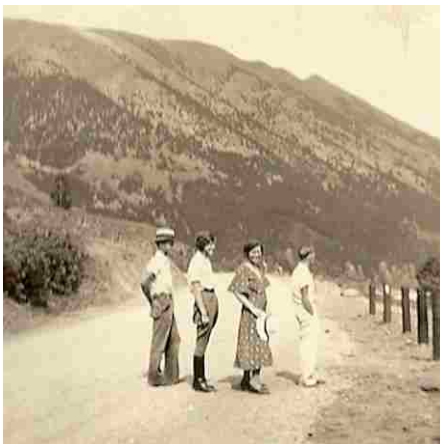
The Kiowa schoolhouse also served as a dance hall and as a church. Because the distances were so far between the small towns, it was not uncommon that schools held an array of common, community purposes. *“We had faith, and we had music”. “We’d all gather up and go to the school gyms and go to dances. And everyone loved to play music. In fact musicians would tour around to all the other little communities. My daddy played in a music group. They’d travel all around the area. They even got recorded”. (Interview with Emile Underwood, 2005).* The music was a lively mix of influences as the homestead communities retained a broad diversity of ethnicities. In the communities around Kiowa the homesteaders were primarily Irish, Italian, Spanish and also a strong (but less prominent) community of Slovakian people. Elmer Connelley took pride in his Celtic

roots and loved to “dance a jig” and sing. He and Delia also loved the traditional round dances, square dances and contra dances.



The homesteaders prescribed to numerous religions but what was more critical than religion was their faith. Faith was a big component to the homesteaders’ resiliency. During interviews with elder homesteaders and their descendents I asked the question, “How do you think people were able to get by through the Dust Bowl?”. Consistently, throughout all of my interviews, one phrase was repeated over and over again, “*This too shall pass*”.

“We had faith. So many of us had already gone through so much, so really it was all about faith and an understanding that this too shall pass.” (Interview with Emile Underwood, 2005).



Delia and kids, c. 1930

“Well, there isn’t much rain out west. There is not enough rain to grow crops....The historical process which we call the westward movement shattered against these facts. Neither hope nor illusion nor desire nor Act of Congress could change them in the least.” - John Wesley Powell

(Wallace Stegner, 1954, Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West, xix).



The Connelley Clan, Kiowa, New Mexico. Circa 1920. From left Ruben & Lura Connelley (both from Zapata, CO), Dortha, Cowan, Delia, Alfred, Elmer, Hoy.

The contiguity of the native grasslands was fragmented into a patchwork of plowed acres. By 1919 over seventy-five million acres were put into production. (The Worst Hard Time, pg 43). Yearbook of agriculture, USDA, Washington DC, Government Printing Office, 1926, 1927, 1928, 1929. Cattle grazing and wheat were the main agricultural land-uses. The plains were plowed up extensively following the end of WWI. In 1917 Congress passed the Food and Fuel Control Act (40 Stat. 276), also known as the Lever Act. (National Achieves). The Lever Act was aimed at increasing national food security by increasing national food production.



(National Archives and Records Administration, Records of the U. S. Food Administration. Record Group 4. ARC Identifier: [512499](#))

This was a political strategy to add fuel and defense in WWI. The push for food production, especially wheat, was vast. Following the passage of the act, the cost of a bushel of wheat went up to \$2.00. The homesteaders who were already engaged in dry

farming and wheat production had new sights set, financial wealth. The carrying capacity of the land itself was not taken into consideration. People were blinded from their common sense by the hopes of getting rich.

By the peak of the “Dust Bowl” over 1.6 million homestead applications had been filed and over 270 million acres of land (and tenth of the national landmass) was transferred to homestead owners. (National Achieves, <http://www.archives.gov/education/lessons/homestead-act/index.html>).

The Agricultural Yearbook (1935) for Union County, neighboring county to Colfax and also a part of the Raton Basin and Canadian headwaters watershed, indicates that 2, 186, 943 acres in the county were in cultivation in 1935 and less than 5% of the farmland was irrigable. Crops in production included beans, wheat, oats, and barley, corn and forage crops. In relation to grazing, the Census of Agriculture from 1930 indicates that 13,374 sheep, 87, 400 cattle, 10,201 horses, and 9, 655 swine were being supported off the grasslands of Union County. Based on comparable demographics between Union County and Colfax County, this data also paints a picture of land-use in the greater region.

Agricultural production of wheat boomed until 1928. By 1929 a national surplus of wheat accumulated as production far exceeded the demand of the nation. The price of wheat collapsed as well as the rest of the economy and the start of the Great Depression ensued.

The Dust Bowl Years

"I am a great chief among my people. If you kill me, it will be like a spark on the prairie. It will make a big fire - a terrible fire!" - Kiowa Chief Satanta

In 1929, simultaneous with the Great Depression, the Great Plains entered a long cycle of drought. Precipitation dropped significantly for over six years. The native grasslands were denuded from both grazing and being plowed under. The soils in the region calcified as they dried out, exposed to sun and winds and the earth on the plains began to dissipate into great dust clouds.

From 1929 to 1935 Kiowa was hit by the first major drought cycle since the settling on the region by the homesteaders. *"One thing that can be said of this place- it's not a place that makes living easy. The weather across the plains can be as fickle as one could imagine. You might wake to a warm sunny day, but don't count on it being that way by lunch. By the time you'd get your plow set- the winds would kick up and by the time you'd figure to set back, a snow storm would be howling in. We'd*



have eight feet of snow before we knew it. And then, after cursing the storms, they'd a just stopped. For six years, it went dry. No rain. Guess that's what they'd say was the real Dust Bowl." (Mr. Weir)

(Above) Connelleys at Capulin Volcano, c. 1922

The "Dust Bowl" years have become some of the most significant in regional history.

Following the 1929 economic collapse and excess supply of wheat, the price of a bushel of wheat went from \$2.00 a bushel to \$0.75 a bushel and by late 1930 people could hardly give it away. Farming in the plains was pushed to return to a scale of self-sufficient farming, a scale in which you did what you could to feed your family with little extra to go on. The economic system returned to trade and barter and the community relied heavily on each other, as cooperation and collaboration were the primary means of getting by.

"Well those sure were hard times. But we managed to get by. My daddy helped Mrs. Connelley by delivering the mail. But it wasn't just mail he'd deliver. If someone had a little extra milk than they'd send it along to someone else who needed it. And if they had something extra they could share, they'd send it along. Or when it got real bad, it was just pinto beans. I think we all lived on pinto beans for years. Pinto beans and whatever greens that'd come up- you know the weeds. We sure got tired of pinto beans but the ladies figured all sorts of ways of making them. Mrs. Connelley was famous for her pinto bean pie. She'd win awards everytime she took one to the fair. So yea, I suppose we got by, by helping one another out and we never, ever let our spirits get down. Cause if our spirits got down it was a long road back up."

(Interview with Albie Price, Kiowa Homesteader, 2005. Raton, New Mexico)

The health of the grasslands was deteriorated. In the absence of precipitation and continued use of the land, grasses did not regenerate and the soils were left bare. Most of the topsoil was lost to wind erosion, and later, as the lower soil horizons were exposed and calcified they too eroded as were lost to extreme winds. It was reported that by 1932 the soils were such extreme hardpan that one could not set a plow to the land if they held that intention. Winds averaged 30mph and it was not uncommon to experience wind storms of 40-50mph. Homesteader stories repeatedly tell of seeing looming advances of black dust clouds moving across the plains. The dust storms carried the soils vast and great distances. Chicago and New York both reported grey haze for days from the dust being carried east. About 850 million tons of topsoil blew off the High Plains in 1935 alone (Worster 1979). In the “1938 Annual Yearbook on Agriculture” the United States Department of Agriculture reported that only about 2% of the “usable” range area was free from erosion and that of the 98% that was eroded (19 of 20 acres), nearly half was severely eroded. It continued to state that 1/3 of the eroded land was contributing soils to streams at “an alarming rate”. (USDA Yearbook of Agriculture, report titled, The Remedies: Policies for Public Lands. Clapp, Munns, Sims, Wehrwein, and Clayton, 1938). At the same time, Leopold, was beginning to articulate the need for a land-ethic. Stating that a land-ethic, “simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land”. He continued to draw of the hypocrisy of the Nation’s value systems by stating that although he give ourselves

praises for being the “land of the free and home of the brave”, he argued what is it that we really love? :

“Certainly not the soil, which we are sending helter-skelter downriver. Certainly not the waters, which we assume have no function except to turn turbines, float barges, and carry off sewage. Certainly not the plants, of which we exterminate whole communities without batting an eye. Certainly not the animals, of which we have already extirpated many of the largest and most beautiful species. A land ethic of course cannot prevent the alteration, management, and use of these ‘resources’, but it does affirm their right to continued existence, and at least in spots, their continued existence in a natural state.” (Leopold, Sand County Almanac, originally published 1949. From the essay, “Land Ethic”, pg. 204).

The grasslands should be considered the keystone to the health of the region and with the demise of their health; the remaining watershed fell to poor health. Many people fell ill (and frequently died) with lung ailments due to inhalation of dust. Native and domestic animals either fled from the region or died off from starvation and shear impact of the dust storms. My grandfather instilled in me the appreciation of food and not wasting food when he told me stories of having to eat “sand pork”. The winds were so extreme that the soils would pierce through the flesh of anything that did not take shelter. Many animals died or were slaughtered do the severity of their injuries. Because food was scarce, the homesteaders could not afford to waste any livestock. Sand pork is just one example of

this. And as the name indicates, the flesh of the animal was filled with sand. Some people across referred to it as “grit pork”.

In 1934 congress enacted the Taylor Grazing Act. This was the first act to attempt to regulate grazing on public lands. The act established grazing districts on public lands and a permitting system (still in use) as a means of monitoring and regulating the amount of livestock grazed in an area. The act states that, “during periods of range depletion due to severe drought or other natural causes, or during epidemics, the Secretary (of agriculture) may remit, reduce, or refund in whole or part, or postpone payment of grazing fees for the time the emergency exists.”(Taylor Grazing Act of 1934, §315). The intentions of the act were to begin to minimize the degradation of the range from over-grazing (over-use) and support the regeneration of the grasslands.

As the Dust Bowl qualified as a state of ecological emergency, the government began an intensive livestock reduction program. Range managers were set out to evaluate the health of rangelands and in areas exhibiting severe impact of drought; livestock were rounded up and killed. One of the most famous and heart-breaking examples of this occurred on the Navajo reservation. On the Navajo reservation there was a “great sheep reduction program” in which the U.S. government gathered up all the sheep and killed them even though people had a close relationship with the animals and needed them to survive. The Navajo stories account that once they killed off all the sheep the grasses died and then the

rains stopped- not the other way around. (Personal communication with Roy Kady, former president and current advisor of Dine be Iina, Sheep Is Life).¹

“We knew what the government had done to the Navajo...and we knew what they were doing to the rest of us. And the same is true here...our animals weren't hurting the grasses- we couldn't afford to let them even if we wanted to- we needed the grasses just like we needed the cattle- it was worse once they killed the animals.” (Mr. Weir)

The livestock reduction programs covered most of the southwestern grasslands and Kiowa was no exception.

“In 1935 the government came here and said we couldn't have these cattle on this land- that the cattle were getting to be skin and bones and that the land wasn't fit to have them- and they rounded up all 35 of them and killed them- and then they dug a big hole and threw them into it- I was a little boy and my father was afraid how it would upset me to know what had happened so they hid me inside so I wouldn't see all those cattle get killed” (Mr. Weir)

“Did they compensate you?” (HY)

“Oh- I suppose they thought they did- they gave us maybe \$2 for all of them- but it was nothing to try to live off” (Mr. Weir)

“Did they realize that was all you had to live off?” (HY)

¹ "Sheep is in every essence an important part of our culture and traditions. It is important to celebrate our sheep traditions and our lifeways. Our Sheep Is Life Celebration re-centers us in the cosmos of our universe; it is our blessingway ceremony for our continuance here on earth, and for the next generations to come." - Roy Kady, former President of DBI

“I don’t think they cared. That’s what I mean, the thought they were serving the interests of the country’s people- but all they were interested in serving was their own ideas called themselves.” (Mr. Weir)

(From interview September 2005)



“Strong Winds. Elmer, Hoy, Alfred, Cowan, c. 1929 (above); Connelleys at home, Kiowa, c 1929 (right)

To make a living during hard economic times, the Connelleys learned the importance of diversifying their roles and responsibilities in the community. The unpredictable crop-yields with dry farming led to the need to expand beyond agriculture. A few of Elmer’s cousins and uncles worked in the coal mines in Vermejo and Raton and earned a modest wage as coal-town “company” employees. Raton basin had approximately nine coal mining towns/company towns (Brilliant, Swastika, Blossburg, Gardiner, Sugarite, Yankee, Koehler, Dawson, Van Houten) with populations up to 13,000 during the peak coal/railroad economy (Pappas, M., 2003).

Elmer decided to try his hand at coal mining. He went one day. The day he went there was a partial collapse of a mineshaft and the miners were temporarily trapped in a small area. His claustrophobia set in and he feared never seeing daylight again. The mineshaft was dug out but Elmer never returned to the mines. From that day forward he was determined to do whatever it took to support their family with the exception of mining.

One of Elmer's economic ventures was the purchase of a barber chair. He set it up in their home and offered shaves and haircuts to all the area men. His reputation got so good that his clientele expanded to everyone, children and women included. He also drove the school bus that brought in a small monthly stipend. Around 1924 the Connelley's expanded their business venture. They installed a gas pump and set up a general grocery - as the sign read, "Kiowa Grocery: Gas & Oil and Fresh Produce" (see photo below).



Kiowa Grocery: Gas & Oil, Fresh Produce. Kiowa, New Mexico, c 1924



(L) The Connelley Homestead, c 1929. Garden in front and birch and cottonwood windbreak maturing. (R) Hoy and Elmer "Pop" after digging new well, c 1929

People who lived through those times knew the significance of not wasting and saving everything. This hardship, although profound, is an excellent teacher of how to live within

one's means. Even after years of sustaining through the worst of the hard times, many were unable to sustain by living within one's means. The drought combined with the economic depression forced many people to move. *"It didn't rain for six years....and people had to leave...as much as they wanted to stay they couldn't afford to...their lives depended on it."* (Albie Price).



Connelleys & family, including Grandpa and Grandma Levitt (Delia's mom and stepfather), Eddie Ferbee (Delia's brother), and Frank Prowell (Dorthea's husband), Kiowa c 1933

In 1933 Hoy Connelley hoped a train and headed west. Like many of the “dust bowlers”, he headed to California seeking work in the orchards and farms. He worked as a seasonal, migrant farm worker- primarily in the citrus groves near Corona, California. His brothers joined him soon after. Dorothea fell in love with Frank Prowell another homestead farmer, and they moved to be with his family in Hereford, Texas. Around 1936, Elmer got work

at the Lockheed-Martin factory also near Corona, and the family migrated for work. They were able to make enough money with their seasonal laboring to retain their homestead. They continued to work seasonally in the winters in California until 1937. Alfred and Cowan stayed in California, taking permanent positions at Lockheed-Martin, and Hoy, Elmer, and Delia returned to Kiowa.

In 1937, Hoy was offered a position with the US Forest Service as the District Ranger out of Tres Piedras, New Mexico. This was his first position and start of a long career in natural resource management. He was thrilled to receive the job and wrote home to his parents weekly expressing his enthusiasm and awe to be in such a position, “where he even got his own bunkhouse”, a hand-hewed log cabin. Because his room and board were paid for through his post, he saved all his wages and sent them to help support his parents. It was through the wages from this job that Hoy saved enough money to buy an irrigated farm, and get his folks out of the hardship they faced on their Kiowa homestead.

In 1941 Elmer and Delia Connelley had met the means to the end- they could no longer sustain themselves on their homestead. Overall, the land in the Raton Basin had been so denuded and striped of its fertility, even a modest kitchen garden could not be sustained. They had lost the few cattle they kept, the swine, and the fowl. They had to move. They had managed to stay on their land beyond the timeframe of many of the other

homesteaders of Kiowa and the region, but they simply could no longer survive in their beloved Kiowa.

One pattern of land-use in the west has been the transition from the smaller scale to the larger scale “homesteads”. This has occurred in many ways, but especially in agriculture. A common saying is “go big, or get out”. This pattern is reflective of the story of land-use in the Raton Basin and also the fate of the Connelley homestead.

The Dust Bowl left many small homesteads abandoned and those who stayed capitalized on the newly available lands, acquiring them as large, contiguous sections of land. Most of the land that was initially used as farmland and subsistence homesteading was converted to grazing and ranches. As new lands became available, and in combination with public grazing lands, ranches expanded and went big. In 1941 the Connelleys sold their homestead to their neighbors, the Weir family.

Hoy bought 40 irrigated acres in Mesilla, New Mexico and the family headed south. Hoy moved with his parents and helped get the farm going. But in 1942 Hoy enlisted in the 51st Army Airborne and was sent off to WWII.



Hoy Connelley, WWII portrait, c 1942



The farm in Mesilla was already established in alfalfa, cotton and green chili and had a large adobe farmhouse. The land was irrigated off four separate ditches and a few smaller *acequias*. All the waters

flowing back to the southern reaches of the Rio Grande.

(Above) Delia and Elmer picking cotton; (right) Elmer



irrigating alfalfa fields; Proud of their corn (below) Stock Farm, Mesilla, c. 1945



They planted an orchard with peach, pecan, apricot, pear and apple trees and in the garden around their home, Delia planted beds and beds of iris, calla lilies, daffodils, tulips, roses, wisteria and winter jasmine. They decided to use much of their irrigated land to establish a dairy farm and named it “Stock Farm”. They were the main dairy in Mesilla and Mesilla Park for many years.

CHAPTER 6

Home: Constructions of Identity in Place

*The soul is a region without definite boundaries:
it is not certain a prairie
can exhaust it
or a range enclose it:*

— from "Terrain" by A.R. Ammons



Elmer and Delia, "Grandmommie and Pop", Stock Farm, Mesilla New Mexico c. 1955

Although my great-grandparents moved away from Kiowa in 1941 they never let go of Kiowa being their home. They, along with many of the other homesteaders, would return annually as a pilgrimage, for a reunion. I honestly think that although it was a place of hardship, it also was the place of freedom, a refuge in many ways. It also was the first place for many, who were oppressed and landless, to be able to reclaim their sense of identity in connection with place: an invaluable offering. In defining the concept and perceptions of home/land for immigrants and people subjected to cultural diasporas, Gupta (1992) states, “Displaced peoples cluster around remembered or imagined homelands or communities as symbolic anchors” and that memory of place is used to construct the new lived world/community.

In this sense stories and memories of “home” construct the current sense and inhabitation of community as well as inform and shape the constructed future of the remembered landscapes of “home”. As Barry Lopez writes, “the Stories that unfold against the local landscape, and that give expression to the enduring relationships of life, are as critical for people as food or water. The mythic landscape is not the natural landscape, but mythic and natural landscapes overlap at certain visible points in the land. And the limits of the local landscape, are not something that can be politically negotiated; they are fixed in mythology. They are not susceptible to adjustment” (Lopez, 1986)

CHAPTER 7

Returning Home: Findings

I was entrusted many “things” from my grandfather Hoy, including a deep love and appreciation of grasslands. In all senses and ways, Hoy was truly a man of the grasslands. Born unto them, raised through their cycles and evolutions, he was committed. He spent his entire adult career working in range management, focused on regenerating grasslands in arid regions around the world. He worked directly with the pastoral peoples, primarily nomadic herdsman, developing an understanding of their knowledge of the land and place and then helping provide range management strategies to restore the grassland conditions. His work took him, and his family, to live and work in Pakistan, Kashmir and Afghanistan, and later the *llanos* of Peru, places that were climatically and ecologically akin to Northeastern New Mexico. As far away as they lived, they always knew New Mexico was “home” and would return to New Mexico before continuing onward again. In essence, they continued the same pattern of lifestyle- migrating and then returning to their home/land or home/place.

After my grandfather’s passing I was given his library of range management, agricultural and botanical books, as well as an extensive archive of photographs (many shared in this story). Throughout my research I returned to his books, his sources of information, to gain insight into that era of land-management and tenure. Surprisingly (or perhaps not

surprising), little has changed in relation to how to take care of the land. In 1938 the United States Department of Agriculture published the, “Annual Yearbook on Agriculture” titled, “Soils and Men”. I turn to a report titled, “ The Remedies: Policies for Public Lands”-

“The obvious and, in fact, the only way to rebuild and protect the soil of the public domain is to restore the range cover...One means to restore the range cover would be to give it complete rest...The magnitude and the difficulties of placing the enormous area of public domain under management should not be minimized. Depletion of the range and deterioration of the basic soil have gone so far that restoration will probably require at least as many years as did depletion and deterioration to the present condition...A More or less radical psychological change among range users will be necessary...But all of these things are merely indications of the price that must be paid for the disregard of nature’s laws over a half a century or more.” (Clapp, E.H., 1938).

On returning to Kiowa, in 2005, I had the opportunity to meet Mr. Weir, the last homesteader in Kiowa. His parents had passed quite some time before as he was in his late 70s when I met him. Over the sixty-year time span following the Connelleys departure from Kiowa, the Weirs had acquired over 2,000 acres of land, which they operated a cattle ranch on. By the 1970s Mr. Weir had sold off most of his stock, and by 2005 he had 120 head of cattle remaining. He rotated the cattle in grazing plots he’d

fenced across the ranch and they shared the grasslands with large herds of antelope. Even in September, the grasses were abundant with very little exposed ground. Seventy-five years following the drought of the Dust Bowl, the land was slowly healing with the regeneration of the grasses.

Referencing back to the 1938 Yearbook of Agriculture that stated, “depletion of the range and deterioration of the basic soil have gone so far that restoration will probably require at least as many years as did depletion and deterioration to the present condition”. Seventy-five years following the deterioration of the soils and range the grasslands were showing clear signs of resiliency. Areas that were not fenced for cattle grazing demonstrated at least 40% ground cover. There were no obvious signs of erosion in these areas. There were no rills or other incisions that would indicate erosion advances. Without conducting a thorough watershed analysis, to restore the grasslands, they seemed to simply need rest.

This speaks to the larger pattern of the landscape, extending back to the earliest inhabitants of the Raton Basin. Based on a historical analysis of cycles of inhabitation, the pattern of abundance with precipitation and then dispersal with drought has been the land’s teaching. It has never been a place for permanent inhabitation, people have come through utilizing the resources during their time of abundance, but when the resources have diminished or gone dormant, the people have moved on. The same is true for the animals. The grasslands have not been a place for permanent grazing. Grasses are one of

the few plant classifications that can handle being tromped on, grazed, and burned. But they also require rest. Native grazers have much larger migration patterns, and do to both the scope of their range and their seasonal cycles of migration; they have far less impact on the range than livestock². When grasses are grazed too intensively their nutrient loading does not replenish and the root structure and rhizomes, the main part of the grass plants, die. This is what holds the soil in place. The above surface grasses catch the water and light, and help sustain the rest of the watershed. But without the roots, everything would erode.

“As we felled and burned the forests, so we burned, plowed, and overgrazed the prairies. We came with visions, but not with sight. We did not see or understand where we were or what was there, but destroyed what was there for the sake of what we desired. And the desire was always native to the place we had left behind.”

(Wendell Berry, *The Gift of Good Land*, Essay: *The Native Grasses and What They Mean*, 1979)

The grasses may be an allegory for regional planning and natural resource management overall. Without roots, everything would erode. Society has a tendency to be so forward looking for quick advancement, that we rarely look back to understand how to do things.

² As long as their populations remain in a balanced state and large predators are a factor in the ecosystem.

We rarely rely on our local histories, natural and cultural, to inform our modes of operating or for planning. The words of Wendell Berry, “We came with visions, but not with sight” reflects the limits of our understanding of how live in a right relationship with place. Vision, as defined by the Hawaiian word, *akakú*, represents seeing with our minds, whereas *sight*, *nana*, implies observation and careful attention to the world around us³ (Meyer, 2003). Utilizing this Hawaiian worldview and distinction, what has been lacking is *nana*- the observation and careful attention of the world around us.

To apply these concepts in a contemporary field of planning we can turn to the theories and practice of Indigenous planning. In the center, or core, of Indigenous planning exists origins, the beginning place, a native worldview. It is from this place of beginnings that everything radiates out from and takes shape. In articulating the premises of Indigenous planning Ted Jojola defines a native world-view as one that embodies, “values that were essential toward attaining a balanced and symmetrical interrelationship between humankind and the natural environment.” (Jojola, presentation of Turtle school Case Study to the Oneida Nation). The trajectory of a native (or indigenous) world-view is multi-temporal and spatial. As Jojola further stated, “ (Indigenous) world-views are endowed with ideals that integrate the past and the present, and projects itself into the future.” (Jojola).

³ Meyer, M. (2005). Lecture on Hawaiian Epistemology at University of New Mexico, Native American Studies lecture series, April 28, 2005.

In her writing, “What are Humans For?”, Viola Cordova (2005) writes that an indigenous worldview retains specific boundaries, a homeland, which is not something owned but rather a place one belongs to (p.219). Cordova adds that homelands are the place of origins, or creation and creation stories lay out the instructions of roles and responsibilities, of how to live in right relationship with place. From this perspective, it is the human’s responsibility to adapt to the needs and transformations of place, not the other way around. Cordova added an ethical baseline stating that if a worldview holds the beliefs that, 1. Humans are not alone, and 2. Humans occupy a specific place, then it is natural for humans to be cooperative and if our survival is dependent upon certain conditions prevalent in our area, then we must maintain those conditions in order to continue our survival. (p.213).

In the article, *A Critical Pedagogy of Place*, Gruenewald (2003) states a clear relationship between decolonization and reinhabitation. Gruenewald suggests that reinhabitation may not be possible without decolonization. The premise he builds on is if, “reinhabitation involves learning to live well socially and ecologically in places that have been disrupted and injured, decolonization involves learning to recognize disruption and injury and to address their causes.” (Gruenewald, 2003). This theory supports the process of

learning from the story of place, the budding of a land ethic, and the necessity of being in right relation with our environs.

As place evolves, it is our role to adapt to the changes of the environment and our responsibility to see the trajectory of transformation. Jojola wrote that, “Change is a process of transformation and adaptation,” and that, “transformation was tempered by the need to assure the community that new ideas were mindful of the past, cognizant of the present, and suitable to the future.” Bowers (2001) points out, decolonization as an act of resistance must not be limited to rejecting and transforming dominant ideas; it also depends on recovering and renewing traditional, non-commodified cultural patterns such as mentoring and intergenerational relationships.

In the story of Kiowa, there have been many voices who have communicated the same story, from the early bison and bison hunters, to the Apache and Kiowa, to the homesteaders, migratory birds, elk, deer, antelope. Kiowa chief, Satanta, was often considered to be the spokesperson of the High Plains. He spoke of the need to be mobile, that the land was not a place of long-term habitation. He said that people live best on the land when they moved with the seasons. In one of his most quoted speeches to congress (c 1885) Satanta stated:

“ I love this land and the buffalo and will not part with it. I want you to understand well what I say. Write it on paper...I hear a great deal of good talk from the

gentlemen the Great Father sends us, but they never do what they say. I don't want any of the medicine lodges (schools and churches) within the country. I want the children raised as I was I have heard that you intend to set apart a reservation near the mountains of [western Oklahoma]. I don't want to settle; I love to roam over the prairie; I feel free and happy; but when we settle down we get pale and die....A long time ago this land belonged to our fathers; but when I go up to the [Arkansas] river I see camps of soldiers on its banks. The soldiers cut down my timber, they kill my buffalo; and when I see that my heart feels like bursting; I feel sorry.'"

To reconcile our repeated errors and absence of deep understanding, it is imperative that the patterns of place inform our habitancy, stewardship and planning. Understanding the inherent pattern of place is the key to true sustainability, it enables a depth of understanding of both the communities we are a part of and the larger systems as a whole. When we come to see a pattern of a piece of the whole, it is then that the greater whole may begin to be imaged. Our work, and our clarity of how the small-scale ecosystems function, enables and leverages effective work on the larger watershed. “The aspiration of aboriginal people throughout the world has been to achieve a congruent relationship with the land, to fit well in it. To achieve occasionally a state of high harmony or reverberation. The dream of this transcendent congruency included the evolution of a hunting and gathering relationship with the earth, in which a mutual regard was understood to prevail;

but it also meant a conservation of the stories that bind the people into the land” (Lopez, 1986).

Kiowa has been a place that has been erased from many modern maps and is slowly disintegrating from local memory. From a distance, a passer by may see it as a “no-man’s land”. A vast expanse, uninterrupted by built form. As I reflect on the essence of a “no-man’s land”, I realize that perspective of a place being a no-man’s land may actually be a very good thing, perhaps it is what has prevented the land from modern development.

Also having such places allows us an opportunity to be humbled, to feel incredibly small in the immersion of something wild, expansive, and open. And when such places are not easy to inhabit perhaps we come to a deeper understanding of our own mortality and our deep reliance on the health and resiliency of the land that supports us. To return to a land ethic, our egos need to be diminished. Kiowa has the power of doing this.

CHAPTER 8

Future Directions: Education and Awareness- Towards a Deeper Ecology

Environmental education is a big component of conservation. When we know more, we develop deeper relationship, and in turn, care for. But there remains a disjunction between education and action. In the article, “Overcoming Barriers to Ecologically Sensitive Land Management” (Thompson, 2004) three barriers are identified that inhibit our ability to recognize environmental problems, or further, to live in a right relationship with place:

- Lack of local ecological knowledge
- Difficulties in recognizing or perceiving the environmental problem
- The connection between awareness, emotional involvement, and pro-environmental action

To address the first two barriers, I return to the process of engaging in the story of place as a key ecological teacher. Also through this process of engagement, our attunement to environmental problems is refined. The last barrier identified requires a deeper engagement of the psyche.

To evolve our thinking, and in-turn our doing and our actions, and to evolve with the changing needs of place, planners and individuals alike need to begin with a deep understanding of place.

“Care flows naturally if the 'self' is widened and deepened so that protection of free Nature is felt and conceived as protection of ourselves ... Just as we need no

morals to make us breathe ... [so] if your 'self' in the wide sense embraces another being, you need no moral exhortation to show care ... You care for yourself without feeling any moral pressure to do it ... If reality is like it is experienced by the ecological self, our behaviour naturally and beautifully follows norms of strict environmental ethics.” (Naess, 1989)

As deep ecologist Arne Naess (1912-2009) stated, if we can attain a sense of *being* in place, and attunement to place, our environmental ethics shall evolve naturally. *Being* in place requires a detachment from ego and anthropocentrism. There are numerous paths of letting go of ego, and attuning to all we are a part of, whether this is through long-term inhabitation and land tenure, or through contemplative action, all paths require the time of being in place, of walking the land, of seeing it through cycles, of being still within it and being made humble. Through time and attentiveness to place, we may come to recognize our roles and responsibilities to it.

A major distinction reckons clarification for our role, and habitancy, in environment: the distinction between limiting damage vs. creating benefits. A great emphasis of the sustainability movement has focused on limiting damage. Technologies have been utilized as a primary tool for supplanting the impacts we have had on our environment. Social, architectural and planning trends have led a wave of “sustainable” technological solutions that apply *and* imply a “better than” mentality. I define a “better than” mentality in relation to a “substitute” mentality. We may build our houses out of “alternative” construction materials because it is “better than” the alternatives. Indeed, it is true that

many of the functional sustainable technologies are better than the alternatives. But do they lead us to a better understanding of place?

When we inhabit place and attempt to limit our damage, or impact, we are simply trying to slow or temporarily halt, the evolution of the world around us. This thinking is stuck at a functional level. It does not co-evolve with the constancy of nature's change.

Addressing this paralysis of thinking/doing is a key component to the multi-spatial and multi-temporal Indigenous planning paradigms. Just a Viola Cordova (2005) states, we need to adapt to our environment, not the other way around.

Ecological education must be interwoven into the local community and it is imperative that it holds a role in land-development as well as land management. Additionally, an ecological education needs to extend much further than lessons of botany, or soils, or water catchments. Although this level of ecological education is useful, it tends to be stuck on product rather than processes. For example, we may learn plants to incorporate into our landscaping that are native or drought tolerant, but do we learn the role these plants have in the larger succession of ecology? This is where history, natural and cultural, holds a role.

The story of place informs a potential inhabitant of the processes of evolution, or the trajectory of the land and how it evolved to its current state. By looking back at the

trajectory of the evolution of place, patterns emerge. Even in the continuum of a changing ecosystem, patterns replicate. When we see replication of pattern, I would argue, that such patterns are indeed the essence of a place. For lack of another way of explaining it, replicated patterns are the nucleus of the place's identity. The place may change but the essence stays constant. Although abstract to conceptualize, this begins to acknowledge the Greater. The spirit of place. Or as the Apaches of this region know it- *usen* (Cordova, 2005).

To create ecosystem benefits rather than simply limit the impact, our aim needs to be regenerative. The premise of a regenerative approach to planning is acknowledgment and honoring of the essence of place as well as reinvigorating its ecosystem functions and role in the larger ecological context. Recognition of the pattern of place is the starting point. From there, an ecological analysis can support the significance of this pattern of place in the larger whole.

In looking at the pattern of Kiowa, the grasslands have been the teacher of how to live in right relationship. When the grasslands are abundant, all can gather. The grasslands become a "commons" and place of diversity and interchange. There are seasons or temporal cycles when the grasslands are capable of supporting a temporal inhabitancy, providing resources to sustain those who are in a greater migratory flow. Just as there are

cycles of precipitation and abundance, there are seasons of drought in which the grasslands cannot be the provider, and when, in a state of fragility, it is our role to tend to them as compassionate stewards of place. To try to change this pattern would literally be trying to rewrite the history of 66.4 million years. I think these concepts are critical to hold, and contemplate upon, *before* addressing conservation strategies or natural resource management.

Only through this reflection and contemplation of the pattern of Kiowa will I presuppose ideas for its future. Kiowa, and the greater Raton Basin, are an area of New Mexico in which very little research has occurred. A thorough watershed analysis would be an additional and effective tool in understanding the breadth of conservation potential as well as provide a biological and hydrologic baseline of the existing conditions.

Fundamentally, the essence of Kiowa is a community of warm season, high elevation bunch grasses, of antelope, elk, prairie dog, warbler, hawk, and coyote. It is a community with some of the greatest span of geologic and cultural history on the North American continent. Grasslands provide numerous ecosystem functions. *One of the primary functions of grasslands is erosion control, which is clearly demonstrated as we witness the demise of grasslands and pursuant erosion problems.*

Second to erosion control, *grasslands create a vast area of water catchment and infiltration*. The surface area of the world's grasslands create the largest areas of both water and soil catchment- preventing soil loss and accumulation in surface waters and our oceans and recharging our aquifers. It is not coincidental that the largest aquifers lie under plains ecosystems. *Further, grasslands provide an excellent source of carbon sequestration*. Again, this is based both on the vast surface area as well as the complex biotic fabric covering the area. With current climate challenges of global warming, and policies being set in place to offset warming trends, *the role of grasslands in carbon sequestration is promising*.

In relation to ecological opportunities Kiowa is an opportunity to contribute to the conservation of critical habitat and the grassland ecosystem. This would provide much larger watershed benefits (local, regional and downstream) including improvements of surface water quality and retaining groundwater. *Conservation of the grasslands also contributes to the regeneration and diversification of species*.

Building on a watershed analysis, Kiowa has the opportunity to contribute to larger grassland conservation efforts. The grasslands of Kiowa are also a part of a much larger contiguous physiographic region that extends along the backbone of the North American continent (the Rocky Mountains) and that continues down into the *llanos* and *altiplanos*

of South America. This is a major wildlife corridor and international flyway for migratory birds; both of which use the grasslands as habitat, food, and nesting. Prairie lands and grasslands are endangered from further development and have already been largely compromised by land-use policies, development and industrial agriculture. There are several environmental organizations that are collaborating in an expansive grassland conservation initiative. Regionally, the Nature Conservancy and Trust for Public Lands have contributed to this conservation effort. One goal of this initiative is to create a contiguous grassland habitat that links the grasslands of North America down to South America. This is a natural migratory route and fragmentation of the habitat continues to threaten the populations of both flora and faunal species. For this conservation effort to be successful it will require full participation and collaboration of private landowners, governmental agencies and environmental organizations.

Governmental agencies invested in the conservation of the grasslands include the Natural Resource Conservation Service (NRCS) and the Bureau of Land Management (BLM). The NRCS has a grasslands reserve program targeting assistance to landowners in the restoration of grasslands and rangeland and the BLM maintains much of the oversight, regulation and monitoring of the public grasslands of New Mexico. Additionally, the US Forest Service has established National Grasslands including the Kiowa (outside of

Clayton, NM) and Rita Blanca Grasslands in the Eastern New Mexico region. Currently, grazing is permitted in the public grasslands, including the National Grasslands.

Current grassland 'conservation' areas and public lands areas cover a vast amount of land and there are limited resources for the oversight of land management. Although I think all vested interests should have a voice in long-term regional planning, I think the future of the grasslands needs to return to a local initiative. Much potential lies in 'Community Natural Resource Management' initiatives and this is an area for further discussion. Of the most promising examples of community natural resource management of grasslands, I refer to the Malpais Borderland Group. The Malpais Borderland Group is a collaborative community-based organization comprised of ranchers, other private landowners, the Trust for Public Lands, and state and federal land agencies. The success of the Malpais Borderlands group has been the diversity of the landowner participation and the retention of decision-making in the local community. The environment of the Malpais Borderlands group is also an arid grassland and much of the collective interest has been on the restoration of the grasslands and fire ecology as a means of management and restoration. For further information: <http://www.malpaiborderlandsgroup.org/>.

CHAPTER 9

Casting the Seeds: Using the Story of Kiowa for Further Stewardship

The story of Kiowa is both unique and universal. The intricacies of the land and people are, indeed, woven into a specific place and times. It is the intersection of Place and of migration of people moving through Place that is the launching point of a dynamic, co-evolving relationship. Utilizing the story of Kiowa, we, as planners, can reference the lessons learned as seeds for future stewardship and planning endeavors. In essence, this story may be seen as a fractal of a more expansive pattern and applications to the field of community and regional planning.

The Connelley's story illuminates the need to refine the balance between migration and stewardship. It is a lesson of learning to listen to the land—of understanding how to read a landscape through its many cycles and changes. A good steward takes care of the land in a way that, ultimately, flourishes in a mutually beneficial relationship: a relationship in which the wellbeing of both land and steward is enhanced and improved. Coming from a legacy of farmers, my family understood the importance of tending to land. However, farming their own land instilled a heightened tenacity to not only care for, but to persevere. Their resiliency and perseverance were admirable but, perhaps, a bit too ambitious. Their perseverance outlived what the land could provide for. As true stewards,

they recognized the needs of the land. As dedicated farmers they knew when the soil and homestead could give no more; when they had, too, reached their limits of providing. This marked their departure from Kiowa.

In homesteading lingo there is a term applied to those who leave, they abandon ship and are deserters. In many ways this view was comparable to giving up and laden with negative connotations. Paradoxically, when the health of the land is direly impaired, one of the best things that can happen is for humans to retreat for a while and cease to put demands upon the resources of the watershed. After a period of rest, a more thorough assessment of the level of health of the land can be tried.

My family's story is also a lesson of true neighborliness. In small, rural communities and economies, especially during periods of hardship, cooperation and collaboration are imperative if the people/culture are to survive. The homesteaders truly made connections like members of the same clan. They bonded in an acknowledgement of reliance upon one another. These connections not only provided for food and survival means but also gave sustenance and expansion to their social breadth. In the simplest ways of speaking, they shared what they had in excess and could rely on their neighbors when in need. But more than trading pinto beans for lye soap, they traded stories and songs and grew kinship that in the end was boundless.

Like many of the homestead families, my family retained their ties not only to the land but also to the people. My family was not alone in their migration to southern New Mexico. Their close friends and neighbors moved with them, as well as their extended families. And in their new home/place they continued to share as if as family. And every year the Kiowa homesteaders would return to Kiowa and have reunions. The Kiowa reunion was truly the highlight of the year. My great-grandfather passed away in 1968, but my great-grandmother continued to return to Kiowa accompanied by my grandfather (until he passed) and my uncle, up until her time of passing at age 98. In reflection, I ask what does this story entrust for the future of Kiowa and what plots may it seed in the broader field of planning?

By looking at the histories—cultural and natural—of Kiowa, it is clear that Kiowa is not a place destined for permanent habitancy. It is a place that requires long periods of rest before the cycles of grassland abundance can be harvested. What is evident is that the basin holds incredible potential for conservation initiatives.

Future planning and conservation initiatives must truly have a “grassroots” approach. They should be informed by the land as the primary teacher and the local residents who hold multi-generational knowledge of the dynamics of place. Currently, the region (the Raton Basin) is sparsely populated. The community that continues to live in the grasslands are primarily ranchers, living on and ranching land that has been within their

families for many generations. It is these local residents who are the entrusted stewards of the land and who must be engaged and central to all conservation efforts and regional planning endeavors.

The starting point for all conservation initiatives should be to identify the local champions. Who are the effective and committed stewards of Kiowa? Who is passionate about seeing the land cared for and regenerated for future generations so that all the species of the grasslands may thrive? Who can see the potential of the latent seed beds-envisioning grasses that hit the bellies of bison and the *placitas* filled with spring waters and migratory birds? These are the local champions conservation initiatives are waiting for.

And as anyone who has lived in a big family or rural community knows, negotiating and planning happens in the kitchen. The kitchen is the heart of the home and it's around the kitchen table where all sorts of business and thoughtful conversations play out. In a community as far and widespread as those that lie within the Raton Basin, conversations and planning need to begin at the kitchen table. Efforts of "outsiders" (i.e. conservation organizations) to plan for this community simply would not work without intimate engagement with the local residents and landowners. And the sheer scale of the region and vast openness in between villages suggests a need for conversational drift: seeding conversation for stewardship strategies one landowner at a time, or perhaps a few

neighbors at a time. And most likely doing so sitting around a kitchen table. These ideas and conversations do, and will, drift like grass florets and settle and coalesce as is right for the community.

At the same time, resources are necessary for conservation strategies to unfold. A collaborative of local stewards and regional conservational agencies could pair place-based knowledge with larger conservation efforts so that the two may leverage upon one another. This is how the Malpais Borderland Group achieved ecological restoration and conservation successes. There are many conservation organizations currently working on grassland initiatives. Regionally, the Nature Conservancy has actively pursued multi-faceted conservation strategies for the grasslands of New Mexico and along the Rocky Mountain Corridor. As an agency centered on the Southwest locale, the Quivira Coalition has proven successful at developing conservation partnerships between land-based peoples and conservation agencies and organizations. Both of these agencies could be positive contributors to regional conservation planning strategies.

Finally, and most importantly, Kiowa is a wild and complex place. In order to understand what Kiowa is asking for and offering as gifts; there needs to be an opportunity for people to be present in Place, to come to know the Place overtime and come to know themselves within it. My vision for my family's homestead would be a small center for contemplation and deep ecology. A hermitage within the grasslands of

Northeastern New Mexico. A place for people to stay during seasonal migrations and come to know all of the life there. Truly as a place of wide open expanse, it is also a very good place to loose yourself in, to be humbled and deepen one's understanding of Creator. I would love to see the library of local knowledge root into such a place so that it can be gathered and then disseminated for more people to learn by. It is a simple vision but one that suits the land and offers much potential. If we are to be good stewards, *we must* learn how to listen to the land again and observe the emergence of patterns over time.

CHAPTER 10

Post-Script

In closing I wish to honor the last of the Kiowa homesteaders, Mr. William (Bill) Weir. I have come to realize that there are times when fate really is the determinant of destiny and all one can do is trust and allow for things to flow, to be. When I made a decision to embark on this research, as a personal commitment to the values to propose, I had very little to go on other than my family's achieves and stories. Northeastern New Mexico is a region that has been fairly ignored- both scholarly and in relation to modern politics and development. My kinship with it was based on my family's kinship and recognition of Kiowa as being a sacred and beloved "Home".

When I returned to Kiowa at the start of this research in 2005, I was guided by my gut and the stars, and that is no exaggeration. I had visited Kiowa on family reunions in my youth but never had been in the driver's seat. Night had fallen by the time I reached the Raton Basin and dark was setting in. I had a USGS map with topographic landmarks but no places names and my dog, a blue heeler named Hoku, accompanying me. The darkness of the night-skies and depth of stars are of quality to make one weep. If not by the shear beauty of seeing the universe uninterrupted, then by the absence of being able to navigate roads! Instincts guided me on course and I set camp for the night with a full-moon rising over Horseshoe Mountain.

A heavily mustached man in camouflage driving a dually-diesel Chevy awakened me in predawn September light. He informed me it was open season for antelope and I'd best pack up before I inadvertently got injured. A rather abrupt awakening but succinct. I packed and continued down the dirt highway.

I knew I was close to where I wanted to be, but was not definitively sure of accuracy and then, I received my sign. Bill Weir, an elderly man, sat atop his Deere tractor circa 1954. He was sitting at the edge of the road, tractor off but an oil rag was shoved into the gas tank, and he smelled of fumes. He was the first approachable person I saw, so I pulled over to ask, "Excuse me sir, I'm trying to find Kiowa", and his eyes lit up and he replied, "Well, you've done good. You found it. You're here."

Mr. Weir claims he got word from God, or the Creator, that he needed to go out to the road that morning and wait. Cause I'd be coming. And I seem to have received a similar message that I'd have someone to talk with as I had set out on my ventures. It was a day of mutual bonding and many hours of storytelling.

He literally stood as the last homesteader in Kiowa. And as it so happened, also was the caretaker of my family's land. That day of fate, and instinct and universal guidance,

brought much forward and I wish to honor Mr. Weir, as he was the last voice speaking on behalf of the land.

“We had community because we had love. The homesteaders loved one another and helped each other out. They were always going on a checking in on a each other....”
(Mr. Weir)

“It seems that is a critical part of community- a love of your neighbor and a love for the land” (HY)

“Well yes, that’s it- isn’t that the foundation of community” (Mr. Weir)

(Interview with Mr. William “Bill” Weir, Kiowa homesteader, September 2005)

A Letter to the Last Kiowa Homesteader from the Granddaughter of Another

11.28.05-

Outside this warm interior, the earth is covered in snow. Late November now. From my window I can watch the flocks of endless cowbirds scurry for grass seeds not yet fallen or buried in the winter's onset. Even in my home, the chill passes beyond my coats of wool making me wonder if thick skin is really genetic. Seems mine has grown thin. Miles off to the northern horizon, I wonder how this night and this season will affect the grasslands of Kiowa. How on earth people survive the snowstorms sweeping down across the Rockies, down unto the high elevation plains, I can hardly comprehend. What was it like the first winter they (my great-grandparents) were there? Huddled in close I suppose, warming with a central fire in the dugout they knew as home. Ah, but how the winds howl through there. Pre-dawn September was just shy of unpleasant. Pre-dawn November must be downright rude.

Somehow though, the winter seems a suited season for the isolation of those plains. There is no quiet quite comparable. No sounds of distant traffic. No aircraft passing over. No white-noise hum of electricity. With only disruptions from the wind rattling tall grass, the hissing of the grass like the dance of a snake. Occasional raven or starling yakking. But

really, no noise. Reminded of our earth world before the technological disruptions of human. Breathing flows easier when so lucky.

But must a place be erased from a map to have such a remarkable resonance of life in balance?

Now, only you Mr. Weir, to be the last keeper of story. To be the last one to say goodnight to the stars and winds of the four directions. To say goodnight to the antelope and hello to owl. I hope you are warm in these weary days. I hope your roof no longer leaks and that the woodpile is tall. I pray for you and the landscape you embody and the grassland songs that rock you to sleep tonight.



Elmer Connelley and "Star" taking a bow, Stock Farm, Mesilla, New Mexico, c1955



View south of Kiowa Mountain from Connelley homestead, Kiowa, New Mexico. 2005

Photo: H Yaryan



View west of Sangre de Cristo Mountains from Connelley homestead, Kiowa, New Mexico.

2005 Photo: H Yaryan



View facing northwest from Connelley homestead, Raton Basin, Kiowa, New Mexico. 2005

Photo: H Yaryan



View of Horseshoe Mesa (Mountain), Raton Basin, from Kiowa, New Mexico. 2005 Photo:

H Yaryan



Remains of Kiowa schoolhouse, Kiowa, New Mexico, 2005. Photo H Yaryan



View of Mesa Grande, Raton Basin, from Kiowa, New Mexico. 2005 Photo: H Yaryan



Remains of dugout- faint impression in ground, Connelley Homestead, Kiowa, New Mexico, 2005. Photo: H Yaryan



View of Mesa Larga, Raton Basin, from Kiowa, New Mexico. 2005 Photo: H Yaryan



Old Kiowa Schoolhouse, Kiowa, New Mexico, 2005. Photo: H. Yaryan



Cottonwood and Birch Trees Planted (c 1920) as Shade Trees and Windbreaks on Connelley Homestead , Kiowa, New Mexico, 2005. Photo: H. Yaryan



Cottonwood and Birch Trees Planted (c 1920) as Shade Trees and Windbreaks on Connelley Homestead , Kiowa, New Mexico, 2005. Photo: H. Yaryan

APPENDICES

Range Plants of Kiowa

Vegetation Classification	Common Name	Latin Name	OCCURRENCE	Brief Description/Role in grassland health
GRASSES				
	Western Wheatgrass	<i>Agropyron smithii</i>	3,000- 10,000'	1-2.5' tall; Early Season forage
	Redtop	<i>Agrostis alba</i>	5,000- 10,000'; most common 7,500'	1-3' tall; Summer; Good soil binder; well adapted to wet acidic soils
	Cane bluestem	<i>Andropogon barbinodis</i>	3,000-7,000'	2-4' tall; Good indicator of range condition because rapidly decreases under improper use
	Big bluestem	<i>Andropogon gerardi</i>	3, 500- 9,000'	3-4' tall, up to 6' in good range; stands decrease under improper range use otherwise most abundant in good conditions
	Little bluestem	<i>Andropogon scoparius</i>	3,000-9,000'	1-4'; Does best when grazed during growth season; overgrazing replaced by gramas
	Poverty threeawn	<i>Aristida divericata</i>	3,100- 7,000'	1-3'; Spring forage; population increases under heavy use; high population may indicate overgrazing
	Red threeawn	<i>Aristida</i>	3,100- 7,000'	6-20"; Warm season,

		<i>longiseta</i>		perennial bunch; increases under heavy use; high population may indicate overgrazing
	Sideoats grama	<i>Bouteloua curtipendula</i>	3,000-9,000'	15-30"; Warm season, perennial bunch; Highly palatable easily killed by overgrazing
	Black grama	<i>Bouteloua eriopoda</i>	Below 7,000'	1-2'; Warm season, perennial sod grass; high nutrient; low populations and cropping below 2" indicates overgrazing
	Blue grama	<i>Bouteloua gracilis</i>	3,000-8,000'	6-12"; Warm season, perennial sod or bunch grass; provide poor soil protection; at higher elevations dominance indicates deteriorated range
	Hairy grama	<i>Bouteloua hirsuta</i>	3,000-10,000'	1-2'; Warm season, perennial sod or bunch grass; withstands grazing well; high nutrient
	Buffalograss	<i>Buchloe dactyloides</i>	3,000-7,000'	2-12"; Warm season, perennial sod; Withstands grazing well but is killed with overgrazing
	Galleta	<i>Hilaria jamesii</i>	3,500-7,500'	1-2'; Warm season, perennial sod; withstands grazing well; good for erosion control
	Wolftail or Texas Timothy	<i>Lycurus phleoides</i>	Below 8,500'	1-1.5'; Warm season, perennial bunch grass; Populations

				decrease rapidly w grazing
	Mountain muhly	<i>Muhlenbergia montana</i>	5,500- 9,000	1-2'; Warm season, perennial bunch grass; like eponderosa pines ecosystems/meadows
	Mat muhly	<i>Muhlenbergia richardsonis</i>	5,000- 7,400'	3''-2'; Warm season, perennial sod; Increases with grazing
	Ring muhly	<i>Muhlenbergia torreyi</i>	3, 100-7,000'	3''-2'; Warm season, perennial sod; Abundant on overgrazed range
	Spike muhly	<i>Muhlenbergia wrightii</i>	3,800-9,000'	2''-2.5'; Warm season, perennial bunch grass; abundant on range in good condition
	Kentucky bluegrass	<i>Poa pratensis</i>	6,500- 10,000'	1-3'; Cool season, perennial sod; soil stabilizer
	Bottlebrush squirreltail	<i>Sitanion hystrix</i>	3,000-10,000'	Up to 24''; Cool season, perennial bunchgrass
	Indian grass	<i>Sorghastrum nutans</i>	3,700- 7,000'	4-8'; Warm season, perennial bunch grass; if continually grazed shorter than 5-8''
	Alkali sacaton	<i>Sporobolus airoides</i>	3,100- 7,500'	Up to 3.5'; Warm season, perennial bunch grass; dominant
	Sand dropseed	<i>Sporobolus cryptandrus</i>	3,000-7,000'	1.5-4'; Warm season, perennial bunch grass; increases under grazing
	Sacaton	<i>Sporobolus</i>	3,100- 7,500'	3-6'; Warm season,

		<i>wrightii</i>		perennial bunch grass; likes to burn; grazing early spring
	Needle and Thread	<i>Stipa comata</i>	3,700-9,000'	1-4'; Cool season, perennial bunchgrass
	New Mexico feathergrass	<i>Stipa neomexicana</i>	3,100-7,200'	16-36"; Cool season, perennial bunchgrass; withstands heavy use
	Sleepygrass	<i>Stipa robusta</i>	5,600-9,000'	3-6.5'; Cool season, perennial bunchgrass; can have narcotic effect on livestock
FORBS				
	Fringed sagebrush	<i>Artemisia frigida</i>	3,000-7,200'	Woody brush; up to 4'
	Loco weed	<i>Astragalus spp</i>	3,100-8,000'	Most are perennials; but wooton loco is annual/biennial; poisonous
	Russian thistle (tumbleweed)	<i>Salsola kali</i>	Up to 7,000'	Invasive; sandy soils
TREES and SHRUBS				
	Fourwind saltbush	<i>Atriplex canescens</i>	Up to 9,000'	Up to 6'; drought resistant; saline or alkaline soils
	True mountain-mahogany	<i>Cercocarpus montanus</i>	4,500-9,500'	2-10'; bushy shrub; gravelly, stony and cinder sites
	Winterfat	<u><i>Eurotia lanata</i></u>	3,000- 9,500'	1-3'; bushy branched semi-shrub; winter forage
	Broom snakeweed	<i>Gutierrezia sarothrae</i>	3,000- 8,000'	1-2'; semi-shrub;
	Cacti- Pricky pear and cholla	<i>Opuntia spp</i>	3,000- 7,500'	1-10'; increase under heavy grazing; dominance indicates overgrazing,

				deteriorated range
	Mesquite	<i>Prosopis juliflora</i>	3,000- 8, 500'	2-10'; thorny shrub tree; dominance indicates overgrazing, deteriorated range
	Gambel oak	<i>Quercus gambelii</i>	4,800-9,000'	Small tree; mixed with juniper; habitat for turkey, deer, elk; acorns for food source
	Skunkbrush sumac	<i>Rhus trilobata</i>	3,100- 9,000'	Many branched shrub; 2-7'; sandy, gravelly, rocky or bottomland sites
	Yucca	<i>Yucca glauca</i>	Up to 8,500'	Less than 4'; drought hardy

Source: New Mexico Range Plants, New Mexico State University, Cooperative Extension Service Circular 374, 1970.

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