



People of the Poudre

An Ethnohistory of the
Cache la Poudre River National Heritage Area,
AD 1500 – 1880

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For the

Poudre Heritage Alliance,
Larimer County, Colorado



Engraving of Chief Friday from 1880.
(Published in *Harper's Monthly*, March 1880, p. 492,
Denver Public Library Photographic Collection).

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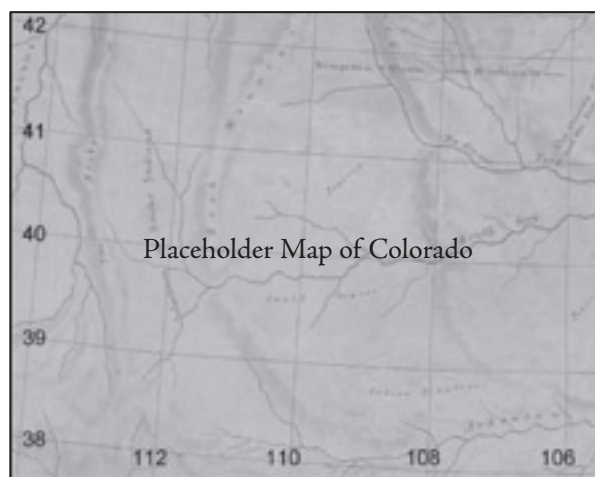
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Preface

The Cache la Poudre River National Heritage Area in northern Colorado was established by an act of the U.S. Congress in October 1996 (Figure 1). It was the first area so designated west of the Mississippi River. The Poudre Heritage Area follows the Poudre River downstream from the Roosevelt National Forest boundary to the river's confluence with the South Platte River east of Greeley (Figure 2). The 45 mile long corridor encompasses the 100-year flood plain. This stretch of the Poudre River is also called the "lower" or "working Poudre."



<Fig 1 >Figure 1. Relief map of present day Colorado



<Fig 2> Figure 2. Cache la Poudre River Heritage Area

National Heritage Areas are a relatively new concept designated to foster relationships among regional stakeholders such as residents, government agencies, non-profit groups, and property owners by encouraging them to work collaboratively to achieve shared goals. Congress designated the Cache la Poudre River National Heritage Area “to provide for the interpretation ... of the unique and significant contributions to our national heritage of cultural and historical lands, waterways, and structures.” The Poudre River area received designation because of its significant contribution to the development of water law in the western United States and the evolution of highly complex water delivery systems.¹

The Poudre Heritage Alliance (PHA), a non-profit organization with members from local governments, organizations, and the general public, has been formed to oversee the management of the Poudre Heritage Area and to provide for the interpretation of its significant resources. The establishing legislation forbids the management entity from owning or regulating water and/or property rights.

This manuscript was prepared at the request of the PHA to enhance its interpretive program and should be considered a companion work to several other projects that the PHA has previously sponsored. These include an inventory of water delivery structures, a description of landscape changes along the river corridor, and an examination of history of the water delivery system and legislation.² Although the history of water delivery in the West is the focus of the PHA's efforts, it has also recognized that the area has a long history of use prior to the arrival of Europeans and Euroamericans. The purpose of this report is to document the presence of Native Americans along the Poudre corridor between AD 1500 and AD 1880.

A combination of archaeological and ethnohistoric approaches is used to address the following motivating research questions:

- What forces led to changes in native occupation and culture? How did the horse, gun, and European contact impact different native groups?
- What were the Native Americans lifeways? How did they accommodate environmental fluctuations?
- What was the role of trade? Was there any gender specialization?
- How did the relationship between Native Americans and Euroamericans—fur trappers, traders, settlers, army, etc.—evolve over time?
- Is there evidence of occupation of the Poudre corridor by Native Americans, and if so what did this occupation look like?

Ethnohistoric methods rely on the study of historical sources--written records and imagery--to provide information about an ethnic or cultural group. Main sources for the research include published material, sketches, and photographs produced primarily by Euroamericans rather than Native Americans.

Limitations of time and budget precluded the use of other research approaches such as oral histories and interviews of tribal descendants, linguistic analysis, tribal folklore, non-English historic sources, and the study of museum collections.³ Given the limitations of the historical and archaeological record, these additional approaches should be considered for future research.

This research was directed and sponsored by the Cache la Poudre River National Heritage Area / Poudre Heritage Alliance and Colorado State University under the direction of Dr. Susan Boyle, National Park Service (NPS), and Dr. Larry Todd, Department of Anthropology, respectively. Review was provided by members of the PHA and NPS. Research assistance was provided by the Fort Collins Public Library Local History Archive, Colorado State University Morgan Library Special Collections, and the Colorado Office of Archaeology and Historic Preservation. Thoughtful editing and review were provided by Deb John. All errors are the responsibility of the author.

Introduction



Native Americans have occupied the lower Cache la Poudre valley in northern Colorado for thousands of years but little is left of their legacy in modern geographic names. All modern place names date to Euroamerican arrival in the valley.⁴ Initially, the early French trappers left their mark with Laporte and Cache la Poudre; loosely “the gate” and “store or bury the powder.” Later, the U.S. military left its stamp by labeling Fort Collins and Soldier’s Canyon. Early developers and politicians were responsible for Larimer, Weld, and Greeley names. Some places were named for local physical features like Horsetooth Rock, Sheep Draw, or Fossil Creek.⁵

Since a Native American legacy has not been retained in local place names, two other avenues of research--ethnohistory and archaeology--are used here to explore protohistoric Native American presence along the Poudre River. In simple terms, ethnohistory uses historical information to produce a cultural study of an ethnic group. However, unlike a conventional ethnohistory that focuses on a single group through time, this book concentrates on a single area and examines the groups that occupied that area through time. Thus, this work is geographically rather than culturally centered.⁶

A major limitation of the ethnohistoric research approach is that it requires the existence of historical records that provide an accurate portrayal of the past.⁷ In North America historical records have seldom been produced by ethnic groups themselves but instead by Europeans (French, Spanish, English, etc.) or Euroamericans, and as such are subject to significant reporter bias. For the Poudre valley, the historical record is problematic on both fronts--lack of material and lack of first person reporting.

Nineteenth and twentieth century Euroamerican ideas of definitive land ownership, boundaries, and use and rules of political alliances, to name a few, have conditioned what was recorded in and written about the past. An idea that will be explored more thoroughly below can provide a brief illustration here. Nomadic groups associated themselves with large tracts of land in order to meet their subsistence needs. That area was often shared by other groups, each using the area at different times. To Euroamerican eyes the land appeared to be unoccupied or unused if they didn’t see native people in the immediate area. Furthermore, since native people generally only remained in a particular place for a short time, their use and, to Euroamerican thinking, their claim to the area was minor. As a result, traditional native land use and what should have been land rights were ignored in the quest of Euroamerican development. Writings of the nineteenth century reflect this expansionist idea and the moral imperative to put land to “good” use. Filters such as these need to be teased away to get a clearer understanding of native people on the Poudre.

In contrast, archaeology uses material remains to understand culture. Archaeology is limited by differential preservation [SB] of material. Lithic [SB] materials are preserved longer than basketry, for example, since basketry materials are subject to rapid decomposition when exposed to weather while stone tools are not. As an archaeological site becomes older, fewer items are left with which to understand the people who occupied it. As a consequence, it is often very difficult to assign an ethnic identity to an archaeological site unless it is

very recent. Instead, sites are assigned to “culture groups” which may imply nothing more than a similarity of material remains with no suggestion of shared language, belief systems, kinship, or organization. The archaeological record in the Poudre valley has these problems. In addition it lacks systematic research and as a consequence, site density is low.

This book is organized into seven chapters to help in understanding what happened to the Native American legacy along the Poudre River. Who was here? How did Native Americans use the Poudre valley? Where did they go?

Chapter 1 looks at the natural or geophysical setting to get the lay of the land so to speak. What resources were / are available? How is the river today different from what it would have been two hundred or two thousand years ago?

Chapter 2 provides a framework to discuss culture and ethnic groups and then looks into the archaeological record in Larimer and Weld counties before AD 1540. The Poudre valley was a place of continued but dynamic occupancy.

Chapter 3 traces the spatial and temporal movements of cultural groups who have been in northern Colorado beginning about AD 1540.

Chapter 4 examines the written record of Native Americans in the Poudre valley.

Chapter 5 focuses on use of resources by the cultural groups discussed in Chapters 3 and 4. In particular, the role of plants and bison in the lifeways of historic people is explored.

In *Chapter 6* the impacts of Euroamerican horses, disease, and trade for native peoples is examined with a goal of understanding the movement patterns presented in Chapter 3.

In reality, the information available about the native people who used the lower Poudre area is far less complete and comprehensive than would be desired, so Chapter 7 looks at another model which may help in understanding the transitions discussed and concludes with suggestions for additional research that can help fill this gap.

~ Chapter 1 ~

Geophysical Setting

For most of human history, human lifeways have been conditioned by the environmental setting in which those people lived. Before the advent of on-demand heat, refrigeration, and rapid transportation, food and the needs for daily living were procured, consumed, and stored within a relatively small activity zone. As local resources were depleted or out of season, people relied on stored surplus or moved to a relatively richer environmental setting. The American Great Plains is an area requiring this kind of adaptation. Stephen Long, one of the earliest nineteenth century explorers in the area, characterized the Great Plains as the “Great American Desert” in 1820 because of the lack of lush vegetation and scarcity of water compared to the eastern United States. The lower Cache la Poudre River is situated on the western edge of this Great American Desert in an area called the Colorado Piedmont. This arid setting with highly variable climate conditions and animal life dominated by grazing herbivores has allowed only a limited set of lifeway options. Not until the introduction of irrigation technology and transportation networks were other lifeways feasible.

Colorado Piedmont

For convenience, Colorado east of the Rocky Mountains is often considered part of the High Plains subregion of the Great Plains physiographic province [SB]. More accurately, the lower Cache la Poudre River is situated in the Colorado Piedmont subregion just west of the High Plains (Figure 3). During the Tertiary period, particularly in the Paleocene (53-65 million years ago, mya [SB]geologic time scale--remove years from body of text) and the Pliocene (2 -12 mya) epochs, erosion of the Rocky Mountains deposited a mantle of river-borne sediments across what is now known as the High Plains creating a flat, featureless plain. In the Colorado Piedmont, these sediments have been eroded away by the actions of the South Platte and Arkansas river systems creating a lower elevation depression just east of the mountains.⁸ The Denver Basin extends within this depression from the Palmer Divide in the south to the Wyoming border in the north and includes the lower Poudre River.⁹ The division between the Colorado Piedmont and the High Plains is marked by an escarpment [SB] at the eroded edge of the Tertiary mantle running roughly north-south through Logan, Washington, and Ebert counties. Just west of Fort Collins the Colorado Piedmont gives way to the Foothills/Hogback region, a narrow area of elevation and environmental transition. The Rocky Mountains proper rise to the west of the Foothills. For this study, as the lower Poudre is fully within the Colorado Piedmont, only this physiographic subregion is discussed in more detail. It is important to recognize the close proximity of the foothills, mountains, and High Plains with their associated variety of resources were easily accessible from the Poudre corridor.

<Fig 3> Figure 3. Geophysical areas of northeastern Colorado

Robert Brunswig, University of Northern Colorado professor, describes the Colorado Piedmont as follows:

“The Colorado Piedmont sub-region ranges in elevation from 1067 meters along its interface with the adjacent eastern High Plains sub-region to around 1525 meters where it meets the foothills sub-region to the west. Its landscape is broken by numerous networks of small drainage valleys and largely ephemeral streams divided by rolling and occasionally steeply eroded hills ... [P]erennial watercourses such as the South Platte, Cache la Poudre, and the Big Thompson rivers, along with a large number of seep and spring-fed tributaries, support moist, riparian environments. Stream valley riparian corridors in the Piedmont presents [sic] microenvironments and habitats for a diverse variety of plant and animal species. Riparian microclimates are more humid and cooler than surrounding landscapes and represent reliable sources of water, protective cover, and food resources normally in short supply on the semi-arid prairies.”¹⁰

In particular along the Cache la Poudre River between Laporte and Greeley, elevation ranges from 1580 m (5200 feet) at Laporte to 1400 m (4600 feet) at Greeley.¹¹ The area is essentially flat except for the incised

river valley itself. Terraces along the river range in height from 3 to 15 m (10 to 50 feet) and generally have a scarp or terrace face on the river side. Modern towns such as Greeley, Fort Collins, and Windsor are located on these terraces. The river valley averages 1.4 km (0.9 mi) in width. South of the river, a north facing escarpment of 9 to 45 m (30 to 150 feet) demarcates the uplands that separate the Big Thompson and Cache la Poudre drainages.

Climate

Today most precipitation in the Colorado Piedmont is provided by rain and snow in late winter through late summer, roughly April through September. The annual average of 35 cm (14 in) can be highly variable (Table 1). Winds in open areas of the Colorado Piedmont have an average speed of 4.5 m/s (14.8 ft/sec) with the strongest winds occurring in winter and spring. Although winds are predominantly from the north and northwest in winter and the south and southeast in summer, topographic variation can make local wind patterns highly variable.¹² The chinook wind, a warm dry winter wind that can increase temperatures by 10s of degrees in a very short time and occurs on the lee side of mountain ranges like the Colorado Front Range, often moderates severe winter conditions.¹³ In addition, Chinook winds keep grazing grasses free from snow and cure those grasses so that their nutrients are preserved.¹⁴ Low precipitation and prevalent winds combine to give the Colorado Piedmont a water deficit (that is, evaporation exceeds precipitation) except along riparian zones [SB].¹⁵ In fact, in winter, the Longmont-Fort Collins-Greeley areas typically get less precipitation on average than the Denver area due to Denver's slightly higher elevation.¹⁶

Table 1. Comparison of climatic conditions at Denver, Estes Park, Fort Collins, and Greeley

	Denver	Estes Park	Fort Collins	Greeley
Precipitation				
<u>Metric units, centimeters</u>				
Annual mean (min, max)	33 (16, 57.5)	41 (24, 82)	37 (14, 70)	28 (14, 53)
April - Sept. mean	24	29	27	23
Annual snowfall	141	241	109	81
<u>English units, inches</u>				
Annual mean (min, max)	13 (6.3, 23)	16.1 (9.4, 32.5)	14.1 (5.6, 27.6)	11.1 (5.4, 20.9)
April - Sept. mean	9.5	11.5	10.6	8.9
Annual snowfall, in.	55.4	95	42.9	31.8
Relative humidity, %	48	64%	48%	52%
Temperature				
<u>Metric units, °C</u>				
January mean (min)	0 (-34)	-3 (-40)	-3 (-40)	-4 (-43)
July mean (max)	23 (41)	17 (37)	21 (39)	22 (42)
<u>English units, °F</u>				
January mean (min)	31 (-30)	25.7 (-39)	26.3 (-41)	24.5 (-45)
July mean (max)	73.4 (105)	62 (98)	69.5 (102)	72.5 (107)
Frosts and Clouds				
Mean last spring frost	May 3	June 6	May 8	May 20
Mean first fall frost	Oct 16	Aug 9	Oct 1	Sept 30
Mean % of cloudy days	24	12	14	14
Mean % of clear days	36	22	29	46
Elevation				
Meters	1610	2290	1520	1430
Feet	5280	7520	5000	4680

Source: Hansen et al., Climatology.

Although average rainfall is greater than 10 inches (25 cm), in many years rainfall is less and irrigation is required for crops such as corn, an important consideration for agriculture in the area. Also, while the table

shows the average first and last frost dates, frost can occur on any day of the year.

Less detailed information is available for climate conditions before modern weather data collection began. Table 2 shows a comparison of past climates with the present day. The culture periods shown in the table are discussed in later sections.

Table 2. Comparison of past climatic conditions with the present day.

Cultural Period	Time Period	Condition
Late Historic / Modern Protohistoric Middle Ceramic	Present AD 1500 - AD 1900 AD 1150 - AD 1500	See Table 1 wet/cool - dry/warm cycles drier/ warmer cooler / moister, increased
Early Ceramic Late Archaic	AD 150 - AD 1150 1000 BC - AD 150	warming and drying at end of period cooler and moister variable patchy mosaic
Middle Archaic	3000 BC - 1000 BC	environments,

Source: Wanner and Brunswig, "Late Archaic Skeleton." Modified to match text chronology.

Flora and Fauna

The Colorado Piedmont is considered a short-grass prairie or steppe vegetation zone. Although largely treeless with rolling hills, the plant and animal life is highly diverse.¹⁷ Both warm season and cool season grasses are found here (Table 3). Cool-season grasses mature during the late spring or fall and warm-season grasses mature in the late summer. Two important characteristics of the warm-season buffalo and grama grasses are their formation of sod and the ability to cure on the stem. Sod-forming grasses create tight interlocking roots that trap soil and prevent erosion in windy conditions. Grasses that cure on the stem retain high levels of digestible carbohydrates and crude protein that can provide, albeit at somewhat poorer nutritional levels than during the growing season, good graze throughout the year.¹⁸ The warm season grasses are highly tolerant of grazing and regenerate well. The combination of the early and late maturation of cool-season grasses and summer maturation of warm season grasses provides an extended grazing period of fresh grass. Standing cured grass is available during the remainder of the year. Bison are particularly well adapted to feeding on these grasses, able to obtain sufficient nutrients year round when domestic cattle can not.¹⁹

Table 3 lists other important plants found along or near the lower Poudre River. Table 4 lists important animal and bird species found here. Birds include both non-migratory and migratory species which use the area on a seasonal basis as part of the Rocky Mountain migratory bird flyway.²⁰ Steppe-ecology experts William Lauenroth and Daniel Milchunas list the adaptations of animal life for the short-grass prairie in response to its dry and fluctuating environment, the large amount of below ground primary productivity, and the simple vegetation structure: "[L]arge mammals [have] keen vision, migration, herds with complex social structure; small mammals [have] subterranean habits and hibernation; birds [have] ground nesting, drab coloration, migration, skylarking (courtship flights) and short fledging time; invertebrates [have] a relatively large proportion of underground activity."²¹ Chapter 5 examines how native people might have used these resources.

Table 3. Important Poudre area plants.

Type	Category	Name
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Grasses	Warm season	Buffalo grass (<i>Buchloe dactyloides</i>) Blue grama grass (<i>Boutelous</i> spp.)
	Cool season	Big bluestem (<i>Andropogon gerardii</i>) Western wheat grass (<i>Pascopyrum smithii</i>)
Forbs		Ricegrass (<i>Oryzopsis hymenoides</i>) Yucca (<i>Yucca</i> sp.)
		Prickly pear cactus (<i>Opuntia</i> spp.) Ground cherry (<i>Physalis</i> sp.)
Woody Plants	Dry land	Wild onion (<i>Allium</i> spp.) Sagebrush (<i>Artemisia</i> sp.)
	Protected/moist areas	Rabbitbrush (<i>Chrysothamnus</i> sp.) Currant or gooseberry (<i>Ribes</i> spp.) Chokecherry (<i>Prunus virginiana</i>) Hackberry (<i>Celtis reticulata</i>) Snowberry (<i>Symphoricarpos</i> spp.) Wild rose (<i>Rosa arkansana</i>)
	Riparian areas	Hawthorn (<i>Crataegus</i> spp.) Plains cottonwood trees (<i>Populus deltoides</i>) Box elder (<i>Acer negundo</i>) Willow (<i>Salix</i> spp.)

Sources: Taxon lists in this and the following table were compiled from Brunswig, Paleoenvironmental and Cultural Change, 89-90; Evans and Evans, Cache La Poudre, 137; Fitzgerald et al., Mammals of Colorado; Hart, Montana Native Plants, 87; Johnson and Larsen, Grasslands of South Dakota, Swan, Pleistocene and Holocene Deposits, 26; and Whitson et al., Weeds of the West.

Table 4. Important fauna in the Poudre area.

Type	Category	Name
	Extant	Pronghorn antelope (<i>Antilocapra americana</i>) Mule deer (<i>Odocoileus hemionus</i>) White-tail deer (<i>Odocoileus virginianus</i>) Coyotes (<i>Canis latrans</i>) Foxes (<i>Vulpes velox</i> and <i>Vulpes vulpes</i>) Badgers (<i>Taxidea taxus</i>) Prairie dogs (<i>Cynomys ludovicianus</i>) Jack rabbit (<i>Lepus townsendii</i>) Cottontail rabbits (<i>Sylvilagus nuttalli</i>) Thirteen-line ground squirrels (<i>Spermophilus tridecemlineatus</i>) Pocket gophers (<i>Geomys bursarius</i>) Kangaroo rats (<i>Dipodomys ordii</i>) Raccoons (<i>Procyon lotor</i>) Bison (<i>Bison bison</i>)
	Locally extinct	Prairie or gray wolves (<i>Canis lupus</i>)
Birds	Year-round	Black-footed ferrets (<i>Mustela nigripes</i>) Golden eagle (<i>Aquila chrysaetos</i>) Burrowing owl (<i>Athene cunicularia</i>) Great horned owls (<i>Bubo virginianus</i>) Ferruginous hawk (<i>Buteo regalis</i>) Swainson's hawk (<i>Buteo swainsoni</i>) Lark bunting (<i>Calamospiza melanocorys</i>) Mountain plover (<i>Choradrius montanus</i>) Horned lark (<i>Eremophila alpestris</i>) Meadow lark (<i>Sturnella neglecta</i>) Robin (<i>Turdus migratorius</i>)
	Seasonal	Red-winged blackbird (<i>Agelaius phoeniceus</i>). Great blue heron (<i>Ardea herodias</i>) Canadian goose (<i>Branta canadensis</i>) various ducks

Sources: See Table 3 sources.

River Appearance

The Cache la Poudre River is a mountain stream that emerges onto the Colorado Piedmont just west of

Laporte, Colorado. Downstream of this point, the prehistoric river was characterized by a braiding pattern with a coarse-gravel bed. During the Pleistocene (2 millions of years ago-11,000 years ago), the river probably carried a higher sediment load than it did at the onset of the Holocene period (starting about 10,000 years ago). With lower sediment loads, the river began to cut down or incise its floodplain and meander as the bed became more heavily rock-lined.

These conditions were in place until the arrival of the fur trappers in the 1800s. Elimination of beaver and their flow-controlling dams in the upper reaches of the river increased flow velocity and allowed more sediment transport downstream, returning the stream to conditions more like those occurring prior to the Holocene transition.²² Higher rates of flooding, higher water temperatures and a reduction in diversity of stream-life have been a continuing legacy of beaver dam removal. These impacts have affected the entire length of the Poudre even though the beaver dams were probably only on its upper reaches.

Within the last one hundred years, the stream has been channelized to accommodate urban development and flood control. Water diversion structures have modified the annual flow levels and contributed to increased stream bed erosion. A study of aerial photographs taken between 1937 and 1988 found that the overall width of the Poudre River west of Interstate I-25 had not changed during 50 years, remaining at about 4 m (13 feet). The river had, however, become straighter with more sweeping bends.²³ These changes are due to increased channelization for flood control, particularly within the Fort Collins urban area. Agricultural water removal and return flows have also contributed to changes in the river.

In their book *Cache La Poudre: The Natural History of a Rocky Mountain River*, local biology teachers and residents Howard Evans and Mary Alice Evans provide a comprehensive view of the Poudre from its headwaters to its confluence with the Platte in the early 1990s.²⁴ The river just east of Fort Collins “has lost its youthful ebullience [compared to the upper Poudre]. It is a tired and turbid stream as it flows past the city, at times little more than a trickle over cobblestones it has rolled from the mountains in times past. Walking the trails, one is often more impressed by past abuses than by the river’s present charms.”²⁵ At the confluence with the South Platte the river is “clouded with algae, sediments, and contaminants.”²⁶ Fish species are warm-water fish like the introduced carp, white suckers, fathead minnows, and sand shiners.²⁷ The stream banks are dominated by plains cottonwood and willow.²⁸

Early Euroamerican visitors and settlers to the area in the mid-1800s described the lower Poudre in somewhat different terms:

- John C. Fremont, member of the U.S. Topographical Corps, crossed the Cache la Poudre during both his 1842 and 1843 expeditions. On July 12, 1842, Fremont’s party crossed Thompson’s Creek (now called the Big Thompson) and at noon reached the Cache la Poudre which he described as “a very beautiful stream, one hundred feet wide, flowing with a full swift current over a rocky bed. We halted under the shade of some cottonwoods with which the stream is wooded sparingly. In the upper part of its course, it runs amid the wild mountain scenery, and breaking through the Black Hills [Laramie Mountains], falls into the Platte, about ten miles below this place.”²⁹ Fremont’s noon stop was between present day Windsor and Greeley. He seems to have headed more or less due north from there to arrive at Fort Laramie by July 15. In 1843 Fremont sought a more southern route through the mountains than that offered by South Pass in Wyoming.

When Fremont reached the Poudre River on July 28, he attempted to follow the river into the mountains. Although it took his party several days and they had to cross the river many times, even leaving it on occasion to find a route through to the Laramie Plains due to the rugged and narrow nature of the canyon, Fremont felt that the route might provide a viable wagon road in the future.³⁰

- In 1907, a Mr. J. R. Todd related his experience crossing the continent to a Judge Jefferson McAnelly. Todd joined George Pinkerton and a party of emigrants and young men from Iowa heading for the Oregon Territory in 1852. Todd's recollections have some errors regarding the naming of the Poudre, but his comments on the river's appearance are supported by other accounts of the time. According to Todd,

[t]he waters of the river were as clear as crystal all the way down to its confluence with the Platte. Its banks were fringed with timber not as large as now, consisting of cottonwood, boxelder, and some willow. The waters were full of trout of the speckled or mountain variety. The undulating bluffs sloped gently down to the valley which was carpeted in the most luxuriant grasses ... [i]n coming up the South Platte River they struck the mouth of the Cache la Poudre River at noon, and on the evening of the first day's travel on that river they camped. Game was plentiful, herds of buffalo were seen on the plains, as well as deer, elk, and antelope. To the travelers the Poudre Valley appeared to be the hunters' paradise. Trout were caught then along the Poudre River from its mouth to the foothills, and the small streams in the mountains were alive with them.³¹

- In 1859 Horace Greeley, editor of the New York *Tribune*, reported that the Poudre Valley was the "center of antelope country" and the only source of substantial wood for many miles: "[s]ince we crossed Clear Creek, on which there is on this trail a decent fringe of cottonwood, we had seen but the merest shred of small cottonwoods and some scrub willow at wide intervals along the larger water courses; but the pine still sparsely covered the face of the Rocky Mountains. Cache la Poudre has quite a fair belt of cottonwood, thenceforth there is scarcely a cord of wood to a township for the next fifty or sixty miles, and the pine is no longer visible on the hills near us, because they expose little but rock, and hence are swept by the annual fires."

³² Greeley noted the ephemeral nature of streams emerging from the mountains and flowing onto the plains: "[a]ll the streams of this region are largest where they emerge from the mountains, unless reinforced below by other streams having like origin, the thirsty prairie contribute nothing, but begins to drink them up from the time they strike it. The smaller streams are thus entirely absorbed in the course of five or ten miles, unless they happen to be sooner lost in some larger creek. Drouth, throughout each summer, is the inexorable and destroying tyrant of the Plains."³³

- Frontiersman Jim Baker, along with others, hunted along the North Poudre near present day Livermore and along Lone Pine Creek in 1860-1861.³⁴ The "plentiful" deer and mountain sheep were marketed in Denver.

- In the early 1900s Mrs. John Coy, an early Fort Collins settler who crossed the Plains in an oxen-drawn wagon with her husband, described her overland trip of forty years earlier. She recalled Helen Ames, a young girl who was a member of the wagon party in 1862, looking at the Poudre from a bluff near Greeley. The water was crystal clear but Helen was disappointed in not seeing any trout.³⁵

- C. A. Duncan arrived in the Poudre Valley as a child in 1865 wrote in his memoirs:
[d]uring the 1870's the river was nearly always clear and bed clean and covered with gravel

and boulders. There was but scant growth of trees along its banks. About the only grove near Timnath was on the east side of the river just south of what was known as the Strouse [sic] bridge ... There were some noble trees along the river banks at that time which must have been fifty years old. The most noted was the council tree on the Strause [sic] farm. There were three fine ones on an island just south of Buss grove. One on the west bank on the road running east and west south of Timnath and a few more on the south bank ... The two largest trees on the river at that time was one on the east side of the river about a quarter mile south of the Akin house and the other was on the Reid farm about a quarter of a mile north of Arther [sic] bridge.³⁶

Sketches made by Henry W. Elliott during F. V. Hayden's 1869 U.S. Geological survey of Colorado show many of the attributes described above (Figure 4 a-d). Trees are scarce and short, grasses dominate, and yucca are clearly illustrated. Large animals in the sketches are probably cattle rather than bison.

<Fig 4a> Figure 4a. "Laporte on Cache la Poudre River, Colorado

<Fig 4b> Looking into the Valley of the Cache la [Poudre]

<Fig 4c> Foothills of the Rocky Mountains at Cache la Poudre

<Fig 4d> Looking toward Cache La Poudre

While most of these early descriptions talk of the area in glowing terms, life on the Poudre posed many difficulties. Early Euroamerican settlers faced the challenges of severe weather, grasshopper plagues, and river flooding. Recorded weather events include the drought of 1842 during which Fremont had difficulty obtaining forage for his livestock, the hard winter of 1870-1871, and the drought of 1879.³⁷ Grasshoppers destroyed the corn and potato crops and most of the wheat crop in 1865, 1873, 1874, and 1876.³⁸ On the Cache la Poudre, Camp Collins, the original Army camp near Laporte, was destroyed by flood in June 1864.³⁹ Four floods were recorded between 1860 and 1910.⁴⁰ This rate of almost one flood per decade is typical of Front Range streams. In May 1864, Robert Hauck's cabin along Boulder Creek in present day Weld county was washed away after two weeks of continual rain.⁴¹ Hauck relocated his cabin to a site recommended by Arapaho Chief Left Hand, indicating that Native Americans were well aware of lowland flooding issues. In 1867, the Arkansas River flooded after torrential spring rains and wiped out Fort Lyon.⁴²

People living in the lower Poudre area quickly became aware of the resource opportunities, the climatic challenges, and the faunal adaptations described above and probably adjusted their resource use accordingly. Looking at the Poudre River today provides only hints of the river of the past. Today the river is warmer, slower, more heavily vegetated, and less flood prone than at any time in the past. Grassy bottomlands have been replaced by agricultural and urban activities. Access to the river has been controlled by fences and barriers. It may be hard to visualize the river during prehistoric times as a clear stream teeming with trout, banked by a few sparse cottonwood trees, visited by nomadic hunters and gatherers for over twelve thousand years. When Euroamericans arrived with their ideas of land ownership and water management and their creation of permanent settlements, they initiated the destruction of nomadic lifeways on the Poudre by limiting access to water, grazing areas, and camping locations and by eliminating local bison populations.

Chapter 2 - Before Coronado

Humans have occupied northern Colorado for at least 12,000 years. Until relatively recent times, all these people have been nomadic hunters and gatherers [SB]. Over time their primary prey has shifted from Pleistocene mammoth to modern bison and their tool kit has changed from elegantly worked lithic atlatl points to metal arrow heads, but only during historic times with permanent Euroamerican residence did the lifeway change to include settlements and horticulture.

Cultural Context

Prehistory in the Platte River drainage, which includes the lower Poudre River, can be partitioned into five broad stages to help in understanding people of the past.⁴³

- ⊙ Paleoindian (12,000 BC-5,500 BC)
- ⊙ Archaic (5,500 BC-AD 150)
- ⊙ Late Prehistoric or Ceramic (AD 150-1540)
- ⊙ Protohistoric (AD 1540-1860)
- ⊙ Historic (AD 1860 to present)

The Paleoindian stage is a period characterized by highly nomadic hunters of large Pleistocene fauna (mammoth, giant sloth, camels) and early Holocene fauna (large bison). The Archaic stage is a period of more broad-based adaptation with wider use of small game animals, more gathering, plant food processing, and storage. Habitation structures, although rare, begin to appear during the Archaic. The Late Prehistoric or Ceramic stage is identified by a shift from the use of dart/atlatl weapons to bow and arrow, the introduction of pottery, and the adoption of agriculture with the appearance of villages.⁴⁴ In northeastern Colorado, the nomadic lifeway of the Archaic continued into the Ceramic stage with the inclusion of pottery and bow and arrow. The Protohistoric stage begins with Coronado's arrival on the modern-day Texas coast in AD 1540. During this period horses, guns, European diseases, and European trade goods make their appearance in North America. On the Central Plains, horse-mounted nomadic buffalo hunter cultures emerge. The Historic stage starts when Europeans/Euroamericans arrive and create written records.

For most of the Plains the transition from the Protohistoric to Historic period occurs in the mid 1800s. During the 400 years between Coronado and the present, the Poudre region was occupied by a succession of groups. These groups include the Upper Republican, Dismal River Apache, and proto-Shoshone culture groups as well as modern tribes. Not only the Arapaho, Cheyenne, and Ute who are commonly associated with the area but also the Kiowa, Comanche, Sioux, Pawnee, and possibly Shoshone, used the area.

Through the Ceramic period everything that is known about prehistory is based on the archaeological record. Beginning in the Protohistoric period written records and oral accounts become important additional information sources. The remainder of this chapter will address the archaeological record in Larimer and Weld countries through the Ceramic period. The Protohistoric and Historic periods will be taken up in the next chapter with an emphasis on written information.

Prior to the Ceramic stage culture groups are generally identified by direct dating using radiocarbon dating [SB] and/or dendrochronology[SB], appearance of diagnostic projectile points [SB], and comparison of artifact assemblages and site features to dated sites. It may be a misnomer to use the term “culture groups” since relatively little is known about the non-preserved aspects of these peoples such as their religion, language, and social structures. Instead of the term culture groups, the term “archaeological culture” is sometimes used. This emphasizes the idea that the cultural assignment is based solely on the material record recovered through archaeology.⁴⁵ By the Ceramic stage, more complete artifact assemblages are preserved, and there is a better ability to assign artifact assemblages to a particular culture group. Only by the early part of the Protohistoric stage has it been possible to trace the development of historic tribes to precursor groups. In particular, the Kiowa Apache are thought to have developed from the Dismal River Apache who were centered on the Dismal River in Nebraska and the Pawnee are thought to have developed from the Lower Loup Focus , a culture located on the Lower Loop River in Nebraska.

Paleoindian-Archaic-Ceramic Stages

In this book two lines of evidence for the presence of native people in the Poudre valley--the archaeological record and historic documents--are examined. The archaeological record can provide important insight into how long people have used the Poudre valley and something about how they used the valley--within the limits of material preservation. With a time depth of thousands of years, the archaeological record is the best tool to help understand how people used the Poudre from Paleoindian times until the arrival of Coronado. The next chapter will take up the historic record and the Poudre since Coronado.

Larimer and Weld counties are among the largest counties in Colorado. Covering over 17,000 sq. km. (6,700 square miles) they encompass a combination of plains, mountains, and foothill topography.⁴⁶ As a result of this vast area and diverse landscape, no single comprehensive archaeological survey of these counties exists. Archaeological research in Larimer and Weld counties has been primarily conducted to address specific needs such as providing a cultural resource survey prior to pipeline construction, roadway expansion, or land development. As a result the archaeological record is spotty and biased. To get some sense of the overall archaeological record for areas near the Poudre River, these individual reports and surveys can be synthesized. Unfortunately, even with this synthesis, the record along the Poudre River is sparse. The Poudre corridor was the area of earliest Euroamerican settlement and agricultural impact. Disturbances like plowing, ditch construction, and intensive grazing would have quickly obliterated many archaeological sites; the likelihood of finding in tact archaeological sites in this area is low. It should also be noted that surface survey is often a poor indicator of buried sites. Particularly along flood plains, sites can be quickly buried and will not provide any surface indications until the stream cuts a new channel revealing artifacts in fresh cut banks.⁴⁷

The archaeological record is described in terms of “sites” (Table 5).⁴⁸ A site can be as small and simple as the location of a single arrowhead or as extensive and complex as the Lindenmeier camp site which is described below. If it seems that a site was used only once, it is considered a single component site; if used more than once by the same or different groups it is a multicomponent site.

Table 5. Descriptions of common archaeological sites in Larimer and Weld counties.

Site Type	Description
Open camp	A location where a group of people stayed for a period of time. The group can be as small as one person and the length of stay as short as one night. A camp can contain stone circles, hearths or fire pits, and indications of several types of activities such as food preparation and tool making.
Kill site	A camp where there was some type of protection from the elements such as a cave, rock shelter or overhang, or bluff. A location where the primary activity was killing of at least one animal. A location where animal(s) have been butchered. Small animals were often returned to camp for butchery while large animals were processed at or near the kill site. Heavy bones (like skulls) with low meat utility were seldom transported large distances from a kill site.
Burial site	A location with both intentional and unintentional interment of human remains
Isolated find	A single feature, project point, flake, ceramic sherd, without any other associated features or materials
Open lithic site	An unsheltered location where scattered debris from stone tool making is found.

A special kind of site is the “type” site. This is the site which is used to characterize the archaeological record of a culture group. Archaeologists usually designate the first site that was determined to be a new and previously unidentified culture as the type site for that culture. As research continues, sites with better examples of the material left by the culture are found but the type site remains unchanged. Joe Ben Wheat, a famous Colorado archaeologist, designated the Jurgens site near Greeley as the “type” site for the Plano period Kersey complex because of the regionally unique stemless lanceolate [SB] projectile points found there.⁴⁹

Sites can contain features and artifacts. Features include hearths, rock walls, cairns, house foundations, rock art, and stone circles. Features are distinct from artifacts in that artifacts are portable human-crafted or modified objects; features are nonportable. Stone circles are one of the more common feature types found on the Plains. Often referred to as tipi rings, some rings may have had other purposes such as ceremonial rings or hearth rings so the term stone circle or stone ring is preferred. Where the rings can clearly be attributed to teepees, the site may be called an architectural camp site (Figure 5).

<Fig 5> Stone ring near Soapstone Springs

Projectile points or pieces or points are a common artifact type found on the Plains. A projectile point is a piece of shaped material meant to be mounted on a shaft and thrown at a target. Shapes are generally triangular but can be elongated and lance-like or short and squat but all have a sharp, pointed end. Materials can include native stone or “lithics,” glass, or metal. Hafting or mounting on a shaft can be done with glues, lashing, or a combination of these. Hafting materials and shafts do not preserve well, and often only the projectile point is left. Larger projectile points were often mounted on spears and used with an atlatl or spear thrower. Smaller points, say the size of a finger nail or smaller, were arrow mounted and projected with a bow. Since projectile points often broke when used, finding a perfect point is less likely than finding part of a point or debris from tool making. Although projectile points are more commonly recognized, the “waste” flakes produced during tool making were frequently used as tools themselves. Flakes have sharp edges and make excellent knives and scrapers and can be quickly modified to make drills and shapers.

A wide variety of projectile points have been found in Larimer and Weld counties (Figure 6). Over time

the size of projectile points decreased and stemmed notched and unnotched points replaced stemless ones. In the historic period metal points quickly replaced lithic material.

<Fig 6> Figure 6. Lithic projectile point styles

Other common artifacts found in Larimer and Weld counties include manos, metates, and hammerstones. A mano is a stone, held in one or both hands depending on size, used as a grinding stone to make meals or flours from seeds and grind pigments from stone. Manos may be used as found or shaped to improve grinding. Rough materials like sandstones are preferred to keep good traction on the material being ground. A mano is paired with a metate or base stone. Metates can be portable or can be a worked depression in bedrock and are recognized by the worn trough or flat on the working surface. Like manos, rougher rather than smoother materials are better. Since metates are often large and heavy, they are left at favorite camp spots and used when in camp. Hammerstones are similar to manos but are manipulated with a striking rather than rubbing motion. Wear on a hammerstone is likely to be on the end rather than the long face as with a mano. Hammerstones are used to break bones to obtain marrow or as a striker when making a stone projectile point. Preferred hammerstones are selected from heavy, durable rocks.

Using evidence such as projectile points, stone tools, and features, sites can frequently be assigned to a culture group (Table 6). During the Paleoindian and Archaic stages, insufficient information is available to assign people to culture groups as they are traditionally defined--a group of people who share kinship, ritual, belief systems, geography, language, etc--so similarity of material remains is used to assign a archaeological site to a complex or archaeological culture. The idea of a complex allows discussion about sites with similar materials which may or may not have been created by groups with shared culture. For example, Clovis projectile points have been found across all North America, and given this large geographic extent, it is unlikely that all these people were of a single cultural group. During the Plano period a variety of distinctive projectile points have been found; again their time and geographic spread suggests a variety of cultures but insufficient information is available to assign each to more than a generalized complex.

Table 6. Detailed chronology for the Poudre valley.

Stage/ Period	Date Range	Main Culture Groups / Complexes	Diagnostic Materials
	12,000 BC - 5500 BC	n/a	
Clovis	12,000 BC - 9750 BC	Clovis	Large fluted projectile points, megafauna remains
Folsom	11,000 BC - 8700 BC	Folsom	Fluted projectile points, large bison remains
Plano	10,850 BC - 5500 BC	Agate Basin, Hell Gap, Cody, Firstview, Kersey	Large unfluted lanceolate projectile points, mass kill sites
Archaic	5500 BC - AD 150		
Early Archaic	5500 BC - 3000 BC	Mount Albion, Magic Mountain, Mountain Tradition	Large, side and corner notched points
Middle Archaic	3000 BC - 1000 BC	McKean, Magic Mountain - Apex	Lanceolate stemmed, indented base projectile points, ground stone

Late Archaic	1000 BC - AD 150	Magic Mountain - Apex	Large, corner and side notched points
Late Prehistoric	<u>AD 150 - 1540</u>		
Early Ceramic	AD 150 - 1150	Woodland	Ceramics, small corner notched arrow points with narrow necks
Middle Ceramic	AD 1150 - 1540	Central Plains Tradition - Upper Republican, Intermountain Tradition	Small, unnotched and side notched triangular arrow points
	<u>AD 1540 - 1860</u>	Dismal River - proto Apache, Apache, Ute, Comanche, Arapaho, Cheyenne, Kiowa, Kiowa-Apache, Shoshone	Trade goods (particularly metal and glass), stone circles, horse remains, rock art with horses/guns/disease/ European clothing

Source: Adaptation of Chenault, "Introduction," Table 1.1.

Larimer and Weld County Sites

As of February 2006, over five thousand archaeological sites have been recorded in Larimer and Weld counties, over half of these have been given non-Euroamerican cultural affiliation.⁵⁰ Only 25 sites are attributed to a modern Native American tribe including Apache, Kiowa, Cheyenne, Shoshone, Ute, and Navajo but most of these cultural assignments are questionable. These tribes Most of the sites are isolated finds (~1300), open lithic scatters (~600), or open camps (~500). Unfortunately isolated finds are not very informative except to indicate wide-spread, occasional landscape use. Sites are scattered across all areas of the counties without a noticeable preference for particular areas like the foothills or stream banks. Keep in mind that all areas of the counties have not been surveyed to the same degree; future research could change this conclusion dramatically. Additional discussion of archaeological sites and a recent survey just west of the Heritage Area are presented in Appendix A.

Over one hundred sites have been recorded within the Poudre Heritage Area. Of these, 47 are potentially of indigenous origin. Like the county-wide data, most sites are isolated finds or open camps. Only three sites have time frame information and all of these date to the Archaic period or older. No sites have been given tribal affiliations.

Although there a few archaeological sites directly on the lower Poudre, many of the sites in Larimer and Weld counties have been well researched and can be informative--revealing how people used the general area over time. Three general locations have especially interesting sites (Table 7): in Larimer county, there are many sites along the foothills margins, in Weld county many sites are found near Carr and many sites are found near the confluence of the Poudre and the Platte.

Table 7. Key archaeological sites in Larimer and Weld Counties.

Stage/ Period	Date Range	Site Name (Number)
	<u>12,000 BC - 5500</u>	
Clovis	BC 12,000 BC - 9750	
Folsom	BC 11,000 BC - 8700	Lindenmeier camp (5LR13 and Archaic)
Plano	BC 10,850 BC - 5500	Powars camp (5WL1369) Gordon Creek burial (5LR99)
	BC	Wilbur Thomas rockshelter (5WL45, into Ceramic) Jurgens camp and processing area(5WL53)
Archaic	<u>5500 BC - AD 150</u>	
Early	5500 BC - 3000	Spring Gulch camp (5LR252, into Early Ceramic)
Archaic	BC	Kersey camp (5WL48, into Early Ceramic) Owl Canyon rockshelter (5LR104, into Early Ceramic)
Middle	3000 BC - 1000	
Archaic	BC	Kaplan-Hoover bison bonebed (5LR3953)
Late	1000 BC - AD 150	Happy Hollow rockshelter (5WL101, into Middle Ceramic)
Archaic		
		Webster Feedlot burial (5WL2055)
Late Prehistoric	<u>AD 150 - 1540</u>	Agate Bluff site (5WL1478) Porcupine Cave (5WL1479) Fire Cave (5WL1480) Woodland Cave(5WL1481)
Early Ceramic	AD 150 - 1150	Roberts Ranch burial (5LR1683) Lightening Hill open camp (5LR284)
Middle Ceramic	AD 1150 - 1540	Kinney Springs open camp (5LR144) Roberts Ranch jump site (5LR100)
	<u>AD 1540 - 1860</u>	T-W Diamond architectural site (5LR200) Lykins Valley (5LR263)

Paleoindian Sites

At the confluence of the Cache la Poudre and North Fork, unnamed site 5LR1098 is a large multicomponent open camp site of 90 hearths, three stone circles, and surface lithics.⁵¹ The site is now seasonally inundated by Seaman Reservoir. The site contained projectile points and ceramics indicating occupation from Paleoindian to Late Prehistoric times. Projectile point styles included corner and side-notched points from the Early and Middle Ceramic period and a side-notched point similar to ones found at Intermountain tradition sites.

The Lindenmeier site, in northern Larimer county about 56 km (35 miles) northeast of the Poudre River, represents one of the few known large camp sites of the Paleoindian Folsom people.⁵² At the time of Folsom occupation, roughly 11,000 BC, the area was a large lush valley of meadows and marshes, attractive to the large bison, pronghorn, rabbit, wolf, coyote, and turtle found at the site. The camp was in a sheltered area on the east side of the foothills that provided water and gravels suitable for stone tools. In addition to stone tools, bone tools were recovered such as awls and punches; other bone items included objects that might have been beads and gaming pieces. Evaluation of the lithic materials suggests that the site was used by different groups on multiple or possibly simultaneous occasions and might have been the site of multi-group encampments.⁵³ Lindenmeier also has an Early Archaic component dated to about 4200 BC.⁵⁴ An excavated hearth contained pine, cottonwood, prickly pear; pollens included pine, juniper, grass, willow, cattail, sagebrush and unidentified chenopodium.

The Lindenmeier site was discovered by 1924 by local artifact collectors and formal excavations were

conducted by the Smithsonian Institution between 1934 and 1940.⁵⁵ Now a National Historic Landmark, the City of Fort Collins purchased the Soapstone Ranch property, which contains the Lindenmeier site, as part of their 2005 Natural Areas Program.⁵⁶ Starting in 2006, the City and Colorado State University are conducting an extensive cultural resource survey of Soapstone Ranch.

Over two thousand artifacts including flakes and broken tools were recovered from the Folsom period Powars site near Kersey.⁵⁷ Animal bone was found but was too fragmentary to identify. The short-term campsite sits on a low terrace overlooking the South Platte River.

The Gordon Creek burial, located on Gordon Creek, a northern tributary of the Cache la Poudre River about 20 km (12 miles) west of Ted's Place, is one of the few burials recovered from the Paleoindian stage dating to about 7,700 BC.⁵⁸ The intentionally dug grave pit contained a female aged 26-30 years old at time of death, oriented with head to the north in a flexed position. The bones were stained with hematite [SB], and artifacts included among others a large and a small unused biface [SB], a hammerstone, a polished stone, two worked animal ribs, and four elk incisors.

The Wilbur Thomas rockshelter, a sheltered campsite near Carr, has had at least five separate occupations up to Historic times although no specific dates have been recorded.⁵⁹ Cody points indicate that the shelter was used in the Plano Period. Early Archaic period Mountain and Middle Archaic McKean and Magic Mountain points have also been recovered.

The Jurgens site, 15 km (9 miles) east of Greeley near Kersey and dating from the Plano period, contains three areas representing a long-term camp, a short-term camp, and a butchering or processing area.⁶⁰ As no kill site and no bison skulls have been found at the Jurgens location it is likely that animals were killed elsewhere and dismembered for processing. Fore limbs, hind limbs, and backbone portions were transported to the processing area which contained evidence of at least 35 bison.⁶¹ Faunal remains also included deer, moose, pronghorn, elk, rabbit, beaver, muskrat, canid, reptiles, and fish. Tools included bone and stone tools that could have been used for butchering, hide processing, and seed grinding. Two atlatl hooks were recovered, one of antler and one of modified bison tooth.

Archaic Sites

The Spring Gulch site, 8 km (5 miles) north of Livermore, Colorado, contains multiple open camp components, suggesting multiple occupations dating from the early Archaic through the later part of the Ceramic Stage.⁶² The Archaic levels contained hearths and McKean and Magic Mountain projectile points. Much of the lithic material was locally available Morrison Formation gray quartzite. Bison and mule deer were the dominant animal species found although jack and cottontail rabbit, possible bobcat, pocket gopher, vole, red-tailed hawk, western painted turtle, and freshwater clam were also found. Charred goosefoot seeds were found in one of the hearths. In the Early and Middle Ceramic levels, most of recovered tool material was quartzite and with a few obsidian pieces.⁶³ Along with ceramic fragments, artifacts included ground stone grinding slabs, handstones, and hammerstones. Also near Livermore, is the multicomponent Archaic and Ceramic stage Owl Canyon Rockshelter where small corner-notched, serrated-blade "Hogback" points were found.

The Kersey site is a large multicomponent camp overlooking the South Platte River and was occupied

in the Archaic Stage and the early part of the Ceramic Stage and excavated by the University of Northern Colorado archaeological field school in the 1970s.⁶⁴ Archaic occupation materials included tools and flakes of chert, quartzite, and chalcedony; a single mano [SB] was recovered. Faunal materials included mostly bison, some artiodactyls [SB], and jackrabbit. Flora included goosefoot seeds. A later Ceramic stage burial of an immature individual with no artifacts was also found at this site.⁶⁵

The Kaplan-Hoover bison bonebed, located west of Windsor, Colorado, and 0.8 km (0.5 mi.) south of the present Cache la Poudre River, is an Archaic Stage bison trap.⁶⁶ Although no associated camp site has been found, there is significant evidence of human processing of the estimated 200 bison killed in the arroyo trap. Dating to about 860 BC, it is unclear whether the trap was used by driving animals over an arroyo edge or up the arroyo from the Poudre River floodplain. The trap indicates a knowledge of animal behavior patterns as the arroyo was routinely used by bison to move from grazing areas on the uplands down to the river for water. Study of dental defects has indicated that the bison were exposed to relatively little nutritional stress suggesting that grassland health during this period was good.⁶⁷

After its initial discovery by an earth moving crew in the River West subdivision, the Kaplan-Hoover site was excavated by Colorado State University's archaeological practicum program for several years in the late 1990s and early 2000s.⁶⁸ During this time community tours and public education were an important part of the site program. Although the location is visible from the Poudre River Trail, at the conclusion of excavations, the site was covered over. In 2003, the site was placed on the National Register and in 2004 on the Colorado Historic Registers.⁶⁹ The River West Homeowners Association with the assistance of the Colorado Open Lands conservation program and the Colorado Historic Preservation Office purchased the site and set it aside for open space and future research.⁷⁰

The Happy Hollow Rockshelter near Carr, was occupied from late Archaic times through the Middle Ceramic.⁷¹ Faunal material in order of frequency included elk, bison, pronghorn, deer, prairie dog, rabbit, and pack rat. Late occupations at this site are Upper Republican dating to around AD 1200.⁷²

The Webster Feedlot burial located on Lone Tree Creek east of Greeley contained a single individual thought to be female between the ages of 20 and 30 years at death.⁷³ The bones were dated to roughly AD 0, placing the individual at the end of the Archaic Stage or the beginning of the Ceramic Stage.

Late Prehistoric Sites

Several sites near the Happy Hollow rockshelter at Agate Bluff--the Agate Bluff, Porcupine Cave, Fire Cave, and Woodland Cave--were occupied during the Ceramic Stage. Like the Happy Hollow site, later occupations have been given an Upper Republican designation. Bison and elk dominated the faunal remains at these sites although pocket gopher, pronghorn, cottontail, coyote, mule deer, prairie dog, and bird were also found. A single kernel of corn was found at this site but researchers doubt that any corn was grown in the area due to the absence of bison scapula [SB] hoes and corn pollen.⁷⁴ The presence of Upper Republican camps so far west is an exception to the generalization that Upper Republican sites are not found within 80 km (50 miles) of the foothills.⁷⁵ It may not be a coincidence that these sites are found in a narrow remnant strip of the High Plains which follows the Wyoming/Colorado border almost as far east as the Larimer/Weld county line.⁷⁶

Roberts Ranch along the North Fork of the Cache la Poudre in extreme northern Larimer County contains a Ceramic Stage burial and a Ceramic Stage open camp/kill site.⁷⁷ The unlined burial pit contained a single female of at least 50 years of age in a flexed position on her right side with the head to the southeast.⁷⁸ Artifacts included two grinding slabs which had been placed on the body, at least 88 shell disk beads, 235 tubular beads, 36 juniper seed beads, and a fresh water clam shell pendant. Flora remains included goosefoot seeds, charred saltbrush seeds, and juniper seeds, all of which were recovered from below the lower abdominal area of the skeleton suggesting these items had been ingested before death. The burial dates to about AD 550. The buffalo jump kill site contains the remains of at least 18 bison.⁷⁹ Projectile points and ceramic shards suggest that this site was used during the Middle Ceramic period.

Near Livermore, the Lightning Hill open camp and Kinney Springs open camp demonstrate Ceramic period site reuse.⁸⁰ Small corner-notched, serrated-blade “Hogback” points similar to those found at Owl Canyon were also found at Kinney Springs. Kinney Springs also contained a smooth oval floor with an partially enclosing rough stone wall; this might be the remains of a habitation structure.

The T-W Diamond open architectural site is located in the foothills about 5 km (3 mi) north of Livermore.⁸¹ Containing 47 stone circles, the site is thought to be from a single occupation. Most of the circles were between 4.9-5.5 m in diameter (16-18 ft). The northwest side of some circles had higher concentrations of rock reflecting the prevailing wind direction. Ceramic sherds from a single vessel and over 30 projectile points and pieces were recovered. The vessel was tentatively identified as Shoshonean. The points were small triangular notched and unnotched forms. Charcoal from within the circles and from hearths yielded a variety of dates but researchers feel the site was used around AD 1100.

Protohistoric Sites

The Lykins Valley site, located on Box Elder Creek, is one of the few well-documented Protohistoric sites in the Platte River Basin.⁸² Trade items found in the upper level at the site included gunflint, glass beads, a clay pipe, and metal fragments. Fewer trade items were found in the lower level but this level did include a glass bead and two metal fragments; these may have been intrusions [SB] from the upper level. Bone materials from bison, deer, possibly pronghorn, and horse were found. There is some evidence of thermal alteration of quartzite tool material and of ceramic production. The upper level was dated between AD 1453-1955. A horse scapula was found in the lower level, dating its occupation to some time after the arrival of the horse in the area, about 1690. Although not a firm assignment, the upper level at the site may be a Comanche occupation and the lower level a Plains Apache occupation.

These archaeological sites were selected to demonstrate two aspects of human occupation in the Larimer and Weld county areas. First, human occupation has been of long and consistent duration and second, this occupation has focused around a hunting and gathering life way based on a consistent set of resources. Bison, elk, deer, and small mammals as well goosefoot plants have been consistently used over time as have the locally available quartzite stone materials. These resources as well as the ready availability of water and camping locations have drawn people to the Poudre valley for thousands of years.

Chapter 3- Protohistoric and Historic Stages

In this book two lines of evidence for the presence of native people in the Poudre valley--the archaeological record and historic documents--are examined. As seen in the previous chapter, the archaeological record can provide important insight into how long people have used the Poudre valley and how they used it, but it tells little about individuals and non-preserved cultural aspects like language and music. Unlike the archaeological record with its time depth of thousands of years, historic documents provide a time depth of about 400 years on the Plains and about 150 years in the Poudre valley. Within this time horizon, these documents provide a richness of knowledge about individuals and insight into the thoughts of individuals which the archaeological record does not. The historic record, however, has been primarily produced by Europeans and Euroamericans, and this record needs to be interpreted within that context.

During the Middle Ceramic stage, during the 1200s and 1300s, the Plains experienced a severe drought (Table 2). Some researchers speculate poor grazing conditions caused bison to abandon the drier parts of the Plains. Nomadic groups reliant upon bison are also thought to have abandoned the Plains during this time. In northeastern Colorado and along the Poudre River, the evidence for cultural continuity through the drought period is sketchy. The repopulation of the area beginning around AD 1500 and the concurrent availability of written records makes the early 1500s a convenient starting point to examine which cultural groups were in northeastern Colorado at the onset of the Protohistoric stage

Protohistoric Issues

By the Protohistoric stage with the availability of written records, there begins to be an ability to tie groups found through archaeology to modern tribes. Identifying “who was where when” is still difficult since the material remains of nomadic Historic Plains groups is by nature ephemeral [SB] and somewhat non-distinctive (Figure 7). Over the last 400 years the Colorado Plains have been used by a variety of groups at different and even overlapping times--especially historically. George Bent, a Cheyenne relating his experiences in the 1860s, describes many camps containing Cheyenne, Arapaho, and Sioux bands.⁸³

<Fig 7> Figure 7. Location of culture and ethnic groups

From an archaeological perspective, the camp remains of cooking debris, trash middens, tool discards, stone circles or teepee rings, cooking and heating hearths, and possibly corrals show little distinction among groups. Camp arrangement offers a potential way to assign tribal affiliation. Some groups arranged their teepees in a preferred ways, say linear camps, while other groups arranged their lodges in circles. Availability of suitable teepee locations in the camp area limited how well these ideal camps could be arranged. Specific groups also preferred certain types of sites over others, for example, in valley bottoms near water or in trees versus on a nearby open upland. These traits are hardly sufficient, however, to assign a given occupation site a particular tribal association in the absence of historic evidence. Another distinction between groups was their choice of teepee pole framework: Ute and Shoshone and other mountain-based groups used four main poles while Plains tribes used

three.⁸⁴ Three-pole frameworks may be more stable in high winds than four-poles because the cone is tilted.⁸⁵ A teepee based on four poles is shorter and wider than a three pole framework; from this an observer could identify a camp as belonging to a mountain or a plains group.

Table 8. Tribal distinctions.

Group	Main tipi pole count	Camp sites/ arrangements	Burial practices
	3	Hollows in winter	Scaffold Scaffold, cave, cliff ledge, crevice,
	4		teepee Shallow grave, cave, crevice
Kiowa	3		
Kiowa-	4		Burial
Apache	4		
Ute	4	Open areas,	Cave, crevice, shallow grave,
		doors toward east	scaffold

Sources: Carlson, *Plains Indians*, 60, 108; Crum, *People of the Red Earth*, 80; Foster and McCollough, “Plains Apache,” 932; Fowler, “Arapaho,” 848; Kavanagh, “Comanche,” 895; Moore et al., “Cheyenne,” 868, 872; Simmons, *The Ute Indians*, 23, 95.

Hoping to tease out more concrete camp distinctions by tribe, researchers analyzed over 350 photographs of northwestern Plains Indian camps taken as early as the 1850s up to the early 1900s.⁸⁶ The photographs were compared with rock art, paintings of the 1830s, and ledger art from the 1870s through the early 1900s hoping to discern distinctive patterns of camp arrangement, size, associated features (such as drying racks), setting, seasonal variation, and use of rocks or teepee pegs. Relatively few patterns and little variation between tribes were found. Most small camps were in upland settings away from water. Group camps (a single cluster of less than 30 teepees) occurred slightly more often in woodland areas. Winter camps were also frequently in woodlands. Most pictures showed the bottom of teepees being held in place with either pegs or logs rather than stones.

While archaeology is not particularly helpful with cultural identification, the historic record has its own set of issues. In particular, how a group is named, how that name is spelled, and to whom the name is applied can be very inconsistent. A group may have an exonym--a name by which they are identified by those outside their group--and an ethnonym--the name in their own language with which they identify themselves.⁸⁷ The terms Navajo (an exonym) and Diné (an ethnonym) provide an example. Among the plains tribes Arapaho (exonym) use the ethnonym Inunainas but have also been called Gens des Vaches (translated to Buffalo or Tattooed Indians), Blue Bead, or Caveninavish with many variations in spelling. The Arapaho are sometimes included with a sister tribe the Gros Ventre (ethnonym A'anis) who are also called the Big Bellies, Minateers of the Prairies, Fall, or Rapid Indians. Crow have been referred to as Absarokas and the Shoshone as Snake Indians. Along with significant variations in intended spelling, handwriting on early manuscripts can be very difficult or impossible to decipher correctly.

Along with confusion about specific group names, geographical references can also be inconsistent. In early records the term Black Hills referred to either the Black Hills of South Dakota as is the common usage today or to what are now called the Laramie Mountains of northern Colorado and southern Wyoming. References to Mexico could include all the area up to the Arkansas River, not just the land south of the Rio Grande. Going to Taos, New Mexico, was a trip to Mexico. Prior to Colorado's becoming a state, the phrase “going to the States” referred to returning to St. Louis, Missouri or some other point from which the areas east of the Mississippi could

Northern Colorado Cultural Groups

Although pre-dating the Protohistoric period proper, enough is known about the Upper Republican culture group that they make a reasonable starting point to begin a closer look at who occupied the Poudre valley and when. Between AD 1000 and 1400 Upper Republican groups from western Nebraska had temporary or semi-permanent bison hunting camps in eastern Colorado.⁸⁹ The type sites for the Upper Republican are found along the Republican River in south-central Nebraska. These sites are small household settlements having rectangular house structures. Subsistence practices focused on localized hunting and horticulture [SB].⁹⁰ Researchers have questioned why Upper Republican sites are found so far west of their primary geography. Were they satellite camps used by hunters to provide bison products for the Nebraska villages or were they independent groups who adopted some of the Upper Republican material culture through contact and trade? The hunting camp theory is weakened if one considers that good bison hunting should have been available much closer to the home area of the Upper Republicans than eastern Colorado. The idea of Upper Republican settlements is supported by the presence of ceramics made from local materials and the sheer volume of cultural debris created by long-term occupation.⁹¹ Drier conditions in the 1400s are thought to have forced the abandonment of these western-most Upper Republican camps.⁹² The ultimate destination of these people is unknown.

Dismal River Apache - Kiowa Apache

The Upper Republican groups were eventually replaced by a group known as Dismal River Apache. By at least AD 1525 and possibly as early as the 1300s, these Athapaskan-speakers from the boreal forests of southern Alaska and Canada had migrated into Colorado.⁹³ Archaeological sites are found along the Front Range and in the foothills to the west.⁹⁴ At sites along the Dismal River in Nebraska these people were village farmers and known as the Eastern Dismal River culture. In Colorado they were primarily nomadic bison hunters and known as the Western Dismal River culture. The Dismal River Apache are considered by some to be proto-Apache since their archaeological sites appear to be similar to but older than the historic Plains-Apache or Kiowa-Apache. An alternate view holds that the Kiowa-Apache developed on the northern Plains and occupied the Black Hills around 1750.⁹⁵ During Coronado's 1540 exploration of the Plains, he encountered the dog-nomad [SB], teepee dwelling Plains Apache which he referred to as Querechos.⁹⁶ Horticultural, village dwelling Eastern Dismal River Apache were variously called the Palomas, Padouca, or Cuarteles by the Spanish.

Early in the eighteenth century the Kiowa-Apache allied with the Kiowa and functioned more or less as an independent band associated with this tribe until 1875.⁹⁷ By the 1730s, the Kiowa-Apache and Kiowa, under pressure from the Comanche, split into two groups: one moving into South Dakota and the other into New Mexico.⁹⁸ By 1850 this northern group of Kiowa-Apache had been pushed south to the Red River of Texas by newcomers like the Cheyenne, Arapaho, and Sioux.⁹⁹ The southern migration of the 1800s took them through eastern Colorado. Unfortunately, little evidence exists from their passing.

Kiowa

There is some confusion about where the Kiowa originated and how they came to be on the central Plains in the 1700s. Linguistically the Kiowa language belongs to the same Tanoan language group spoken by Pueblo groups of New Mexico. The Spanish reported encountering the Kiowa on the southern Plains as early as 1732. The Kiowa had horses by 1725 and were seen with mounted warriors in 1748.¹⁰⁰ As mentioned, in the early 1700s they allied with the Kiowa-Apache and split into Northern and Southern bands around 1730. This split

and the tribes' later consolidation in Oklahoma and Texas have probably contributed to the confusion surrounding Kiowa origins.¹⁰¹ Native American ethnographers, Peter Nabokov and Lawrence Loendorf have compiled a large body of Kiowa oral tradition and language, as well as observations by Lewis and Clark, that indicate that at least part of the Kiowa tribe was near the Yellowstone Valley in 1805.¹⁰² Although it is somewhat speculative to summarize the Kiowa movements, it seems that they moved northward out of the plains of New Mexico during the early-eighteenth century. When they reached the Black Hills, they aligned with the Kiowa-Apache and within a few generations, but no earlier than about 1800, began a southern migration. Both the northern and southern migrations took them through eastern Colorado. Like the Kiowa-Apache, little evidence exists from their passing.

Comanche

The Comanche were an offshoot of the Eastern Shoshone of Wyoming who had moved onto the plains as dog-nomad bison hunters in the 1500s, pressuring the resident Kiowa-Apache from the north and west. The Comanche occupied the area between the forks of the Platte from 1650 to 1700.¹⁰³ Fully displacing the Kiowa and Kiowa-Apache in the early 1700s, the Comanche were able to control trade between the Spanish settlements and the Pueblo Indians in New Mexico and the Plains tribes.¹⁰⁴ By the 1820s, the Comanches in turn had shifted their range south of the Arkansas River in response to pressure from the Arapaho and Cheyenne.¹⁰⁵ This move south of the Arkansas may also have been motivated by better access to Spanish horse and cattle herds and trade routes with the Pueblo Indians. Around 1806, the Kiowa and the Comanche formed an alliance on the southern Plains, dividing the area so that the Kiowa centered along the Arkansas River and the Comanche occupied the Staked Plains or Llano Estacado of present-day west Texas.¹⁰⁶ By 1825 the Comanche and Kiowa were at war with the Arapaho and Cheyenne to the north and the Pawnee to the east for control of bison hunting areas along the Kansas and Republican rivers.¹⁰⁷ This conflict continued until an 1840 peace agreement at Bent's Fort on the Arkansas River near present day La Junta.¹⁰⁸

Arapaho

The early history of the Algonquian-speaking Arapaho is unclear, but it is commonly accepted that at one time they were a hunting and gathering group in northern Minnesota /southern Manitoba who migrated south and west.¹⁰⁹ Linguistic analysis suggests that they separated from other Algonquian-speaking groups about one thousand years ago. The Arapaho may have been situated on the northern plains as early as 1650 and then migrated south of the Missouri River by the 1790s. At that point the two-thirds of the tribe who went south began to be referred to as "Arapaho" and the third of the tribe who remained in the north became clearly distinguished as "Gros Ventre," also known as the Atsinsa. This is often considered the first tribal split. Prior to this split, the entire tribe was generally referred to as Gros Ventre rather than Arapaho as is the common usage today.¹¹⁰ Scholars differ on when the second split creating the familiar Northern and Southern Arapaho groups occurred. One view holds that the second split occurred with the construction of Bent's Fort on the Arkansas in the 1830s.¹¹¹ The separation was one of band preference for hunting areas on either the North Platte or the Arkansas rivers rather than a political schism. Both the Northern and Southern groups hunted along the South Platte and the area around Cherry Creek was considered a heartland. An alternative view holds that the second split occurred no later than 1816.¹¹² This timing, though, fails to explain why linguistic studies suggest the Gros Ventre split was much earlier than the Northern / Southern band split. A third view holds that the split developed as a result of the 1851 Laramie Treaty.¹¹³ The 1850s time frame may be more correct since even in the 1860s the bands of Chief Left Hand (Niwtot), a Southern Arapaho, and Chief Friday, a Northern Arapaho, were both known to use the Poudre River and Big Thompson River areas on a regular basis, and the 1851 treaty did not

distinguish between northern and southern group territories. Regardless of the actual timing of the second split, long term consequences for tribal unity resulted as the Northern bands were ultimately placed on a reservation in Wyoming while the Southern bands went to Oklahoma.

Cheyenne

The history of the Cheyenne is better documented. They, too, were an Algonquian-speaking, village-based, hunter-gatherer group who migrated out of the upper Mississippi River--southern Minnesota area beginning about 1680.¹¹⁴ In the 1700s they settled on the Sheyenne River in North Dakota becoming horticulturalists and bison hunters. During this period they acquired horses and relocated a second time to the Missouri River by 1780. By the early 1800s, the Cheyenne had abandoned village life and become horse-nomad buffalo hunters located several hundred miles south of the Black Hills. The Cheyenne and Arapaho are thought to have begun their alliance about this time. Lewis and Clark did not encounter either the Arapaho or the Cheyenne during their journey but noted that the Cheyenne were in the Black Hills in 1804. By the 1820s the Cheyenne and their allies the Arapaho were on the Colorado plains having pushed the Comanche to the south.

Pawnee

The Cheyenne and Arapaho, in turn were pressured from the east by Sioux and Pawnee bison hunters and from the west by Ute. Although Pawnee villages were centered on the Lower Loup River in Nebraska, there is some evidence that they hunted in northeastern Colorado during their twice yearly extended bison hunts.¹¹⁵ An encounter by the Arapaho with Pawnee hunters near Laporte in 1858 in violation of the 1840 Bent's Fort agreement suggests that the Pawnee at least on some occasions hunted as far west as the Cache la Poudre valley.¹¹⁶ The 1840 agreement between the Cheyenne and Arapaho allowed hunting by the Comanche and Kiowa in the Colorado areas east of the Rockies but specifically excluded the Pawnee.

Sioux

Like the Cheyenne, the Sioux migrated from the east (southern Wisconsin - Minnesota - Iowa region) under pressure from the Chippewa and Cree to their east.¹¹⁷ By the early 1800s, the Teton Sioux claimed the Black Hills region having pushed out the occupying Crow and Kiowa. That they extended their hunting range even further south by the mid 1850s and 1860s is shown in George Bent's mention of Sioux bands of Oglala and Brule camping with his Cheyenne band at various locations on the Colorado Plains.¹¹⁸ In response to Sioux pressure in the Black Hills, the Kiowa and their allies the Kiowa-Apache moved south, eventually south of the Arkansas River. The Crow apparently consolidated westward to their more traditional hunting areas between the Yellowstone River in Montana and the Sweetwater River in Wyoming.¹¹⁹

Ute

West of the Rocky Mountains, Ute were present in the Four Corners area by 1300 AD and had spread north and east through the mountains within the next two hundred years.¹²⁰ Based on linguistic analysis, the Shoshonean branch of Uto-Aztecan speakers spread from California's Death Valley region across the Great Basin starting around AD 1000. Eventually the Shoshones themselves split into three divisions. The modern Shoshone belong to the Mono-Bannock division and Ute belong to Ute-Chemehuevis division. Prior to 1880, the territory occupied by Eastern Ute bands such as the Parusanuch and Yampa extended from the White and Yampa River valleys of western Colorado to North and Middle Park in central Colorado including the region of modern day Rocky Mountain National Park.¹²¹ In Larimer county, Ute ceramics have been found near Red Feather Lakes northeast of Fort Collins and near Drake on the Big Thompson River.¹²²

With the acquisition of the horse in 1640, the mountain-based Ute were able to engage in mass bison hunting on the Plains.¹²³ At this time the Ute adopted hide teepees as well. It is likely that Ute had been actively hunting on the Plains for several generations when the Arapaho and Cheyenne arrived in northern Colorado. Arapaho and Ute conflicts over hunting and camping areas on both the plains and in the mountains continued until at least 1863 as far east as Fort Lyons.¹²⁴ The site of present day Denver was a favorite camp site of both Ute and Arapaho.¹²⁵ During a geographic expedition to measure the elevation of Colorado's highest mountains in the late 1860s, Harvard professor William Brewer reported regular observation of large numbers of Ute in Denver who were only east of the mountains because of their friendship with the whites and the fact that the Plains Indians (Kiowa, Cheyenne) were kept away from town by the whites.¹²⁶ The Treaty of 1868 created a consolidated Ute Reservation on the western slope from the 107th meridian to the Utah border.¹²⁷ The reservation excluded the traditional Ute use areas of North Park, Middle Park, and South Park although Ute continued to use these areas for some time. In 1871 a special agency was established in Denver to distribute annuities since so many Ute were in the area.

Shoshone

The Shoshone, too, may have entered northeastern Colorado although evidence is unclear.¹²⁸ Ceramics from the Echo Cave archaeological site near the Big Thompson River, and from Roberts Buffalo Jump and T-W Diamond sites in northeastern Larimer county may be attributable to the Intermountain Tradition. This proto-Shoshonean culture originated about AD 1000 becoming historical Shoshone by AD 1760.¹²⁹ The Shoshone were early acquirers of the horse and dominated the northern Plains in the 1740s until other tribes obtained reliable supplies of guns at which point they were driven back into the central Rocky Mountains.¹³⁰

Euroamerican

Euroamericans began to enter the Plains after the 1803 Louisiana Purchase. Initially they were government sponsored explorers and private fur-trappers/traders. Early American exploration did not enter the Cache la Poudre area. Lewis and Clark passed far to the north in the early 1800s just as Zebulon Pike explored to the south. Not until Stephen Long's 1820 expedition followed the South Platte and noted the presence of an unnamed tributary corresponding to the modern Poudre was the river's existence documented.¹³¹ William Ashley, a fur trapper, camped on and followed the Poudre over the mountains in 1824.¹³² In 1843, John Fremont, on an expedition to gather military and scientific information, may have followed Ashley's route up the Cache la Poudre or may have instead followed the North Fork of the Poudre as a route to the Laramie Plains; his journey records about his route are inconclusive.¹³³ Notable mountain men Kit Carson and Thomas Fitzpatrick accompanied Fremont. Carson trapped in the west side of today's Rocky Mountain National Park, and it is possible that he returned to trap along the Poudre in 1849-1850.¹³⁴ The last important expedition to pass through the Poudre area was Ferdinand Vandiveer (F.V.) Hayden's 1869 Geological Survey of the Territories for the U.S. Department of the Interior.¹³⁵ Among other things, Hayden's sketch artist Elliott provided some of the earliest known formal sketches of the Poudre area (Figure 4). Hayden's reports focused on more than just geology, stressing the scenic beauty and wild game possibilities for tourists, the exploitable resource base of precious minerals, coal, and forests for industrialists, and the potential for settlement for developers.

The first specific reference to the Cache la Poudre came from explorer Stephen Long on July 3rd, 1820:

"In the course of the day, we passed the mouths of three large creeks, heading in the mountains and entering the Platte from the northwest. One of these nearly opposite to which we encamped, is Potera's Creek, from a Frenchman of that name, who is said to have been bewildered upon it, wandering about for twenty days, almost without food. He was then found by a band of Kiawas [sic], who frequent this part of the country, and restored to his companions, a party of hunters, at that time encamped on the Arkansas."¹³⁶ On July 18, 1835, Captain Henry Dodge's Expedition of Dragoons passed the mouth of the "Cache la Poudre, a large stream, emptying into the Platte on the opposite side, with timber on its banks. The buffalo are numerous."¹³⁷ The diary of Captain Ford, who served under Dodge, names it the "Powder River" which they passed on the opposite side of the "Platt."¹³⁸

The earliest Europeans to linger along the Cache la Poudre were probably fur trappers such as Ashley, but they have left few records. Rocky Mountain National Park archaeologist William Butler notes that fur trapping in Rocky Mountain National Park must have been fairly good as indicated by the establishment of trading posts due east of the Park on the plains: Fort St. Vrain, Fort Vasquez, Fort Jackson, and Fort Lupton, in order from north to south.¹³⁹ None of these posts were located at the confluence of the Poudre and South Platte Rivers although Fort St. Vrain was close to the confluence of St. Vrain Creek, the Big Thompson River, and the South Platte. Although the Poudre was trapped, it was probably not a key fur source.¹⁴⁰

The fur trapper era came to a close by 1850, and by then many of the fur trading posts were closed or supplanted by trading posts intended to service the Native American trade in buffalo hides and dried buffalo tongue and meat. Bent's Fort built on the Arkansas in 1833 and Fort Laramie on the North Platte were large trading centers by the 1850s with the smaller Fort St. Vrain the nearest secondary trading center to the Cache la Poudre. To offer perspective on the influence of these trade centers, the trading empire of Bent, St. Vrain, and Company spanned nine western states from the pan-handle of Texas to southern Wyoming and from eastern Utah to western Kansas.¹⁴¹ At its peak, Bent's Fort had a hundred employees including traders, hunters, herders, teamsters, and laborers.¹⁴²

During the 1850s a federal government policy of westward expansion to stimulate agriculture, mining, and trade combined with several specific actions / events to draw Euroamericans to the Poudre valley in a more sustained way:

- ⊙ the Laramie Treaty of 1851 established tribal boundaries, gave the United States the right to establish roads--specifically along the Platte River--and military posts in Indian country, and negotiated peace between warring Plains tribes
- ⊙ the Kansas-Nebraska Act of 1854 developed a legal mechanism for land title
- ⊙ gold was discovered near Denver in 1858
- ⊙ Colona (near modern day Laporte) was established by Antoine Janis and other French-Canadians in 1859¹⁴³

These events essentially ended the Protohistoric stage along the Cache la Poudre River. Native American occupancy of the area ended informally in 1868 when Arapaho Chief Friday removed his band to Wyoming and formally in 1878 with the mandated removal of all Native Americans to designated reservations. Except for the Southern Ute Reservation located in southwestern Colorado all reservations were located outside of Colorado.

Even though the group histories provided above suggest what groups were in northern Colorado and when, it is less clear what groups actually called the Poudre River part of their territory. The archaeological record remains inconclusive as to which historic groups used the Poudre. Historic evidence starts only with the Cheyenne and Arapaho presence, and even that history is problematic.

There is clear historic evidence of the Arapaho residing in the Cache la Poudre valley (see Written Accounts, below) but the Cheyenne occupancy is less tangible. When Bent's Fort on the Arkansas was built in 1833, the Southern Arapaho were noted as ranging with the Cheyenne but keeping nearer to the mountains.¹⁴⁴ George Bent, a Cheyenne, does not mention any locations west of Greeley in his narrative or show any of this area in his hand drawn maps.¹⁴⁵ Similarly, Cheyenne scholar G. B. Grinnell's 1906 list of Cheyenne stream names does not include the Poudre, the Big Thompson, or the St. Vrain but does include Plains rivers and their tributaries such as the Platte, Republican, and Smoky Hill as well as rivers in Wyoming such as the Tongue and Powder.¹⁴⁶ This may suggest that the Arapaho core area in Colorado was situated more toward the foothill-plains while the Cheyenne core area was slightly further east on the plains.

Geographic references to the two groups vary considerably. Stephen Long was an early explorer whose 1820 exploration passed the mouth of the Poudre. Long describes encountering Pawnee on the Platte and then does not mention any native encounters in his description of travels along the Front Range until reaching the Arkansas River a month later. He does describe the location of a rendezvous on Vermillion Creek (now called Cherry) near Denver that occurred several years before his visit.¹⁴⁷ The encampment included "Kiawas (Kiowa), Arraphaoes (Arapaho), and Kaskaiaes or Bad-hearts" along with French hunters and the "trading Shiennes" (Cheyenne). The Cheyenne had procured goods from the British on the Missouri and were eager to trade for horses. Long reports that the Kiowa and Arapaho wandered the plains along the Arkansas and Red Rivers and that the Cheyennes had difficulty raising horses since their country was "cold and barren."¹⁴⁸ This would place the Cheyenne somewhere to the north of the usual range of the Arapaho and Kiowa in the 1820s. Fifteen years later in 1835, Colonel Henry Dodge deliberately sought out native groups to encourage peace between them and to ascertain their locations. The map prepared by Enoch Steen to accompany Dodge's report to Congress showed the "Gros Ventre of the Prairie" between the Arkansas and South Platte and designated the area to the south and east of the South Platte (modern Weld, Adams and Morgan counties) as a "Snake and Crow hunting ground." Chiennes (Cheyenne) were situated directly north of the Arkansas River and Comanche directly south with the Kioway (Kiowa) even further south along the road between Santa Fe and St. Louis.¹⁴⁹ Dodge's Gros Ventre of the Prairie were probably Arapaho, but according to Dodge they are north of the Cheyenne rather than south as Long reported.

Even recent maps show similar inconsistency of Cheyenne and Arapaho locations. A map published in 2002 shows the Cheyenne as occupying northern Wyoming and far eastern Colorado from 1820 to 1846 with the Arapaho situated in southern Wyoming between the Cheyenne territories.¹⁵⁰ The 2001 Smithsonian Institution's *Handbook of North American Indians* Plains volumes show the Cheyenne in eastern Wyoming with the Arapaho occupying eastern Colorado and the adjacent areas of Kansas and Nebraska reflecting a mid-1800s date prior to the tribal split.¹⁵¹ Colorado archaeologist Cassells in *The Archaeology of Colorado* shows the Arapaho and Cheyenne jointly occupying Colorado from the foothills eastward between 1830 and 1870.¹⁵² Western historian

Elliott West places the Northern Cheyenne and Arapaho along the Wyoming-Colorado border between the forks of the Platte and the Southern groups to the south along the Arkansas and southeast of Denver between 1837 and 1869.¹⁵³

Why are all these geographic references so inconsistent? These differences of location may not indicate differences of understanding of native land use but instead reflect a lack of appreciation for the highly mobile and fragmented yet fluid nature of tribes and bands on the Plains. In fact, the references and descriptions may not even do justice to the territories actually used by nomadic groups. For example, the Arapaho and Cheyenne have been recorded as meeting for an annual intertribal encampment in southern Idaho, an area far from any usually associated with these groups.¹⁵⁴ Their enemies the Shoshone were also in attendance, indicating that hostilities could be suspended in the interests of trade.

Ethnohistorian Theodore Binnema makes an important point about native groups on the northwest Plains: groups there were generally composed of fluid extended family bands and an individual's membership could easily be changed to a different band either temporarily or permanently.¹⁵⁵ Further interethnic alliances, both marriage and social/political, were not uncommon so combined encampments were a norm rather than exception. Treatment of ethnic groups as isolated entities with fixed "friend-foe" relationships and clearly defined territories is a historical convenience rather than a physical reality. Little or no data exist to indicate conditions were any different on the central Plains.

Donna Roper, central Plains scholar, probes whether the concept of "tribal groups" is also a Euroamerican historical convenience, pointing out that the Pawnee had no concept of "Pawnee-speakers" as a single group.¹⁵⁶ In a similar vein, the Western Sioux word "Dakota" means "alliance of friends" rather than a tribal entity.¹⁵⁷ The Dakota were composed of seven loosely affiliated bands including the Teton, a nomadic hunter group. Although the bands spoke different dialects, intermarriage and close association was common.¹⁵⁸ Note that this is not a question of whether there exists a "Pawnee" or an "Sioux" culture, per se, but rather whether the people who shared those cultures saw themselves as part of a larger entity known as a tribe prior to Euroamerican influence. The band focus was more likely the norm among all Plains groups.

Maps were not always faithful to the physical geography either. They could be very accurate along the route of travel but be pure fabrication in unexplored areas. It was not until 1857 that the vast Great Basin was correctly illustrated.¹⁵⁹ It is unclear when the Cache la Poudre first appears on maps of the west and when it is correctly labeled. On an 1802 map by M. Perrin du Lac, the Poudre may be shown as a unlabeled stream heading to the west as the course of the South Platte turns due south (Figure 8a). The confluence of the unnamed stream and the Platte is shown at about 39° N longitude and 104.5 ° W latitude. All of du Lac's latitudes seem to be about a degree too small, so this error in location may be systematic. In an 1805 map by Nicholas King made with notes from William Clark, the mouth of a stream that could be the Poudre appears just about where expected-- where the South Platte starts heading south (Figure 8b). The rest of the stream is clearly incorrect, and this whole segment of the South Platte falls far to the west of its true location. Stephen Long's map of the 1820 expedition shows several streams that could be the Poudre and, like King, detail past the mouth is lacking with all the streams come straight out of the mountains (Figure 8c). The map prepared by Lieutenant Enoch Steen for Dodge's 1835 expedition shows a Powder River entering the South Platte near present day Julesburg (probably what we call Lodgepole Creek today) and labels Otter Creek between what could be the Cache la Poudre and the Powder but

leaves the Poudre unlabeled (Figure 8d) . Fremont's 1845 map is the first one to clearly show the Poudre and to really get the detail right heading up stream (Figure 8e). One has to wonder why the U. S. Bureau of the Corps of Topographic Engineers--of which Fremont was a part--lost the Poudre in its 1850 map (Figure 8f).

<Fig 8a > Figure 8a (top) and b (bottom). Maps from 1802 (du Lac) and 1805 (King)

<Fig 8c> Figure 8c and d. Maps from 1822 (Long), 1835 (Dodge - Steen)

<Fig 8e> Figure 8e and f. Maps from 1845 (Fremont) and 1850 (U. S. Topo Engineers)

Little wonder in the face of ethnographic and cartographic accuracy issues that map makers had difficulty. Map makers need to be fairly astute to recognize these assumptions about bands and tribes, group use areas, and western land forms to address these issues appropriately. Early map makers in particular were cartographers rather than trained observers. They may not have realized that their maps rather than being snapshots in time would be the only record of the time and potentially take on larger meaning than intended.

Chapter 4 - Historic Records

Broadly speaking, historic records fall into two general categories: written materials and images.

Since none of the native peoples along the Poudre had a written language, written records do not appear until Euroamericans have contact with the area. Written materials from periods before 1800 are most often the records of Spanish government officials (including military) or religious personnel. Since the Spanish presence only reached southern Colorado, few if any of these materials include reference to the South Platte or Cache la Poudre. Some records exist also from the French fur trading posts in Canada, but few of these contain references any further south than the Upper Missouri River.¹⁶⁰ The fur trappers who were near the Poudre in the early 1800s left few if any written records.

These reasons and others help explain why ethnohistory in the Cache la Poudre area has been poorly documented:

- ⊙ The Cache la Poudre was missed by many of the early exploration expeditions: Lewis and Clark and Pike did not come close to the area, and Long's, Ashley's, Dodge's, and later Fremont's contacts were short and unremarkable.
- ⊙ The time period between initial Euroamerican settlement on the Cache la Poudre and Native American removal was fairly short, about 40 years, and occurred simultaneously with a period of considerable Native/Euroamerican discord. After removal, no Native Americans remained in the area to provide on-going evidence of their past presence.
- ⊙ With Euroamerican settlements, disruption of native lifeways was almost immediate. Ansel Watrous who compiled an extensive history of Larimer County in the early 1910s notes that by 1861 all the bottom land along the Poudre had been settled by Euroamericans.¹⁶¹ Although this is likely an exaggeration in modern terms, the presence of even a few settlers who claimed the best locations--those with good water access, good wood supplies, and good forage--disturbed traditional Native American usage and most certainly disrupted bison movements.
- ⊙ Early Euroamericans had little or no sense of "history in the making." By the time Norman Fry arrived in Fort Collins in 1889, stories about Colona founder Antoine Janis, the Army, and Indians had become stories of the "old days" to tell a green newcomer.¹⁶²
- ⊙ The native groups who used the Cache la Poudre at the time of European arrival were themselves relative newcomers to the area, arriving within the previous 50 years. In addition they were highly nomadic, using the area as part of a seasonal/yearly round and moving on as conditions warranted.¹⁶³
- ⊙ Although Colona (Laporte) was established in the late 1850s and Camp Collins in 1862, no significant historical events took place in either location. Furthermore, no Indian attacks, battles, or treaty meetings occurred along the Poudre. As a tributary to the South Platte, the Poudre has presumably been tacitly included in descriptions such as "all the area between the forks of the Platte." Not until the Fort Collins/Greeley water disputes of the 1870s did the Poudre River gain notoriety.
- ⊙ Subsequent to the fur trapper/trader era, interactions between Euroamericans and native people were based on fear and unease on the part of the Euroamericans. Watrous' *A History of Larimer County* contains many

- accounts of early settlers who personally had no Indian trouble but were always on the alert for it.¹⁶⁴ Early resident C. A. Duncan offers similar commentary.¹⁶⁵ These attitudes surely inhibited cultural exchange.
- ⊙ Poudre Canyon did not provide a ready access route over the mountains and so did not become part of any early overland road systems like the Overland Trail, the Mormon Trail, the California Trail, the Oregon Trail, or the Pony Express route. The Rocky Mountains acted as a semi-permeable barrier to travel. The Poudre canyon was passed by in favor of easier railroad routes like South Pass in Wyoming in the 1860s.
 - ⊙ As noted earlier, most of the native migration paths were oriented along north-south routes in Colorado rather than east-west as was the early Euroamerican travel just mentioned.¹⁶⁶ Furthermore, native groups often followed general routes rather than well-defined trails, so their movements were not readily apparent to or observed by Euroamericans.
 - ⊙ Within 20 years of the publication of local newspapers which might have reported Euroamerican-Native American interactions, the native populations were gone. Although the *Denver Rocky Mountain News* began publication in early 1859, the earliest papers in the Poudre valley did not appear until 1869 with the *Evans Express* which folded the following year, the *Greeley Tribune* in November 1870 followed by the *Fort Collins Express* in April 1873.¹⁶⁷
 - ⊙ Literate early settlers were often focused on the necessities of daily life. The dominant entries in Amelia Buss' 1866-1867 diary have to do with immediate issues of laundry and food preparation rather than recording external events.¹⁶⁸ Easily twenty years and often more passed before oral histories were collected from these early arrivals, and by that time "facts" were lore rather than strictly accurate recollections of past events.
 - ⊙ Most tribal ethnohistories were not collected until about 1900, 25 years into the reservation period, when shared memories of life in northeastern Colorado were fading. In addition, tribes like the Arapaho and Cheyenne were divided into Northern and Southern units with the advent of the fur trading posts, further diluting their shared memories.
 - ⊙ Finally, the tribes themselves were experiencing significant cultural change due to the acquisition of the horse, guns, changing trading patterns, loss of population (particularly tribal elders) to disease, loss of "traditional" hunting areas, and intertribal and Euroamerican conflict. It might be well to ask what opportunity existed to create historical records and if the opportunity arose, who would have written it. Only Friday of the Arapaho and George Bent of the Cheyenne are known to have been able to write.

Written references to the Poudre River and nearby native groups are first produced by the early U. S. government expeditions. Through the 1830s and 1840s, trading post records, missionary reports like that of Father De Smet, and travel diaries like that of Frederick Wislizenus and Oregon Trail emigrants were compiled although not always published. Wislizenus' travel diary was an exception in being published within a year upon his return from the West.¹⁶⁹ Public records of land ownership and transfer, criminal proceedings, and tax collection are recorded for organized settlements in the 1860s, but few of these have survived intact. Settler diaries like that of Amelia Buss and early newspapers also appear at this time. Local military records and soldier journals such as the day records for Camp and Fort Collins as well as government documents concerning Indian affairs provide a valuable record from the 1860s and 1870s.

By the late 1880s, the first collective attempts at chronicling the early histories of Weld and Larimer counties are produced. The *Fort Collins Courier Express* published periodic stories of the "early times" during the 1880s. Early settler's records and recollections are collected in Watrous' 1911 *A History of Larimer County* and

Geffs' 1938 *Under Ten Flags* for Weld county.¹⁷⁰ Watrous' two volume book was published on a subscription basis with purchasers providing their own biographic sketch material; sources for other material are less clear. Due to its sources, Watrous' material is likely biased, but it is one of the few records compiled during the lifetimes of the early Euroamerican settlers of the Poudre Valley. Needless to say, it is unlikely there are two independent sources as per the scholarly research norm for many if any of the historical events recorded in the Poudre valley.

Images

Image records, too, had to await Euroamerican contact. Early U. S. government expeditions were almost always accompanied by a sketch artist or cartographer. For example, Titian Peale and Samuel Seymour accompanied the Long expedition in 1820 and Charles Pruess accompanied Fremont in 1842 and again in 1843.¹⁷¹ These artists and cartographers were responsible for sketching the natural setting or for creating a map of the geographic features encountered on the trip. By the 1830s, the Army Corps of Topographic Engineers was trained to observe detail though instruction in the natural sciences and to make topographic sketches.¹⁷² Exotic animals like buffalo and plant life were carefully documented (Figure 9). The sketches produced by these artists were a product of their time and did not necessarily provide a "faithful reproduction of the scene" instead emphasizing the "quality" of the scene.¹⁷³ Quality seems to mean "what makes the scene different from the eastern United States" since the scenes often emphasize the open, arid, sparsely vegetated nature of the west. From this early period, sketches produced by Henry W. Elliott with the Hayden expedition of 1869 of the Poudre River and the hogbacks are especially important early records (Figure 4a-d). By this time Laporte had been established for several years so these sketches do not provide a view of the pre-Euroamerican valley. They do illustrate the liberty taken by artists: Figure 4a shows a dog (?) which looks strangely like a lion and shows a surprisingly wide and tranquil Poudre River. The number of trees along the river also seems high given the oral reports mentioned earlier.

<Fig 9> Figure 9. Sketches by Titian R. Peale

In 1839 the daguerreotype process, the earliest form of photography, was introduced. Although studio portraiture quickly caught on, the first field use of daguerreotypes did not come until the Mexican War in 1846.¹⁷⁴ At the time the daguerreotypes themselves were not seen as particularly valuable since the images were small and had to be painstakingly redrawn to create lithography plates for publication. As a result, few early daguerreotypes have survived. Today, access to the originals would be particularly useful since it was not uncommon for the lithographer to modify the scene to improve its commercial interest. Daguerreotypes were highly accurate but often failed to live up to the imagined appearance of the scene for commercial purposes.¹⁷⁵ War scenes were frequently enhanced during the lithography process to increase the sense of action and engagement.

Fremont included daguerreotype type equipment on his 1842 expedition but only took 25 polished plates thus severely limiting how many pictures he could take.¹⁷⁶ He took equipment again on his 1843-1844 expedition, but the only published illustrations of the expeditions are based on Pruess's sketches. Given the complex nature of the process and the lack of any published results, it can be assumed that Fremont failed to make any daguerreotypes in the field on either expedition. For his 1853 California expedition, Fremont hired a professional daguerreotypist, Solomon Nunes Carvalho, and although Carvalho took many successful images from which lithographs were produced, none of the original plates are known to have survived an 1881 fire.¹⁷⁷

In the late 1850s, wet-plate negative photography replaced the daguerreotype for the primary reason that many paper prints could be made directly from the negative and thus the negative had commercial value for the photographer even though using the process in the field was more difficult.¹⁷⁸ F. V. Hayden included field photographs in his 1863 ethnological report of the Missouri Valley Indians taken in 1859-1860 by James D. Hutton.¹⁷⁹ This was the first widespread publication of native groupings. Alfred Bierstadt joined the Lander expedition of 1859 at his own expense and photographed the Rockies as an independent artist marking the beginnings of commercial western photography.¹⁸⁰ A glance through photo history books like that by Terry W. Mangan's *Colorado on Glass* shows that as early as 1859, studio portraiture was an important commercial business.¹⁸¹ In the 1860s, in spite of the complexity of field photography, photographers were in the field taking pictures of the gold fields and early Colorado settlements, presumably driven by commercial motivation.

In the 1870s William Henry Jackson accompanied F. V. Hayden on his Yellowstone expedition and went on to become a leading photographer of western landscapes and people, notably of Colorado.¹⁸² Photographs quickly became an important tool for documenting the West. Western historian William Goetzmann says of Hayden:

In appointing Jackson to his survey, Hayden was not just attempting to use the dramatic new medium to publicize his work ... Hayden was interested in using whatever artistic means he could to convey the complex reality of the West. Elliott's drawings had been excellent but nothing could match the new measure of accuracy afforded by the camera. ... [Jackson's] views of exposed rock strata aided the geologist, and his photography of barren, jagged landscapes gave planners a new and more realistic view of the problems confronting the Western settler ... [H]is portraits of surviving Indians were among the few means available for conveying a picture of the aborigines as they really were.¹⁸³

Like Jackson's work, early photographs and daguerreotypes often included native people although they were seldom identified by name. Unfortunately, few images of native people or landscapes in the Poudre valley have been found (Figure 10).

<Fig 10> Figure 10. Early photograph taken 1867-1868 near the Cache la Poudre

Written Accounts

Written historical records of Native Americans along the Cache la Poudre begin in the 1850s. Prior to the 1850s the Poudre Valley was a favorite hunting ground of the Arapaho, where they frequently camped near Laporte and on Box Elder Creek.¹⁸⁴ Up to this time the Arapaho held trade fairs with the Spanish at the site of present day Denver, also a favored camping location.¹⁸⁵ In 1858 Antoine Janis, Eldridge Gerry, and Nicholas Janis, were granted all the land north of the Poudre River between the mountains and Box Elder Creek by Bold or Bald Wolf.¹⁸⁶ At the time, 150 Arapaho lodges were encamped west of present day Laporte. The townsite of Colona was established at a crossing of the Poudre near this location.

Chief Friday

Friday, an Arapaho, is the native individual most associated with the Cache la Poudre Valley (Figure 11). In May 1831, an Euroamerican fur trapper supply train on the Cimarron Trail found an seemingly lost nine year-old boy.¹⁸⁷ Thomas Fitzpatrick, then head of the Rocky Mountain Fur Company, fostered the boy, naming him Friday for the day of the week on which he was found. Friday was educated in St. Louis, Missouri, becoming

proficient in English. By 1843 he had returned to live with the Arapaho. In 1851, Friday participated in the Horse Creek council near Fort Laramie and was selected to go to Washington D.C. By 1858, Friday had become a minor chief; at times he had a band as large as 250 men and considered the Poudre and Big Thompson preferred hunting and camping areas. On a ridge near the Larimer County canal head gate in 1858, Friday's band had a battle with Pawnee hunters who were in the area in violation of the 1840 Treaty.¹⁸⁸

<Fig 11> Figure 11. Engraving of Chief Friday

Marshall Cook, a settler who lived near Auraria and who had frequent contact with Arapaho told the following story about Friday.¹⁸⁹ Sometime in 1858 or 1859, the owners of Fort St. Vrain left for trading trip to St. Louis. A band of Arapaho, including Friday, learned that the native wife of one of the traders who had remained at the fort was a member of an enemy tribe who had previously inflicted wrongs on the Arapaho. The Arapaho band killed the woman and her child in revenge. When the fort owners returned, they staged an elk feast to entice the disarmed Arapaho into the fort and then killed them in retaliation. A few Arapaho escaped including Friday. If true, this episode may explain why Friday's band was significantly reduced in size by 1860. The *Fort Collins Courier* reported that Friday's band with only 40-50 members was in the Poudre Valley in 1860 when Judge A. F. Howes arrived.¹⁹⁰

Geological surveyor F.V. Hayden encountered Friday in Wyoming in 1859 or 1860, but by 1861 Friday's band was back on the Cache la Poudre, occasionally using the Big Thompson Valley as well.¹⁹¹ In July of 1862, the band was camped on the north side of the Poudre river opposite the F.W. Sherwood ranch.¹⁹² In June 1863, Friday and another band of Arapaho under Many Whips were seen in the Poudre valley; by August, Friday was near Fort Laramie to sign a treaty agreement along with Northern Arapaho chiefs Black Bear and Roman Nose.¹⁹³ This agreement stipulated that the signers would abide by any treaty made by their people, which given that their people (the Northern Arapaho) had made no treaties up to that point, made the agreement mute.

During the 1860s, Friday was caught up in the escalating tensions between Native Americans and Euroamericans. Local historian John Gray offers insight into this escalation.¹⁹⁴ At the 1851 Fort Laramie treaty talks, the Arapaho and Cheyenne were granted all the land between the North Fork of the Platte and the Arkansas River; however, the 1860 and the revised 1861 Treaty of Fort Wise reduced this area to a reservation between the Arkansas River and Sand Creek.¹⁹⁵ The 1860/1861 treaty was signed by Southern Arapaho and Cheyenne leaders such as Left Hand and Black Kettle but not by Northern Arapaho leaders. Because of this omission, bands under Northern Arapaho leaders Friday, Chief Owl (or possibly Little Owl), and Many Whips remained in northern Colorado. Friday advocated for a reservation along the Cache la Poudre which would have extended from the mouth of the Poudre to Box Elder Creek and north to Crow Creek, an area similar to that given to Colona founder Antoine Janis in 1858.¹⁹⁶

From a Euroamerican perspective, the prime real estate in Colorado Territory at this time was west and north of the South Platte River in Northern Arapaho territory. This included Denver, the gold fields, and the Cache la Poudre valley and the proposed Northern Arapaho reservation.¹⁹⁷ That this ownership was not clearly understood--or whether it was understood but ignored with Euroamerican revisionism--is expressed by historian Watrous' statement that "[a]fter the title to Indian lands passed to the United States, settlers came in faster and at the close of 1861, nearly all the bottom land along the river from Laporte down to where Greeley now stands had

been taken up.”¹⁹⁸ In theory at least, any non-Indian on settling on these lands was subject to removal and fine by the military. Friday remained on the Poudre in order to continue to press his reservation proposal.

From the Northern Arapaho perspective, they had legitimate claim to areas north of Sand Creek since they had not ceded them through treaties. The territorial government, however, choose to ignore this claim and continued to allow and encourage Euroamerican settlement.¹⁹⁹ Indian Agent Simeon Whiteley found the proposed Northern Arapaho reservation unacceptable because it bordered the Overland Stage route and contained sixteen squatter families.²⁰⁰ That these squatters were illegally occupying the area does not seem to have factored into Whiteley’s rejection of the proposed reservation. Territorial Governor John Evans was highly motivated to create a situation which would eliminate Indian title to these lands.²⁰¹ One way he sought to do this was by creating the illusion of a massive Indian threat; this allowed him to bring military forces to bear and lead directly to the Sand Creek Massacre in November 1864 and to subsequent Cheyenne reprisals which eventually included the Arapaho and Sioux.

In response to threatened attacks by hostile groups in June 1864, “friendly” Cheyenne and Arapaho bands like Friday’s were ordered by Governor Evans to Camp Collins to protect them from government actions against hostile groups.²⁰² Friday’s and White Wolf’s bands (170 people) stayed near the camp as requested although their hunting area was limited and the camp had few rations to spare. The Arapaho had a hungry season.²⁰³

Even though these were tense times, Friday reportedly made friends with the stage agents at the Latham Overland Stage station just east of Greeley, having Sunday dinner and entertaining them with childhood stories.²⁰⁴ During 1865, Friday’s band was seen camping at various locations in the Poudre Valley including near the mouth of Dry Creek, an unidentified place “south of Fort Collins,” on the Coy place, and at the F.W. Sherwood ranch.²⁰⁵ Arapaho women and their children were often seen hanging around Joseph Mason’s sutler store at Fort Collins.²⁰⁶ The store located in the Old Grout building was at the site that later became Stover’s Drug at Linden and Jefferson streets in Fort Collins.

During the spring of 1865 Black Bear’s Arapaho band also camped near Fort Collins, and by summer Big Rib’s group of Sioux had also moved to the vicinity.²⁰⁷ Each of these groups, totaling 154 individuals, received rations from the military at Fort Collins. In the early winter of 1866 Spotted Tail’s Cheyenne band camped on the opposite side of the river from the Sherwood place and Friday’s camp.²⁰⁸ The Cheyenne, then at war with the whites, taunted Friday about not having any warriors brave enough to fight since Friday had maintained a friendly relationship with the whites. Friday’s son Jake killed Spotted Tail and left the area. The following June, an escaped Crow captive who had been with Jake’s party reported that the Cheyenne had eventually killed Jake and his wives in retribution.²⁰⁹

Mrs. Elizabeth Stratton, the first teacher at a Fort Collins public school which was housed in a former officer’s quarters building on Fort Collins, remembered having Chief Friday and some of his band peering in the school room windows in the fall of 1866.²¹⁰ Although they merely observed, Stratton and the children were uneasy with the encounter. Early settler on the river Amelia Buss made diary entries about Indian women entering her cabin near Timnath uninvited; Duncan recalls similar incidents.²¹¹

By 1869, Friday had joined the rest of the Northern Arapaho under Medicine Man, giving up hope for

a reservation on the Poudre.²¹² In January 1870, Washakie, the Shoshone Chief on the Wind River Reservation, allowed the Arapaho temporary accommodation. By 1878, a permanent place was made for the Northern Arapaho at Wind River.

Chief Left Hand

While Friday's band centered its activities along the Cache la Poudre, an Arapaho band under Chief Left Hand, also known as Niwot, used the Big Thompson and Boulder Creek areas, particularly for winter camps. In 1859, upon returning from the extended summer hunt on the plains, Chief Left Hand protested "strong teepees" (cabins) built by white settlers including Robert Hauck at Boulder City along Boulder Creek.²¹³ Left Hand claimed that his territory extended from the mountains to the east past the Platte River and as far north and south as one could see. Left Hand allowed the whites to stay asking that they plant corn. In the early 1860s, Left Hand's band was camped on the Big Thompson about 1.5 miles below Mariana' Crossing.²¹⁴ Left Hand's band captured Ute Susan, the sister of Chief Ouray of the Ute during a raid on a Ute camp in 1863.²¹⁵ Ute Susan was rescued by Company B of the First Colorado stationed at Camp Collins while Left Hand's band was camped near Greeley. She was later instrumental in saving the lives of the Meeker women after the Meeker Massacre at the White River Agency in 1879.²¹⁶

Chief Left Hand, who spoke English well, signed the Treaty of Fort Wise and was considered a "friendly" Southern Arapaho (Figure 12).²¹⁷ However, an unprovoked attack on his warriors outside Fort Larned on the Arkansas River in the summer of 1864 caused many of his band to abandon this friendship and to retaliate.²¹⁸ After surviving the Sand Creek massacre, Left Hand eventually settled on the Southern Arapaho reservation in Oklahoma.²¹⁹

<Fig 12> Figure 12. Group photo including Chief Left Hand

Others

As mentioned earlier, the Poudre Valley and surrounding areas were frequented by many tribes. However, far less information is available for these groups and virtually nothing is available on individuals other than Friday and Left Hand. Instead the historic record consists of reports of "incidents" with little support or context. These incidents are listed below in chronologic order starting in the 1820s and proceeding through the 1870s.

- The Laramie River was a battle ground between Northern and Southern tribes in the 1820s.²²⁰ This area was considered highly dangerous, and the French Canadian trapper Jacques Laramie was cautioned by his colleagues not to trap on the river. When he did not show up for the spring rendezvous, his friends returned to the river to find his abandoned cabin and murdered body. The river was subsequently referred to as Laramie's river.

- In 1848 a group of Cherokee Indians camped on the North Fork of the Poudre River on their way to the west coast.²²¹ Ute raided the camp and stole the Cherokees' horses. Contrary to some accounts no one was killed in the raid. Mounds located near the camp in 1862 had been credited as being burials of dead Cherokee; however, further investigation revealed that they were trash middens [SB] remaining after a large Cheyenne and Arapaho hunting party had stayed in the area in 1861. The route the Cherokees had followed north from Cherry Creek (Denver) became known as the Cherokee Trail. The next incident below seems surprisingly similar to this one with the exception of occurring in 1852.

- J. R. Todd told of being followed by Indians as his group led by George Pinkerton went up the North Fork of the Poudre in 1852.²²² On July 4th Pinkerton's group camped at Dale Creek and had a small celebration, and on the 5th awoke to find that Indians had taken some of their horses. They chased them down, and killed three Indians and succeeded in retrieving their stolen horses. They met a group of Cherokee who were on their way to Oregon who had had horses stolen by Ute a few days prior.

- Judge A. F. Howes recalled that when he arrived in the Poudre Valley in 1860, in addition to the Arapaho mentioned earlier, a band of 40-50 Sioux were also in the area.²²³

- Mariano Medina remembered Sioux hunting parties crossing the Thompson and Poudre valleys and Big Mouth's Cheyennes grazing their horses along the Poudre in the early 1860s.²²⁴

- Some time between 1860 and 1865, at the Boyd ferry crossing of the Poudre west of Greeley, Robert Boyd built a sod fort for protection from Indians.²²⁵

- In retelling of the "Indian scare" of 1861, Duncan mentions settlers of Timnath building a sod fort on the river just north of the Whitney Ditch headgate.²²⁶ Note that Duncan's parents didn't settle on the Cache la Poudre until 1865, so this must be a retelling rather than a memory of his own.²²⁷ Duncan says that the fort was used in time of alarm but never for actual defense. According to Duncan, the fort enclosure was about thirty yards wide and fifty yards long with rooms for living quarters and a store room covered with a dirt roof. Dirt was preferred to wood since it could not be set on fire.²²⁸ Building the fort occurred the same year that Big Mouth's Cheyenne band was grazing their horses in the Poudre Valley.²²⁹

- Duncan recalls that in 1862, an Indian commissioner met with the Indians on the Strauss farm at what became known as the Council Tree.²³⁰ According to Duncan as a result of this council the land along the Poudre was given to the whites, and the government agreed to support the Indians. F. W. Sherwood was subsequently appointed Indian agent.²³¹ The Council Tree, said to be 100 feet tall and 16 feet around, was once marked with a plaque by the local chapter of the Daughters of the American Revolution (Figure 13).²³² In 1938, it was scorched by a prairie fire and had disappeared by 1947. According to early resident Mrs. John Ridgen, the scaffold burials that had been in the tree's branches in the early days were removed and taken to the Northern Arapaho reservation in Wyoming in 1878.

<Fig 13> **Figure 13. The Council Tree near Timnath, Colorado**

- In July of 1862, Ute reportedly ran off horses from the F. W. Sherwood Ranch which was on the south side of the Poudre from where Friday's band was camped.²³³ A few days later Native American wives of some Laporte settlers who were out picking berries were mistaken for raiding Ute. An alarm went up and white settlers converged on Laporte. James Arthur who was in Laporte headed down river to the strong log house on his ranch where others from the lower Poudre gathered. The Arthur ranch was not far from where Friday's band was camped. When Friday heard of the Ute raid, he had his fighting men head to Spring Canyon to fight the Ute. Friday's men in turn were taken for raiders, increasing the state of alarm. This incident especially highlights the widespread Indian fear that pervades the writings about Native/Euroamerican encounters of the time.

- During the summer of 1863, the Virginia Dale stage station became a place of refuge for women and children from nearby stations as Ute raiders attacked stage stations--stealing livestock and disrupting stage traffic.²³⁴ Throughout the first half of the 1860s, Ute raids occurred in the Big Thompson valley as well.²³⁵ During a raid in 1860, a French settler named DeVost captured a Ute boy of about 12, naming him Zeb. At the age of 17, Zeb returned to his people and a few months later was raiding along the Big Thompson. DeVost and others pursued the raiders not knowing Zeb was with the party. When the settlers overtook the Ute at the head of Huleatt gulch (Hewlett Gulch?), Zeb recognized DeVost, agreed to return his horses (although not those of the other settlers), and to no longer raid on the Big Thompson.

- On at least one occasion in 1864, the 11th Ohio Cavalry was called from Laporte to recover horses stolen by Ute from Mariana Medina at Namaqua and to capture the raiders who had killed one of Mariana's employees during the raid.²³⁶ One of the two Indians found guarding the horses was killed during the recovery and the other died later of gunshot wounds.

- In August of 1864, Territorial Governor John Evans urged the people of Colorado to "organize for the defense of your homes and families against the merciless savages."²³⁷ Evans had endeavored to get assistance from the U.S. government, but failing to do so, felt that he must resort to Militia Law "in times of danger like the present." Militia members were entitled to the property of any Indians whom they captured. His editorial included inflammatory rhetoric such as "Any man who kills a hostile Indian is a patriot; but there are Indians who are friendly, and to kill one of these will involve us in greater difficulty. It is important therefore to fight only the hostile, and no one has been or will be restrained from this" and "[h]e is a true patriot who goes to work and prepares for defense in the only legal and proper way of doing so, in times of danger. Those who refuse to cooperate with him and throw barriers in his way, belong to another class."

- In response to Indian unrest in the summer of 1864, the Lower Boulder and St. Vrain Valley Company of the Home Guards (locally organized defense companies supported by the government) built a sod fort at the junction of Boulder Creek and the St. Vrain River.²³⁸ In the late summer of 1868 the Home Guard retaliated against the Indians who had killed William Brush and two others at the confluence of Crow Creek and the Cache la Poudre, slaying all the raiders.²³⁹

- A party of Sioux stole horses from Rock Bush southeast of Laporte in 1865.²⁴⁰

- In 1865, Sioux raiding parties attacked an emigrant train, a regular coach, and a government wagon train northwest of Fort Collins near the Willow Springs stage station.²⁴¹

- In May 1868, the *Rocky Mountain News*²⁴² reported that Swift Bird and his Sioux band of a half dozen so-called "dog Indian" families were camped near Laporte, and they would bear watching particularly as they prepared to leave.

- It was not uncommon for Indians to be blamed for actions taken by others. Sometime during the early 1860s, horses belonging to Andrew Ames were stolen by Mexicans dressed as Indians.²⁴³ Mary Calloway recalled that even as late 1869, horses at their ranch on Boxelder Creek had to be locked up at night to protect them from white men dressed as Indians and Mexicans riding single file like Indians.²⁴⁴

- Bingham Hill Cemetery, south of the Cache la Poudre on the original Jean Baptiste Provost claim, is reported to contain Native American graves.²⁴⁵ In-ground burials have also been found north and east of Marianna Butte near the Big Thompson River.²⁴⁶ In 1870s workers who were procuring railroad ties along the Poudre river pulled down Native burial scaffolds from the cottonwood trees searching for relics and arrowheads in the bundles.²⁴⁷ Near Greeley, a large cottonwood with a hollowed out center was used both as a camping spot and for scaffold burials in the 1860s.²⁴⁸

While these incidents reflect a generally fearful attitude of and disregard for Native Americans by the settlers in the Cache la Poudre valley, this was not a universal feeling as shown by Mary Calloway's friendship with the Indian wife of O. P. Goodwin, her only friend at the remote ranch near Livermore.²⁴⁹ The women communicated in sign language and exchanged clothing for their children. Although Watrous states that "[t]he settlers were often more apprehensive of the degraded whites connected with the Indians than of the Indians themselves" he offers few examples of these individuals.²⁵⁰ This may be a product of the era in which he was writing since most of his Native American reports are of the "Indian scare" nature he may simply not thought to pursue any other line of thinking.

Amelia Buss offers one of the few female voices remaining from the 1860s and one of the few complete records made at that time. Her diary reflects not only the Indian fears described but also many other concerns. Her diary records her wagon train journey from Boonville, New York, to Fort Collins in 1866 and her first year as a settler in a log cabin along the Poudre about five miles east of Fort Collins.²⁵¹ Quotes from Hoffman and Culley's *Women's Personal Narratives* reflect their attempt at direct transcription of Buss' writing. Near Fort Morgan on September 17, 1866, Buss writes, "I am not feeling well to night & a good deal blue as G. [her husband George] intends to leave the train in the morning & go a shorter route if he can get a pass I am so a fraid of indians I can not bear to go." They reached their cabin on September 21 [apparently without encountering Indians]. On October 9 while ironing, she records that "an Indian came in & wanted a drink of water he had a poney & a long rope on him he had one end in his hand all of the time though the door was shut he looked around the room & a good deel at me then he left & I was not sorry ..." And on October 24 "a bout noon two squaws came I went to the door just as they came up. I thought I would not have them come in & said to them what do you want. they smiled & said "see." I stepped back & they came in & stood round half an hour. It was amusing to see them & hear there low talk & a relief to have them go away. I did not ask them to come again." On the 27th Amelia was visited by a Sioux man who seemed to want her butcher knife which she declined to give him. In summarizing his departure after having looked around for awhile she says "we were glad to see his back I assure you." On November 20 the cabin received a visit by two Indians [male] and a squaw who wanted supper and lodging but were sent away with neither at the conclusion of this entry Amelia says " Oh if I had the wings of a bird I would this moon light night fly a way from this place & the red man I suffer very much from fear & there is no hope for any thing good very soon". As well as fearing Indians, Amelia fears strangers, running out of money, and not being able to cope with the homestead during George's many absences -- to cut wood in the mountains, to seek work in Denver, to work as a freighter, and to find stray farm animals. On the one year anniversary of arrival in Fort Collins, Amelia writes " One year this day I entered upon my new duties & when I look back over the past I have no wish to live another such a year. still in counting the mercies I fine they are many & I think I never felt more thankful than I have in the past year, but at the same time I have complained very much at my hard lot if I could feel duty called me here I could be reconsiled to give up all my former privalages & the society of friends. Now I have settled down

with the belief that here I shall end my days & the sooner I make it home the better my prospects look brighter to day than they did one year ago. we have raised enough for our own use & some besides & very slowly we are gaining a little of this worlds goods.” If Amelia’s experiences represent those of early male and female settlers, it is little wonder so few written records of the period exist. They simply had neither the time nor the energy to write about much beyond their immediate sphere of daily concerns.

In spite of the “Indian fears” there is evidence that positive Euro and Native American relationships did exist. Mary Calloway and Mrs. Goodwin’s friendship offers one example. In addition, it was common for the early French Canadian trappers and settlers at Colona to have Native American wives. In particular, Sam Deon had a Native wife Mary, presumably a Sioux since Sam Deon’s name appears on an 1882 Pine Ridge, South Dakota Reservation list.²⁵² According to historian Elliott West, Antoine and Nicholas Janis were married into the Arapaho tribe; this is at odds with other reports that Antoine Janis had a Sioux wife, a relative of Red Cloud named First-Elk-Woman also called Mary, and at odds with his relocation to Pine Ridge in 1878.²⁵³ All accounts agree that Janis’ wife was a Native American. John (Jean) Baptiste Provost was married to a Sioux woman, White Owl daughter of Black Elk also known as Indian Mary, with whom he signed legal records in 1866.²⁵⁴ Interestingly, it appears that in late 1878, Mary and the Provost children left Laporte and went to first the Red Cloud Agency and later Pine Ridge, South Dakota.²⁵⁵ Earlier that year John Provost entered into a recorded marriage with Virginie Laurent, so it is unclear how binding his “marriage” to Mary may have been. Other important partnerships/marriages between early European Americans and Native Americans include the following: Mariano Medina, mountain man and founder of Namaqua on the Big Thompson River, received Tacanecy in an 1844 trade deal.²⁵⁶ She was a Shoshone woman, traded for horses and a blanket from Louis Elbert Papin when he decided to return to the east and Tacanecy refused to go. Tacanecy and Medina had at least five children and remained together until her death in 1874.²⁵⁷ William Bent, of Bent’s Fort on the Arkansas, married Owl Woman, daughter of Cheyenne leader Gray Thunder or keeper of the sacred arrows White Thunder.²⁵⁸ When Owl Woman died in 1847, Bent married her sister Yellow Woman per Cheyenne custom. Yellow Woman had lived with Owl Woman and Bent for many years. In 1849, former fur trapper, guide, and at that time Indian Agent Thomas Fitzpatrick married Margaret Poisal, daughter of French Canadian fur trapper and trader John Poisal and MaHom (Snake Woman) sister of the Arapaho Chief, Left Hand.²⁵⁹

Chapter 5 - Resource Use

Although plant, animal, and water resources are available in an area, people make conscious choices about how to integrate those resources into their subsistence patterns. These choices can be based on dietary needs, cultural preferences and taboos, and available technologies. Unfortunately, native people were removed from the Poudre area before ethnographers sought to document how many plants and animals were integrated into daily life. The available ethnographic evidence from other areas and the plants and animals found along the Poudre (Tables 3 and 4) can be combined to suggest how these resources might have been used locally.

Native Plants

Ethnographic accounts of native lifeways were collected in the late nineteenth century in an effort to document “disappearing native cultures” before they vanished entirely.²⁶⁰ Although these efforts were carried out more from a scientific perspective than a humanist one, they do provide some of the few extant records from native people who remembered times before reservation life. Many Plains tribes were situated onto reservations which were far removed from their pre-reservation territories and by the time of the ethnographers had been on the reservations for at least one if not two or three generations. It is impossible to say how much knowledge of pre-reservation resource use was lost as elders died and adaptations were made to use reservation resources. Table 7 combines the information from these ethnographic sources for tribes that were known to have occupied the Poudre and the plants known to occur here. Whether these groups used the plants as described when they were in the Poudre Valley or whether they used plants they found here in a different way is simply not known. Identification of specific tribe’s use of a plant does not exclude its possible use by other tribes in other or similar ways.

Table 9. Use of native plants.

Plant	Use	Tribe	Source
Prickly pear	Fruit eaten raw		
	Dried the fruit pulp in the sun		
	Dried, parched and ground the seeds for meal		
	Young stem segments eaten raw (also roasted or boiled and peeled)		
Rice grass	Rubbed a freshly peeled stem over painted colors on hide to set the paint		
	Dietary staple		
	Relatively large seeds de-haired and ground to form a meal used in mush, soup, or cakes		

Tule bulrush	Woven into baskets and sleeping mats		
	Young shoots and root stock eaten		
Cattail	Pollen and seeds used with meal in mush, breads		
	Inner portion of young shoots eaten raw		
	Flowers edible		
	Roots edible year-round, dried and ground for flour		
	Small seed-like fruits eaten		
	Cattail down used for padding in pillows, blankets and cradle boards		
Dock (sorrel)	Medicinal uses		
	Root ground and used for yellow and red dye		
Prairie turnip (Indian turnip, prairie apple, Indian breadroot, white potato)	Medicinal uses		
	Starchy, tuberous root used dried or fresh; eaten raw or boiled		
	Dried ground root used as seasoning, in gruel or bread cakes		
	Flour a trade good with Missouri River villages		
Goosefoot	Seeds used for bread or gruel;		
Sunflower	Leaves as pot herb		
	Dietary staple		
	Seeds parched, ground into flour and made into bread		
	Oil used for skin and hair		
Wild onion	Medicinal uses		
	Bulbs eaten fresh and dried		
Yucca	Dietary staple	Ute	SC:20
	Immature or partly developed fruit eaten raw or baked in fire ashes		EHE:117
	Dried pod for future use		
	White inner portion of newly emerged flower stalks eaten		
	Fibers peeled from soaked leaves and used cording or basketry or netting		
	Root material chopped and boiled used for soap		
	Leaf points and attached fibers used for sewing		

Sage	<p>Branches used in ceremonial rites to drive away evil influences</p> <p>Burned leaves as a purification practice</p> <p>Used sprigs as ceremonial paint brushes</p> <p>Crushed leaves to make a snuff used for sinuses, nosebleed and headache</p> <p>Bark and/or roots used to cure disease, wounds or poison</p> <p>Tea from fringed sage as a menstrual relief or bathing</p> <p>Big sagebrush used as a source for yellow dye and fuel</p>		<p>JH:90-92</p> <p>JRJ:244</p> <p>VMS:27</p>
Rabbit brush	<p>Fibers used to make sandals</p> <p>Chewed inner bark as a gum</p> <p>Used for yellow dye</p>		
Skunk brush	<p>Tea for colds, coughs and chest aches</p> <p>Used pliable stems for basketry</p> <p>Mixed dried fruit into a lotion for smallpox sores</p> <p>Smoked leaves with tobacco</p> <p>Fruit can be eaten raw</p>		
Snowberry	<p>Pressed berries into cakes for winter food</p> <p>Boiled berries as a diuretic</p>	Sioux	JH:77
Hawthorn	<p>Made an infusion from berries for sore eyes</p>		
Chokecherry	<p>Used fire hardened branch as a digging stick</p> <p>One of the most important berry plants</p> <p>Fruit eaten fresh</p> <p>Sun dried and pulverized berries (including pits) for winter use in pemmican, soups and stews</p> <p>Pulverized, unripe berries used to cure diarrhea</p> <p>Chokecherry branches used for arrow shafts</p> <p>Wood used to make bows</p>		JH:27

Box elder	<p>Made a syrup of the sap</p> <p>Used hot burning, good coal forming wood for meat cooking and for cooking spiritual medicines</p> <p>Used charcoal for ceremonial painting and tattoos</p> <p>Burls of lower trunk used to make bowls, pipe stems, drums</p> <p>Valued for sacred character and used for special medicines and special meals</p>	JH:5
Willow	<p>Branches used for basketry, furniture, tools</p> <p>Tea of bark shavings used to cure diarrhea and stomach problems</p> <p>Used as a remedy for cuts by creating a bark ring to stop blood flow</p> <p>Inner bark used as food in emergencies</p>	<p>SC:20</p> <p>JH:115-116</p> <p>VMS:26</p> <p>JRJ:264</p>
Cottonwood	<p>Worn during Sun Dance as to reduce thirst</p> <p>Special tree selected for center pole of lodge used for Sun Dance</p> <p>Fed twigs and bark to horses when other food not available</p> <p>Catkins and inner bark used for emergency food</p> <p>Children used leaves to make play teepees and moccasins</p> <p>Fire burns with a clean smoke so preferred for teepee fires</p> <p>Buds mixed with blood to make a permanent black dye</p> <p>Buds used alone for red, green, yellow, purple and white dyes</p>	<p>Hart</p> <p>130-131</p> <p>Johnson and Larsen</p> <p>264</p>

Sources:

EHE Evans and Evans, *Cache La Poudre*
 GBG Grinnell, *The Cheyenne Indians*
 HDH67 Harrington, *Edible Native Plants*
 HDH72 Harrington, *Western Edible Wild Plants*
 JH Hart, *Montana Native Plants*
 JJ Jablow, *Plains Indian Trade Relations*
 JRT Johnson and Larsen, *Grasslands of South Dakota*
 SC Crum, *People of the Red Earth*
 VMS Simmons, *The Ute Indians*

To the list of native fruit bearing plants found near Fort Collins, Watrous adds wild plums, cherries, currants, gooseberries, juneberries, buffalo berries, raspberries, and strawberries.²⁶¹ He notes that by 1911 many

of the native plants had been killed by cattle grazing. Gooseberry may have been a particularly important fruit for native peoples in that it was one of the earliest berries to ripen.²⁶² Hawthorn berries remain on trees throughout the winter and can be picked at any time and eaten, providing a valuable winter food source.

For the most part, edible portions of the plants in the table above are small (i.e. seeds) and require considerable processing or are only seasonally available (i.e. berries). Although many of the plants are widely distributed, most occur in what would be considered low density patches. Collecting and processing plant foods was likely a time-consuming activity. It was an important enough part of life that George Bent mentions it in his memoirs that are primarily a political history.²⁶³

The seasonality aspect of plant collection deserves a little more consideration. Except for hawthorn berries and tree bark, many of the foods in Table 4 would have been hard to obtain during the winter. Seeds need to be gathered from their parent plant in the fall before the seed head shatters and seeds are dispersed. Roots, such as wild onion, need to be collected or marked while the above ground plant is identifiable. Onion can easily be confused with the poisonous death camas when the plant is not in bloom. Roots can be hard to locate at all if the above ground plant parts are dried, grazed, or trampled. Berry plants can be quickly stripped of fruit by birds and small animals if people don't get to them first. Fruits which have dried and fallen to the ground have lost much of their palatability. Clearly, any one relying on these plants would need to make provision for plant procurement and / or storage outside the growing season.

Bison

Like the available plant materials, bison were used primarily as food, specifically fresh and dried meat, tallow, marrow, dried and smoke tongue.²⁶⁴ Besides meat, other buffalo parts were also highly utilized. The skin of the buffalo was used for bedding and clothing robes with the hair left on. With the hair removed, the skin was used for tepee covers, boats, and shield covers. Rawhide was used directly or made into ropes or bags. Sinews were used for rope, thread, bowstrings, and snow webs.²⁶⁵ Hair was used for ornaments. Bones became tools and ornaments. Horns were carved for spoons and drinking vessels. The stomach was used as a water bladder and cooking skin. A paint was created from the gallbladder. Back-fat was used for hair grease. In the absence of wood, buffalo dung was an important fuel. Dried meat, fat, pemmican (dried meat pounded with dried berries and saturated with fat and stored in leather bags), dressed leather and robes were important trade goods in the historic period.²⁶⁶ In addition to these utilitarian uses, the buffalo had great religious significance. Little wonder then, that a change in the availability of this "super store" on the hoof had profound impacts on native people.

The "on-the-hoof" aspect of the bison requires additional discussion. If bison is a group's primary food source, then the group needs to maintain proximity to the bison for survival. Bison are well-adapted to warm-season short-grass steppe landscapes but do have specialized grazing and water needs.²⁶⁷ Bison are in a category of ungulates known as ruminants, meaning that they use a chew-digest-chew-digest cycle much like cows to allow microbes in their gut to break down their food. This means several things. Bison are continuous grazers. They need to maintain at least a minimum amount of forage in their digestive system to prevent microbe die off. They must eat frequently to ingest sufficient nutrients. As available grazing declines in an area, they need to move to a new location. In addition, they also need access to water on a regular basis. Bamforth distinguishes two types of areas in which grazing and water are sought. The "familiar area" is that range any single animal may visit over the

course of its lifetime and knows how to navigate within.²⁶⁸ The “home range” is that portion of the familiar area which is used during any particular period, say a week or a season. The importance of the familiar area is that this is the area within which a bison seeks food and migrates. Bison prefer new plant growth over old and seek out these areas. They may remember where they have recently grazed and return to those areas after a delay to let new grass sprout and grow. Bamforth feels that bison movement patterns can to some degree be predicted and generalized so that hunting groups (like those he studied on the southern Plains) can reliably find bison.

On the northern Plains, there are indications that native people used fire to both direct bison to desired areas and to stimulate new grass growth and to attract bison at a future time.²⁶⁹ Omer Stewart, Native American ethnographer, in his extensive search for evidence of the use of fire by native people found no specific references to fire in Colorado.²⁷⁰ He felt, however, that fire was used on the plains of Colorado in much the same way as he had found evidence for its use in Kansas. A Colonel R. I. Dodge wrote in 1877 that “The Indians burn portions of the prairie every fall, setting fires so as to burn as vast an extent of country as possible, and yet preserve unburned a good section in the vicinity where they purpose to make their fall hunt. The buffalo finding nothing to eat on the burnt ground, collect on that unburnt--reducing greatly the labour of the hunt.”²⁷¹ Stewart believed that the cessation of native burns allowed the encroachment of trees and brush from the foothills onto the plains near Boulder, Colorado.²⁷² Native use of fire for bison management and the resulting conditioning of the prairie ecosystem have been underappreciated by historians and ecologists due to a bias for North America as a “pristine and untouched wilderness” prior to the arrival of Euroamericans.

The meat value of buffalo compared to other meat sources available on the Plains is shown in Table 10. Clearly buffalo offered significantly more meat per kill than any other medium or large animal. Rocky Mountain elk are present in the mountains today. The extinct Manitoba elk were the larger elk once hunted on the plains. Interestingly, even though elk provides a large amount of meat through the Archaic and Ceramic periods, elk was one of the least preferred meat sources ranking below rabbit based on archaeological faunal assemblages at eastern Colorado sites.²⁷³ This may be due to availability of deer over elk, food preference, or even cultural beliefs.

Table 10. Comparison of large animal yields.

Species	Live weight (kg)	Dressed weight (kg)	Animals needed for 1 week	to feed 100 people for 1 year
Bison	627	425	2	117
Deer	75	52	18	950
Pronghorn	47	20	49	2400
Manitoba elk	314	213	4	230
Rocky Mountain elk	272	184	5	265

Source: Butler, “Cultural and Climatic Patterns,” Table 8, with correction to antelope values.

Across prehistory the Plains in general, and the Poudre area in particular, was an area rich in grazing animals and possibly adequate in plant products based on the continued occupation seen in the archaeological record and the occupancy patterns offered in the historic record. The Poudre area has had a succession of occupants, and the climate has varied on both a short term and long term basis. This said, the “Poudre area” is a loosely defined concept as is the Plains in general. There are no natural barriers to keep people or animals either in or out. Past occupants were free to come and go as resources changed and in response to internal and external pressures.

Chapter 6 - Euroamerican Impacts

As previously discussed, a succession of native groups have occupied the Poudre area for over 12,000 years. Their lifeway, with some variation, was primarily one of nomadic hunting and gathering that followed changing resource availability through an annual cycle. Trade with peripheral groups was undoubtedly part of this pattern as illustrated by findings of Yellowstone obsidian and Texas Alibates flint at archaeological sites. Trading patterns seem to have intensified and were well established by the time of Euroamerican material contact. Euroamerican contact, unfortunately, brought not only material goods like pots and guns and technologies like horses and irrigation but also deadly diseases and bison depletion. The destructive combination of these allowed the Euroamericans to quickly become the most recent and permanent succession group. There is little specific evidence for lifeway changes along the Poudre until the 1860s, but there is considerable information available on the destructive impact of Euroamerican contact in many other areas of the Plains. There is no reason to suspect that conditions along the Poudre were tremendously different from the areas for which information is available.

Scholarly debate is on-going about the relative impact of Euroamerican technologies on native cultures. Some views hold that horses were just “big dogs”, carrying heavier loads and expanding range of travel while other views hold that the horse was fundamental to development of the Plains Indian culture symbolized by mounted warriors and buffalo hunting. While guns were “deadlier arrows” with their explosive sound and killing without contact, they certainly changed the nature of hunting and warfare. There is little disagreement that undesired contact with European diseases had a profound impact on historic native cultures through population attrition and loss of cultural knowledge. Debate does continue as to how many lives were actually lost and as to what the on-going impacts of disease were. Finally, there is little debate that without bison herds, nomadic lifeways were no longer viable.

Some scholars think that trade was the underlying engine of these impacts. It was through trade that disease, horses, and guns spread across the Plains. Although exploited by Euroamericans, trade patterns were well-established long before European contact on the Plains. Trade served important social and subsistence functions. Successful trade relied upon well-known trading patterns to which all parties could come prepared and which served a variety of purposes for the trading parties.

Trade

Direct evidence is sparse, but prior to horse and Euroamerican arrival, there probably existed an Indian trail following the foot of the eastern slope of the Rockies running from what is now Canada to Mexico--the Old North Trail.²⁷⁴ McClintock, who documented Blackfoot lore, religious beliefs, and ceremonies in 1910, had at least one source whose father had seen the trail and described it as becoming overgrown with moss and grass. The trail was originally established by the southward migrations of the Algonquin people and continued to be used into historic times. It is likely that this trail was part of the trading pattern that existed at the time that horses were introduced onto the Plains. George Bent, a Cheyenne, describes the North-South trail: “Just as there are currents in the sea, so also are there regular currents of Indian migration in the plains. There are no beaten paths or trails that you could see, but there were well-known routes which were used by the different tribes. One of

those currents of Indian movement was from the Black Hills of Dakota south across the heads of the Platte and Arkansas rivers to the Canadian and Red rivers, and so on clear down to Texas. This route was used long ago by the Comanches in their migration to the south; later it was used by the Kiowas, and still later by the Cheyennes and Arapaho.²⁷⁵ According to Plains archaeologist James Gunnerson, the trail was used for cattle drives in the late 1800s and U. S. Interstate 25 now follows much of the route.²⁷⁶ Based on these descriptions, the Old North trail crossed or came very close to the Poudre. At least seven trails have been documented crossing Rocky Mountain National Park from the Colorado River to the Front Range.²⁷⁷ Several of these follow the Cache la Poudre drainage, eventually ending on the Plains.

Bent also talks about the trade fairs on the North Platte:

After they had been pressed south [by 1800], part of the Kiowas used to return north to the North Platte nearly every year to meet the Crows, Arapaho, and sometimes the Cheyennes. The Kiowa brought horses and Mexican goods to this trading fair on the North Platte, and for these things they received from the Crows, Arapahos, and Cheyennes, guns, ammunition, British goods, eagle feathers, ermine skins, and other articles. Our old people say that the Cheyenne were engaged in this intertribal trade for many years. These Cheyenne traders operated this way: they secured horses, some by trade from the Kiowas and other tribes, some by stealing from the Pawnees and other hostile tribes. They took part of these animals to the Mandan or Ree [Arikara] villages on the Missouri and exchanged them for guns, ammunition, British goods, corn, dried pumpkins, and tobacco. They also gave the Mandans and Rees dried buffalo meat and robes for corn, pumpkin, and tobacco. They kept part of these articles for their own use and took the rest to the North Platte and exchanged them with the Kiowas and other tribes for more horses. These annual fairs on the North Platte were finally broken by the Sioux [in 1813].²⁷⁸

Established trade patterns were far more extensive than just described, stretching from the Great Lakes region to the Pacific Coast.²⁷⁹ Although the Poudre Valley was not a central part of the trade pattern, the pattern was extensive enough that it was likely important to people here. The trade pattern consisted of several trade centers and regularly used routes between them. Trade centers were often found at the boundary between two ecotones [SB] with exchange of goods from one ecotone to the other or within ecotones where different groups exploited different resources for exchange.²⁸⁰

A primary trade center was located near The Dalles on the Columbia River. In the fall of the year dried fish were traded inland to the Columbia Plateau in return for inland items like buffalo robes from the Nez Perce and camass roots from the Klamath. In the spring of the year, goods from the Middle Missouri villages and Columbia trade centers were exchanged at a secondary trade center in southeastern Idaho or southwestern Wyoming (accounts differ). W. Raymond Wood, a Plains archaeologist and anthropologist, notes that this trade center was an intermediate node in the trade system with the Columbia and Middle Missouri villages being the primary trade centers. Crow from the northcentral Plains, Nez Perce, and Flathead from the northern mountains, and Ute and Shoshone from the Great Basin used this trade center. A series of villages along the Middle Missouri River--the Mandan/Hidatsa, Arikara, and Dakota--comprised the other primary fall trade center. Here the Crow and the Cheyenne, and to a lesser degree the Arapaho, Comanche, and Kiowa, brought plains goods of buffalo products and prairie turnip flour to trade for agricultural goods like corn, beans, and squash and during historic times to trade horses for guns and European goods. Assiniboin and Cree traded here from the northcentral regions of Canada. Reports from early French traders/trappers suggest that these trade patterns were in place by the early 1700s.²⁸¹ The provision trade--procuring pemmican and dried buffalo meat for European traders

and trappers in northern Canada--became particularly important at the Middle Missouri villages during the commercial trapper period.

This extensive trade existed for a variety of reasons. Archaeology has been used to understand the development of trade on the southern Plains between New Mexico and Texas beginning in the 1300s. Knowledge from this area may provide insight to trade patterns closer to the Poudre. The southern Plains grasslands, while generally supporting large numbers of grazing animals such as bison, do not provide many plants which humans can digest. A high-protein diet obtained from lean animals with limited intake of carbohydrates and fats can lead to health issues including impairment of liver and kidney function and suppression of fetal development.²⁸² A society based on grazing animals needs to find sustainable sources of carbohydrates and fats, particularly in the late winter / early spring when grazing animals have depleted their winter fat stores. On the southern Plains, interactions between the agricultural village pueblos and the plains nomads may have been based on exchange for mutual food needs. The pueblo populations had limited access to large herbivores due to distance from the herds, limited transport capability, and limited ability to spend significant time away from their fields and villages. They could, however, grow and store a surplus of corn and other plant products. In contrast, the plains nomads had ample access to herds, significant transport capability with dogs, and could spend months away from any permanent base camp. The time of the year when the winter animals were at their leanest was also the time of year when the pueblos knew if they had a surplus of corn to trade and were also in a position to increase the protein content of their diets in order to be fit for the summer farming season. Grassland-centric nomadic hunting on the southern Plains may not have been a viable lifeway until the pueblos were large enough to provide a dependable carbohydrate surplus to trade. This is thought to have occurred in the 1300s. Prior to this surplus availability, nomadic hunters gathered wild carbohydrate-rich foods from the foothills and plains margin areas--well away from bison primary grazing areas. Potentially, carbohydrate limitations constrained nomad population density as well.²⁸³

The plains of Colorado are in many ways similar to the southern Plains. Water deficit levels are high and forage quality is poorer than the mixed-grass prairies to the east.²⁸⁴ Even though there are many useful plants on the western Plains, the availability of human-edible plants is low and most require significant processing prior to use. It should not be surprising to find that full-time nomadic hunters developed exchange alliances with the nearest agricultural peoples either directly or through middle-men. In northern Colorado, trade patterns could have included the Middle Missouri Mandan / Hidatsa and Arikara villages or the southern Pueblos, trade to either might have followed portions of McClintock's "Old North Trail." By the early 1800s, Cheyenne were known to be acting as middle-men in exchange with the Middle Missouri groups. The issue of obtaining fat and carbohydrates is not trivial. On the northern plains, native and European hunters passed up lean animals in the late winter since the fat-depleted meat was indigestible and preferred cows to bulls since their fat occurred as back fat which was easy to get at.²⁸⁵ Particularly telling, these were comments about animals on the mixed-grass northern Plains who were in somewhat better condition in the winter than animals further south with less nutritious grazing. Further south, obtaining sufficient fat and carbohydrates in the winter was more difficult.

While trade between nomadic groups and agricultural villages may not have been absolutely essential to survival, it certainly provided a mechanism to assure survival through difficult times.²⁸⁶ During the late winter or during times of poor plant or animal productivity, nomadic groups could turn to agricultural surplus. And if the harvest or local hunting were poor, villages could turn to a nomadic supply of meat and hides. To draw on this

surplus during hard times meant that a trade relationship needed to be maintained through time. As a result, trade functioned on many levels whose relative importance shifted over time and place. These functions could have included assuring availability to both subsistence and non-essential goods, building political capital between groups and individuals, and providing an opportunity to meet and marry people outside one's band. Whatever the driving mechanisms, trade patterns were well-established across the western U.S. before European contact and in particular before introduction of the horse. Unfortunately there is little informative evidence about trade practices along the Poudre.

Horses

Clearly, trade as a mechanism of interaction was in place long before the arrival of the horse on the Plains. The horse modified trade patterns by increasing the volume of goods that could be traded by increasing transport capability, by becoming an important item in the exchange system, and by possibly altering the nature of the trade patterns.

Although horses arrived in the southwest with Coronado and DeSoto in the 1540s, there is no evidence that any of these animals escaped, and if they did, there is no evidence that breeding pairs survived.²⁸⁷ The legend that a founding pair of Coronado's horses bred, and populated the Plains, and that their descendents were domesticated by Native groups is folk lore.

A better explanation for the diffusion of horses onto the Plains starts in the Spanish settlements of New Mexico in the 1600s. The Spanish trained native slaves to tend their horse herds. Through this process native people developed knowledge of horses. Many native horse handling practices and equipment designs can be traced to this original Spanish influence. Apaches are known to have traded for horses at the Taos Pueblo as early as 1639 and no later than 1659.²⁸⁸ About this time Ute prisoners escaped from the Spanish at Santa Fe taking some horses with them.²⁸⁹ With the Pueblo Revolt of 1680, large numbers of confiscated horses were taken by the Pueblos and traded to nearby tribes.²⁹⁰ Within one hundred years of the Pueblo Revolt, the horse had been adopted throughout the Plains.²⁹¹ Initial trade in horses occurred between friendly groups since horse handling skills needed to be transferred as well.²⁹² Trading horses with enemies gave those enemies an undesirable warfare parity. This imbalance of horse access was short-lived, however, as horses rapidly spread across the west through trade and theft.

Horses diffused from the area around Santa Fe both north and east across the Great Plains and north up the western side of the Rockies along the Colorado and Green rivers following the trade routes described above.²⁹³ The Comanche, Shoshone, the southern Kiowa and Kiowa-Apache all acquired horses by 1670.²⁹⁴ It is likely these groups received their initial horses via trade with the Pueblo Indians for buffalo robes.²⁹⁵ On the central and northern Plains, the Pawnee had horses by 1700, the Arapaho obtained horses around 1750, the Teton Sioux about 1765 and the Cheyenne by 1780.²⁹⁶ A study of this diffusion pattern led one research team to propose that the simple north-south trade pattern described earlier was really two, mostly disconnected trade circuits with southern and northern foci.²⁹⁷ It was only with dissemination of the horse that the full north-south trans-Plains trade circuit developed as now recognized. Rather than the trade patterns changing, it may be that the horse significantly intensified existing trade patterns. This intensification may have left more preserved and identifiable evidence, particularly when Euroamerican goods like iron and glass entered the system. Recall that much of the

early exchanges were based on dried foods or clothing which would not necessarily be preserved or identifiable to a source location.

European goods began to arrive at the Middle Missouri villages in the 1700s. At that time nomadic Plains tribes were exchanging dried buffalo meat, robes, and leather for agricultural products like corn and beans and adding European goods like axes, knives, guns, powder, bullets, and kettles to their exchange.²⁹⁸ European goods arrived in the Middle Missouri via the British in Canada and the American traders out of St. Louis.²⁹⁹ In the north the British were willing to trade guns for furs with an agenda to build native alliances while in the south the Spanish stimulated an existing trade network between Pueblos and dog-nomad buffalo hunters for buffalo, agricultural products, and slaves. The Spanish refused to trade in weapons.³⁰⁰ When horses became widely available in the southwest, the trade dynamics intensified to a Plains-wide circuit spanning from the Middle Missouri to the Pueblos. Horses from the southern Spanish herds were traded northward in return for southward firearms and other British/American goods.

The Cheyenne's move to fully nomadic buffalo hunting and trading was driven by a desire to be a key player in this trade pattern.³⁰¹ Once the Cheyenne acquired horses, it was clear that horses were both a means of production and a trade commodity. As a means of production the horse provided an ability to hunt further and transport more buffalo products. As a trade commodity the horse was exchanged for agricultural products on the Middle Missouri and taken in exchange for European goods on the southern Plains. Control of horses became a central focus of male tribal life. For example, the traditional status mechanism of counting coup against enemies came to hold less prestige and respect than stealing many horses.³⁰²

Although the horse increased transportation efficiency, this efficiency came at a cost. Teepees became larger with the availability of horses to transport them, but this also created a reliance on horses in order to move camp.³⁰³ Horse ownership and maintenance meant camps needed to have sufficient water, shelter, and grazing for horses, and camps needed to be moved frequently as nearby grazing deteriorated. There is some indication that large group camps for ceremonial and governance purposes became limited in location, season, and extent when the need for large horse grazing areas developed.

Among the Comanche, adoption of the horse and specialization in bison hunting resulted in a loss of two-thirds of their previous plant lore and a significant decrease in status for women.³⁰⁴ Although the "why" of the loss of plant lore is unknown, it may have resulted from the increased speed of horse travel leaving less time for observation; from the increased range of travel lessening familiarity with a specific area; and from the change in observation position from foot to horseback shifting the perspective of the viewer. As for the alteration in women's status, it is known that during the dog-nomad era, that dogs were women's property. Horses, however, were primarily men's property. As horses became a symbol of wealth rather than merely a means of transportation as dogs were, through horse ownership men now controlled the means to increase wealth accumulation and status. Among the northern Plains Blackfoot, acquisition of the horse meant that women no longer participated in bison hunting but instead became crucial to hide preparation; one woman could prepare ten buffalo robes in a season.³⁰⁵ Since raw hides were virtually worthless as a trade item, one road to wealth was for a man's household to prepare as many robes as possible. The female average age at marriage dropped below puberty and polygyny [SB] increased.³⁰⁶ Horses became an important part of bride wealth [SB], increasing the assets of the bride's family, and motivating them to marry their daughters as early as possible.

Wide-spread access to horses changed trading patterns as well. Trading forts like Bent's Fort built around 1833 near present day La Junta, Colorado, on the Arkansas River eliminated the need for Middle Missouri exchange by situating white traders in buffalo country to provide ready access to hides and dried meat.³⁰⁷ William and Charles Bent built the fort at the encouragement of the Cheyenne who agreed to do their trading there. The Cheyenne's decision to shift their trade directly to white traders without native middle men had several ramifications.³⁰⁸ First, the presence of Cheyenne, and by association the Arapaho, limited trading by other groups at fort. Second, because of the Cheyenne's trade with the fort, they had ready access to guns and ammunition and so could maintain their control around the fort. And third, positioned immediately to the north of the Kiowa and Comanche who were south of the Arkansas, the Cheyenne were in prime position to raid the horse herds of these less well-armed groups--who in their turn were raiding Spanish settlements in Texas and Mexico--and increase their trading wealth. Not incidentally, the decision to trade as far south as Bent's Fort created a permanent rift in the Cheyenne tribe--the Southern Cheyenne splitting off to trade around Bent's Fort and the Northern Cheyenne centering their trading activities around Fort Laramie in Wyoming while maintaining a proximity to the Black Hills.³⁰⁹ At Bent's Fort, native goods received in trade were primarily buffalo robes/hides, horses, and mules.³¹⁰ Spring trading in buffalo robes was replaced later in the year by trade in horses. All goods were transported to St. Louis where, interestingly, the horses and mules were in high demand to outfit westward bound emigrants. It should be noted that Bent's Fort was not solely involved in native trade: its owners--Bent, St. Vrain and Company--took trade goods to Taos where the chief imports were cloth, clothing, sugar, coffee, tea, rice cutlery, domestic items, and rum in return for Mexican silver and gold.³¹¹ By 1850, native trade in processed hides, robes, pemmican, and meat for manufactured goods including food, alcohol, clothing, and tools, was an important part of the U. S. and world economy.³¹²

Disease

European diseases followed the same trade routes that horses did. When Europeans arrived in North America, they brought with them diseases for which the native population had no immunity: measles, smallpox, cholera, influenza, typhoid, and whooping cough.³¹³ Across most of the U.S., native deaths due to European diseases reduced populations on the order of 70 percent over 400 years. Total Plains population in 1500 has been estimated at roughly 190,000 people; by 1900 this number had dropped to 63,000, a 67 percent population drop.³¹⁴

It is estimated that almost fifty percent of the population of the Rio Grande region pueblos died from Spanish introduced diseases between AD 1500 and 1600.³¹⁵ Trade with pueblos likely spread these diseases beyond the immediate region onto the Plains although no documented records exist. The first recorded smallpox epidemic on the southern Plains occurred in 1687-1691; the first recorded northern Plains outbreak occurred in 1730 among the western Cree and probably the western Sioux and Arikara.³¹⁶

Due to repeated contact with traders and concentrated, communal living arrangements, sedentary groups like the Mandan were often the hardest hit by epidemics like the smallpox outbreaks that occurred on the Middle Missouri between 1780-1782 and again between 1831-1837.³¹⁷ Nomadic groups like the Cheyenne often dispersed into small family bands as soon as disease was detected.³¹⁸ Of course, those infected still suffered and anyone they contacted could become infected, so this approach reduced but did not eliminate disease impact.

Epidemics that affected the Plains nomads are shown in Table 11. The 1848 cholera epidemic may have killed half of the Cheyenne.³¹⁹ Resentment after an 1854 smallpox epidemic among the Ute may have been a motivator in their subsequent attack on the small trading post at Pueblo.³²⁰

Table 11. Major epidemics on the Plains.

Year	Affected Tribes	
1780-1782	Middle Missouri, Mandan	
1831-1837	Plateau groups, Shoshone	
1845	Middle Missouri, Mandan, Shoshone	
1848-1849	cholera	Cheyenne, Sioux
1850	Cheyenne, Pawnee, Southern Arapaho, Kiowa	
1854	Kiowa, Plains Apache, Comanche	
1854	Ute, Arapaho	

Sources: Coel, *Chief Left Hand*, 21; Fowler, “Arapaho,” 857; Hyde, *Life of George Bent*, 96; Levy, “Kiowa,” 921; Shimkin, “eastern Shoshone,” 326; Swagerty, *United States Until 1850*, 257-258.

Populations without immunity provided by previous exposure to disease were often hit with more than one disease at once.

...such tandem disease assaults were overwhelmingly the rule rather than the exception. Peoples with no previous exposure to venereal syphilis, gonorrhea, smallpox, plague, typhoid fever, yellow fever, diphtheria, influenza, mumps, chicken pox, and in most places, if not all tuberculosis, were *most commonly* assaulted by several of these diseases at once. The first result, on top of the explosive impact of a singularly devastating disease among a nonimmune population, was a synergistic magnification of that explosion as each new disease fed on and compounded the debilitation caused by the others. In the wake of this carnage--which attacked everyone in the affected community at once--normal patterns of social life, including drawing water and gathering food and caring for others, hopelessly collapsed. As a result, the horrifying impact of the diseases was heightened even more by malnutrition, dehydration, and despair.³²¹

After the first exposure to a disease that affected all parts of a community, subsequent epidemics mostly affected children without immunity, a pattern more common in Europe during the eighteenth and nineteenth centuries.³²²

The impact of these diseases was profound according to Thomas Binnema, a northern Plains researcher.³²³ Particularly during small pox epidemics, deaths occurred across all population demographics, although eyewitnesses say adult males died in disproportionate numbers. On the northwest Plains according to ethnohistorian Binnema “Communities appear to have turned inward as they worried more about their day-to-day existence than about their relations with others. They turned from war to subsistence ... Communities lost important repositories of community knowledge ... [When game was scare after the epidemic of 1787] the scarcity probably had as much to do with perceptions as with reality. If adult males died in disproportionate numbers, the community would have been less able to predict the movements of game and to hunt effectively, creating food shortages.”³²⁴ During the 1849 cholera outbreak among the Kiowa, “hundreds died and many committed suicide in their desperation.”³²⁵

Even after an epidemic passed, impacts continued. The 1837 small pox epidemic reduced Middle Missouri village populations of Mandan, Hidatsa, and Arikara, so significantly that their role as trade gatekeepers was usurped by Teton Sioux and white traders.³²⁶ Population decline forced the Mandan and Hidatsa villages to consolidate into a single community, Like-A-Fishhook Village in 1845.³²⁷ Two side effects of exposure to many Euroamerican disease, reduced fertility and fecundity, [SB] meant that many native populations never

recovered their original numbers.³²⁸ Community vitality was slow to recover in the face of personal feelings of helplessness and loss.³²⁹ The individual effects of social breakdown, depression, and disease cycles may never be fully appreciated compounded as they were with group relocation and consolidation, Euroamerican antagonism, and resource depletion.

Bison Eradication

As well as population loss due to disease and changes in trading patterns across the Plains in the early 1800s, bison availability was also changing. Here information is available at a local level. Earlier, in describing the Cache la Poudre as seen by early Euroamerican observers, it was noted that both Todd and Greeley remarked on the abundance of game but Duncan related that by the 1860s buffalo were absent from the Poudre area with the last animal killed in 1865 near College Farm.³³⁰ Duncan speculates that a severe snow storm during the winter of 1851-1852 was instrumental in the elimination of game noting that there were “thousands of buffalo skulls and disintegrated skeletons scattered over the country in the 1870s.” Antelope, however, were plentiful in 1860, presumably filling the grazing vacated by the buffalo. The winter of 1844-1845 was also severe along the Front Range and in Utah, killing so many bison that Euroamerican travelers remarked on the bones and skulls.³³¹ Complete disappearance of the buffalo was not limited to the Poudre; in 1874 the last of the large buffalo herds was seen at Bijou Flats near Fort Morgan.³³² Further south, bison were disappearing along the Arkansas and Canadian rivers as early as 1833.³³³

Along with harsh winter conditions, intertribal conflicts may have affected bison abundance in specific areas. Paul Martin, a specialist in animal extinction, and a colleague have reviewed the journals of Lewis and Clark and noted what they consider to be a clear pattern of game-rich and game-poor areas.³³⁴ The game-rich areas were situated between Northern tribes, specifically the Assiniboin, Atsina, Nez Perce, Crow, Flathead, Shoshone, and Blackfoot who were at war between 1800 and 1840 along the Middle Missouri and Yellowstone rivers in Montana. The vast areas between the tribes became a “no-man’s land” where game thrived due to a lack of hunting pressure. A similar area may have existed between 1825 until the peace of 1840 from the forks of the Platte to the Rocky Mountains due to conflicts among the Arapaho, Cheyenne, Comanche, Kiowa, and Pawnee.³³⁵ Stephen Dodge made the following observation during his 1835 expedition while just west of the forks of the Platte: “This section of country is what is called the neutral ground, and extends from the forks of the Platte almost to the foot of the mountains. It will not admit permanent residence of any Indians and is only frequented by the war parties of different nations. The Arapahas [sic] and Cheyennes sometimes move into this country for a short time during the summer to hunt buffalo.”³³⁶ After 1840, except for exclusion of Pawnee, the area north of the Arkansas River was open to the peace parties for bison hunting.

Pressure to open this neutral zone came as a result of the decline of bison in other areas and a growing market for hides and meat trade goods at trading forts like Bent’s Fort on the Arkansas.³³⁷ But by 1847 the resource had been exhausted. George F. Ruxton, an Englishman traveling in western Colorado, observed that Ute and Arapaho were in conflict over hunting areas since there were no bison from South Park extending 100 miles east on the plains.³³⁸ This condition held for most of the Plains tribes: Kiowas recorded few or no bison on their painted robe calendars between 1849 and 1850, Comanche ate horses in 1850, and by 1853 Cheyenne and Arapaho starved for half the year.³³⁹ The rapid depletion of the no-man’s land north of the Arkansas was likely due to variety of factors: the increase in the wild and captive horse herds which occupied grazing areas and water

sources; the unintentional introduction of anthrax, tuberculosis, and brucellosis by cattle imported from the south (Texas and Louisiana); the end of a period of several decades of wetter than normal conditions and the prevention of bison herd movements to traditional drought refugia due to human occupancy; and the increase in hunting for both subsistence and trade purposes. In particular, female animals between two and five years old were selectively harvested for their meat and thinner, more easily worked hides. At Bent's Fort in 1855, Cheyenne were killing 40,000 animals a year (44 animals per hunter per year), twice the number needed for subsistence alone. While this may seem inconsistent with the patterns of starvation previously mentioned, it is likely an issue of seasonal timing. The Cheyenne, for example, moved far out onto the Plains to hunt bison during the summer and then retreated closer to the Rocky Mountains for the winter to avoid harsh winter conditions on the Plains and to be near trading posts. By the 1840s and 1850s, game had been seriously depleted in these traditional wintering areas due to overhunting by both native and Euroamerican hunters. Late winter food shortages were the result.

The impact of Euroamerican westward travel on bison populations should not be minimized. Charles Pruess, who accompanied Fremont in 1842 and 1843, described the route from Missouri to Fort Laramie (the Oregon Trail) as "the same finely beaten road, which the smooth surface of the country afforded us for a distance of six hundred and thirty miles, from the frontiers of Missouri to the Laramie fork."³⁴⁰ Few buffalo were found west of Chimney Rock (Nebraska).

Jesuit missionary Father Pierre-Jean De Smet described the California Trail as seen by Indians in 1851 south of the Black Hills:

On the skirts of this magnificent highway there is an abundance of grass for supplying the cattle and animals appertaining to the caravans which are incessantly traveling on it, from early spring to autumn, every succeeding year. Our Indian companions, who had never seen but the narrow hunting-paths by which they transport themselves and their lodges, were filled with admiration on seeing this noble highway, which is smooth as a barn floor swept by the winds, and not a blade of grass can shoot on it on account of the continual passing ... They visited and examined in detail all the forsaken camping-grounds on the way; they brought a great variety of objects to me to have their use and significance explained ... But these relics collected by our savage friends were not the sole vestiges of the great multitude of emigrants who, in search of gold, had crossed this vast plain with a rare courage and unheard-of fatigues and difficulties. The bleached bones of domestic animals disseminated profusely along the route .. The countless fragments of conveyances, the heaps of provisions, tools of every kind, and other objects with which the emigrants must have provided themselves at great expense, but which the most impatient, eager to outstrip others in the Western Eldorado, had forsaken and cast aside, testify to that bold recklessness which they hazard everything in this enterprise which has proved fatal to thousands.³⁴¹

Historian Elliott West estimates that between 1841 and 1859 over 300,000 people and 1.5 million oxen, cattle, horses, and sheep traveled along the Platte.³⁴² These grazing animals took their toll. By the mid-1850s along the Arkansas River by late summer animals had to be taken at least a mile and sometimes four miles away from the river to find grazing.³⁴³ In 1857, an Army column moving up the Platte to Utah was unable to carry sufficient supplemental feed for its horses, mules, and oxen and lost many to starvation. Recall that bison as ruminants need access to both good grazing and water.³⁴⁴ It is no surprise that the bison would have abandoned the major trail areas in search of sufficient grazing areas.

Native people were not unaware of these impacts:

The Indians had long been dismayed as their game supply dwindled beneath the guns

of emigrants and hide and tallow hunters, especially of the latter, who slaughtered buffalo indiscriminately and left their flesh to rot. They were deeply concerned when the white man's livestock grazed off the nutritious prairie grasses on which the buffalo and their horses depended, for in a land in which one head of cattle required thirty acres or more for year-around pasture, large areas along the traveled routes were quickly depleted of their cover by emigrants' horses and cattle, and wind erosion set in. The grass and the buffalo were their natural resources from which came the bulk of their food, lodges and blankets, resources which they had used for generations, but never abused. Needless to say they did not relish a horde of gold seekers trekking through the heart of their hunting lands, scaring away their game and depleting their resources still further.³⁴⁵

Similar conditions likely held, if only on a smaller scale, in northern Colorado and intensified after the arrival of Euroamerican settlers in the Poudre valley. Particularly range fragmentation and forage competition can be quantified. After Colona was established in 1859, the bottom lands along the Cache la Poudre were quickly occupied with small farmsteads.³⁴⁶ Greeley was established in 1870 and within a year of the first canal being dug over 2,000 acres of land near Greeley were under irrigation.³⁴⁷ The 56-mile long Greeley Colony fence to exclude range cattle from cropland was completed by 1871.³⁴⁸ By June of 1867 a leg of the first transcontinental railroad had entered Colorado near Julesburg where it veered north through Cheyenne, Wyoming.³⁴⁹ By May 1869, the Denver Pacific railroad had graded a line between Cheyenne and Denver via Greeley and Fort Lupton. The line itself was completed in 1870. A line running west from Kansas City reached Denver this same year. Congressional land grants along the route were offered as incentives to the railroad companies. Cattle ranching began in Weld County in the early 1860s to supply mining communities and Denver with fresh beef; by 1870 there were over 70,000 head of cattle in the county.³⁵⁰ Given the high overlap in both winter and summer forage between cattle and horses, which may be similar for buffalo, the increase in grazing animals likely contributed to the decline in bison near the foothills.³⁵¹ At this same time, sheep grazing intensified from 20,000 animals to two million by the end of the decade.³⁵²

By the 1860s, native populations had declined due to disease and warfare, loss of bison resources and resulting starvation, and a lifeway dependent on Euroamerican goods and provisions had developed. Euroamericans had a firm foothold on choice grazing lands and water resources and were steadily eroding the capacity for a concurrent nomadic lifeway. Any single one of these events may not have resulted in the elimination of protohistoric nomad lifeways by native groups, but the combination proved fatal.

Chapter 7 - Analysis and Conclusions

*Maps are about power: the rich, powerful and victorious determine place-names, just as they write history. The final defeat for losers is when they are wiped off the map.*³⁵³

At the outset of this book, the question was asked why there are no Native American references in the immediate geography along the Poudre River. Clearly, the Cache la Poudre valley has been the home of many peoples over thousands of years, as seen by both historic and archaeological sources. The area, although not lush, provided many types of animal and plant resources and had nearby access to foothill and mountain resources. Long-established trade patterns augmented local resources. The Poudre River seen today does not look much like that seen by Native Americans or Euroamericans 150 years ago. With water management practices the course of the river has changed somewhat and the animal life and vegetation are different. The imprint of Euroamerican presence has virtually eliminated any indication of native people.

There are few records which can be taken a spot along the river with the announcement "Right here, this happened and this native person did it." The records simply don't have that kind of detail. Historians can't walk along the river and say "here, berries were picked or a lookout watched for game." They can't walk through Larimer or Weld county and trace "a week-in -the-life of ..." or "a year in the life of" They could certainly speculate about what this would be but there isn't hard evidence to be assured of an absolutely accurate reconstruction. Just as clearly, Native Americans are no longer following the hunter/gatherer lifeway along the corridor that was successful for thousands of years. Was the replacement of Native Americans with Euroamericans just another of the on-going replacements shown to have occurred over time, or was there something substantially different about this most recent replacement?

Jared Diamond--author of *Guns, Germs, and Steel*, a treatise on why some societies have come to dominate others, and *Collapse*, an exploration of why some of those same societies have failed--may offer a framework for what has happened along the Poudre. In *Guns, Germs and Steel*, Diamond asks why in societal encounters a numerically inferior group (Europeans) almost always was able to conquer a numerically superior and locally supported group (indigenous peoples). Diamond attributes the collapse of the Inca Empire in South America to the concurrent arrival of European diseases for which the Incans had no immunity, to horses which made the Europeans appear god-like in stature, and to superior weaponry using steel and gunpowder. In *Collapse*, Diamond identifies five factors which contribute to a society's ceasing to function at its previous levels without the apparent influence of outside groups. This does not mean that all the members of society die or are killed (although it may) but that the cohesive functioning of the society ends. The collapse of the Central American Maya city-states by AD 900 provide a good example. These city states no longer survive except as archaeological ruins like Copan and Tikal, but people of Mayan descent continue to inhabit the region and maintain may cultural traditions from the Mayan period. Diamond's five factors are:

1. Environmental damage
2. Climate change
3. Hostile neighbors

4. Friendly trade partners
5. Societal response to environmental problems

On the Central Plains, was the end of wide-scale nomadic lifeways a product of societal collapse or the inevitable results of European disease and guns or potentially a combination of both? In contrast to the South American Inca collapse, Plains groups had obtained horses, guns, and metal implements long before they encountered Europeans or Euroamericans in person. It is unlikely that the arrival of horse-mounted Europeans with guns was sufficient to cause societal collapse. Disease, however, may be a very legitimate reason why Euroamerican lifeways survived and the native pattern of nomadic hunting and gathering did not. As previously shown, disease reduced native populations at a time when they were experiencing declining bison availability and were being directly pressured by Euroamericans for land control and access. While numerical losses from disease were significant, these losses were even more debilitating since they included critical members of society such as knowledge- and culture-bearing elders and hunting-age males. Loss of numbers resulted in reformation of tribal bands and loss of cultural history resulted in new patterns of interaction for survival. These patterns included a reliance on trade with Euroamericans for necessities.

European diseases may also provide an explanation of the succession of cultural groups that occupied eastern Colorado beginning in the 1600s. As earlier noted, European diseases hit the southern Pueblos in the 1500s, and likely to some extent these diseases spread northward from these trading centers. Southern populations were most affected leaving a void which unaffected northern groups could exploit (recall the Comanche pressured the Kiowa and Kiowa-Apache to move south, implying that there was an un- or under occupied area into which the Kiowa were able to move). Most of the movements documented earlier were shifts from north to south and as a result of pressure from outside groups. Similarly, the Cheyenne and Arapaho moved westward after initial smallpox outbreaks on the Plains and the Plateau. While this theory can't be proven, it may help explain replacement in the absence of other factors.

Native losses to disease may have had a second impact: an increase in bison herds. Earlier it was mentioned that game-rich areas developed where native hunting was excluded due to inter-group hostility. A similar effect would occur if hunting were suppressed due to a lack of native hunters.³⁵⁴ The vast herds seen by early Europeans, which in turn stimulated European hunting and a market for bison products may not have been "natural" at all but a by-product of native attrition. These increased herds were also a magnet for native groups, being pressured by their neighbors; this may provide another explanation for why the central Plains has seen so much group movement. Again, this is a theory that is difficult to prove with available evidence.

If the Plains can be considered a "society" of nomadic hunters composed of many independently functioning groups, that is tribal bands, could any of Diamond's five factors have contributed to the collapse of their society? Since AD 1500 there has been no clear evidence of climate change--although conditions from year to year and decade to decade have varied considerably. While climate change was not a factor, environmental damage in the form of bison depletion was significant. Bison availability dropped precipitously with increased hunting by native people and Euroamericans beginning around 1800, so much so that bison were virtually extinct by 1870. Without bison, a society reliant upon them needed to find a replacement or to change their reliance structure. While there seems to have been an awareness of the depletion of bison numbers, native people and Euroamericans appear to have escalated their hunting activity in response to market demand rather than to taken

conservation measures in the face of decreasing supply. This well-known “tragedy of the commons” [SB]--where each individual makes choices about a consuming a common resource which maximizes their own outcome but each individual's choices combine to overuse the resource--is not unique to the Plains: it has occurred more recently in the North Atlantic fisheries where over fishing caused fish stocks to plummet and world-wide with air pollution and global warming.³⁵⁵ It is no surprise that highly-dispersed hunters lacking modern science and communication methods would fail to recognize the magnitude of bison depletion until too late, thinking that the bison had just “moved.”

Along with environmental change, hostile neighbors may have played a role in ending nomadic society. Although Euroamerican and native relations were not always cordial, it is not clear that Europeans or Euroamericans conducted genocide on a large scale and, at least initially, disease transfer was an unintended by product of contact. As interracial tensions escalated in the mid-1800s, Euroamericans did take a more pro-active stance to removing Native Americans as Governor John Evans' rhetoric reflects. “Hostile neighbors” could have been a factor in nomadic collapse. Intra-tribal warfare for bison hunting areas and horses created hostile neighbors within the nomadic society as well.

Early Europeans and Euroamericans provided “friendly trade partners, but at a cost as mentioned earlier. Reliance upon trade reduced the independence of a nomadic life way and created societies that could not exist without trading partners.

Finally, what was the nomadic society's response to deteriorating conditions for their lifeway on the Plains? Critically, as mentioned, bison hunting was not reduced further decreasing bison populations, intra-tribal tensions escalated resulting in fewer warriors to provide food and protection, and the society continued to function as independent groups losing much leverage that could have come from stronger alliances.³⁵⁶ Hindsight is twenty-twenty, so it easy in retrospect to say this or that would have preserved the nomadic groups. But is it realistic to expect nomadic groups in the throes of upheaval due to population loss, interracial pressure, and bison reduction to embrace the Euroamerican concepts of individual land ownership, sense of place, and animal husbandry? Probably not.

The previous few paragraphs show that potentially a combination of factors--disease, environmental damage, and hostile neighbors--contributed to the decline of the hunting and gathering lifeway on the Plains. The explanation contains significant speculation about what “could” and “might” have occurred on the central Plains and along the Poudre. To substantiate any of this explanation better information needs to become available. Historic knowledge is particularly lacking in two areas. First, the archaeological record along the river is spotty. A thorough survey along the corridor could provide much better insight into what native activities actually took place along the river. Materials from previously excavated sites should be considered for re-analysis using modern techniques--such as AMS radiocarbon dating which requires only a gram of material--to refine and update previous interpretations. Since most native camps were situated on uplands rather than river bottoms, the river should be considered as an element of the larger landscape and survey and excavation should extend to these areas. Upland camps were likely a way to avoid flooding, to escape mosquitoes or to catch a breeze during the hot summers while locating near the river also provided access to water, wood, and hunting. Winter camps in wooded areas near the river provided fuel and shelter from winter winds with ready access to upland hunting areas. The uplands and river together provide a beneficial landscape that either in isolation would not. The river is also a product

of its proximity to the mountains and a user of the river environment is likely also a user of mountain resources. Additional archeological investigation could help reveal the interrelation of these landscapes.

Second, reliance on the historic record is problematic when the people being written about are not involved in the writing. Even though no Native groups are currently situated in the Poudre area, a research project to track down oral traditions, vocabulary, and folk tales from past occupants could be highly informative.

Finally, these actions should be taken soon; on-going development in northern Colorado and along the Poudre River is a fact of life. Potential loss of historic knowledge will not be a sufficient deterrent to halt the bulldozers. Community support of conservation efforts such as the protection of the Lindenmeier site at Soapstone Ranch in Fort Collins and the Kaplan-Hoover site at River West in Windsor shows that the public values and wants to protect these resources.

Appendix - Archaeological survey details

This appendix takes a closer look at the nature of the archaeological sites recorded in Larimer and Weld counties based on a February 2006 search of the Colorado Office of Archaeology and Historic Preservation database. Figure A.1 shows site break down by time period. Many sites had multiple time attributions showing site reuse over time. Figure A.2 shows the site break down by type of site. Most of the “sites” are seen to isolated finds although open lithic (a site with multiple pieces of stone tool debris) and open camp sites in combination are almost as frequent. Here, too, a pattern of multiple use of sites is seen since all strictly Euroamerican content sites were removed (barbed wire, glass ware, concrete, ditches, railroad, transmission line, etc). The chart shows a high number of trash dumps and historic sites that were created by Euroamericans.

<Fig A.1> Figure A.1. Site breakdown

<Fig A.2> Figure A.2. Type of site bar chart

Figure A.3 shows the distribution of sites by township/range designation. The cells are shaded by whether the number of sites in the block is smaller than the average -20 ± 1 sites assuming a block is about 100 sq. km. Bold numbers show the cells that contain the Poudre River. The highest number in any of the cells is 179 (at T8N, R61W) near Stoneham, an area that has seen significant archaeological investigation by the Robert Brunswig and the University of Northern Colorado. Other well surveyed areas include the Pawnee Grasslands (T8N-T10N, R63W-R66W), Rocky Mountain National Park (T4N-T7N, R73W-R74W), the confluence of the Poudre and North Poudre (T8N, R70W), and the Box Elder drainage (T9N-T12N, R70W). Looking at these areas, it seems that when an area gets surveyed we find a lot of sites. It can also be seen that the river corridor has only one block with an above average number of sites. This block happens to be the one in which a good chunk of Fort Collins sits. Construction activity is likely exposing these sites. Looking at this picture at arms length, large patches of green correspond to areas of prior survey work with a lot of yellow in between. Clear patterns such as the west half of the picture (mountain area) with lots of sites and the east (plains area) without, or lots of sites along drainages and none on the uplands, do not appear. Generally, all areas of Larimer and Weld county have seen use by people in the past and these people have left visible indications of that usage.

<Fig A.3> Figure A.3 A grid chart showing township and range numbers

Summarizing what these three pictures suggest in aggregate:

- ⊙ People have left evidence of their use of Larimer and Weld counties for over 12,000 years and the evidence has accrued at a on-going rate.
- ⊙ Occupation has been distributed across the counties, and because the sites are mostly isolated finds and small camps was probably of a short-term nature.
- ⊙ Since most sites can't be assigned to a particular culture group based on what they left behind, it may mean that how they used Larimer and Weld counties didn't change much over time or space.

Looking in more detail at the sites that have been recorded within the Heritage Area (sections within

two miles of the river) revealed a total 157 sites, of which 47 could potentially be assigned to Native American occupants. Like the larger county data set, most of the sites were isolated finds (16) or open camps (14). Two burials, two kill sites, and 1 petroglyph site were also found in the corridor. Cultural assignments included Agate Basin, Plano, and Archaic so the majority of sites had no time context association. If the search is narrowed to within a mile of the river, only 27 sites are recorded in a 200 sq. k. (76 sq mi.) area giving a site density of 0.14 sites/sq km - a density well in line with areas that have not been surveyed.

One useful cultural resource surveys was conducted just west of the Heritage area in 1988 by Zier (Grant et al. 1988). It covered the Cache la Poudre River drainage west and north of Fort Collins' North Taft Hill Road and Highway 14, overlapping the west end of the Heritage Area. Zier's was a two part study, a background investigation of 82 square miles and an intensive field survey of about 10 square miles along the river.³⁵⁷ A total of 39 recorded sites were found during the background investigation of which 25 were prehistoric (non Euroamerican). During the field survey 29 new sites were found plus one previously recorded site, 20 of these were prehistoric. Eighteen isolated finds (IF) were noted of which eight were prehistoric. Seven of the 59 sites were deemed eligible for inclusion in the National Register of Historic Places (NRHP) and possible mitigative action (FN6). The background survey indicated an archaeological site density for prehistoric sites of 25 sites / 205 sq. km (82 sq. miles) or 0.12 sites/ sq. km. This number is fairly close to the overall estimate for Larimer and Weld counties and very close to the site density found along the lower Poudre. More intensive survey along the rivers indicated a density of 28 sites (20 sites + 8 IFs) / 25 sq. km (10 sq. miles) or about 1.12 sites / sq. km. If Zier's results are typical, that survey increases the number of known sites by a factor of 10, then there are many unknown sites along the lower Poudre.

Glossary

Armored

A condition where normal stream flow is no longer powerful enough to move the rocks in the stream bed.

Archaeological site

The location of a significant event, a prehistoric or historical occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historical, cultural, or archaeological value regardless of the value of any existing structure. (CHS)

Archaeological culture

A culture defined by its material remains. An archaeological culture may have little correlation to anthropologic cultures which are defined by language, religion, kinship systems, art, technology, geography, etc. (TB)

Artifact

An artifact is a portable object manufactured or modified by humans. (CHS)

Artiodactyls

Unidentifiable member of the deer family such as mule deer or white-tailed deer.

Assemblage

All the artifacts, features, and other physical evidence (plant remains, animal remains, etc) found at an archaeological site. (TAL)

Atlatl

Spear thrower, generally made of wood used to provide improved leverage when throwing a spear

Biface

A lithic form worked on both sides. (TAL)

Bride wealth

The gift of money or presents to the bride's family by the groom.

Canid

Unidentified member of the dog family such as a domesticated dog, a wolf, or a coyote.

Chinook

A warm, dry westerly wind found on the eastern slope, also known as a foehn wind

Chronology

A sequence of events or time periods.

Component

A single instance of use of an archaeological site. (CHS)

Core

The block of raw material from which flakes are removed during lithic manufacture. A core is discarded when no more useful flakes (tools) can be produced from it. It then becomes a waste core. (TAL)

Debitage

The waste flakes or "chips" of lithic manufacture. Most of the material in a lithic scatter is debitage. (TAL)

Dendrochronology

A dating technique that looks at the variation in tree ring widths to determine the age of a piece of wood. The method works best for trees whose growth rates vary with amount of available moisture. Thicker rings indicating wetter years that can be correlated with climate data.

Diagnostic artifact

An artifact that is characteristic of a specific time period and/or culture. (CHS)

Differential preservation

The idea that different objects exposed to different conditions, decompose at different rates. For example, a straw basket left out-of-doors to be exposed to rain, snow, wind, and animals will become broken and rotten within a few months while that same basket left in a dry, cool cave can remain intact for thousands of years.

Dog-nomad

A nomadic group that uses dogs for material transport either with traction using travois or packs.

Ecotone

A large area comprised of related ecological communities, for example the Great Basin is an ecotone.

Ephemeral

Intermittent or short lived.

Epochs

Large-scale geological time divisions.

Era	Period	Epoch	Start (mya)
			11,000
			yrs
			2 mya
			12
			26
			37
		Eocene	53
			65
			225
			570

Escarpment

A scrape face that runs for a considerable distance. Escarpments often present significant barriers to travel. Escarpment features are often described as "rims" or given the name rim.

Ethnohistory

A cultural and/or historical study of an ethnic group as a whole or some aspect of it that is characterized by the use of written records based upon an anthropological approach. (MMW)

Ethnonym

The name a group calls itself in its own language.

Exonym

The name a groups is called by others outside the group.

Extant

Still existing, not extinct.

Extinct

No longer living. Local extinction can occur when a species no longer lives in a area it once did.

Feature

A feature is a non-portable object manufactured or modified by humans. Examples include hearths, game drive lines, storage pits, rock art, and stone circles. (CHS)

Fecundity

The ability to produce numerous offspring.

Fertility

The ability to reproduce.

Flake

A relatively thin fragment of stone produced during tool making by striking a core. (TAL)

Forb

Non-woody plants excluding grasses (i.e. broad-leafed plants).

Fluting

The removal of a half-pipe shaped flake from the face of a projectile point that narrows the thickness of the base and may improve hafting onto a shaft.

Fluviatile

Sedimentary deposits created by river action.

Hammer stone

A stone used with a striking type motion.

Hematite

A soft mineral form of iron oxide, noted for its red color and used as a pigment.

Herb

A plant whose above ground parts die back each year.

High Plains

The western section of the Great Plains physiographic province which is higher in elevation than the eastern portion of the Great Plains

Historical archaeological resources

It is difficult to clearly define what constitute a historical archaeological site. In general, a historical archaeological site is a location with remains from the historic period that can be studied using archaeological techniques. These sites often have artifacts and indications of *in situ* subsurface remains. In Colorado the historic period begins with the early European contact with native peoples. (CHS)

Horse-nomad

A nomadic group that uses horses for material transport either with traction using travois or packs.

Horticulturalists

A group that procures at least some of its food by non-mechanized cultivation.

Hunter-gatherers

A group that procures food and other resources by hunting animals and gathering plants. They may be sedentary or nomadic.

IF, Isolated find

An archaeological site known as an isolated find, a single projectile point or fragment for example.

Incise

The down cutting of a flood plain by the erosion action of a river.

in situ

"in place", the finding of an artifact in its exact location of deposit

Intrusion

In an archaeological site, an object that was deposited in one layer but is found in another. Object can move vertically and horizontally due to water flow, frost heave, etc.

Lancelate

A projectile point that is much longer than it is wide,.

Lifeways

The generalized combination of activities a group undertakes to insure sufficient food, protection, clothing, etc for survival and propagation. Several common lifeways are hunting-gathering where the group procures food through hunting and plant gathering; another is horticulture where plants are deliberately grown and cultivated.

Lithic

A fancy name for rock, most often used when human modification has occurred. A lithic scatter is a scattering of debris from stone tool making

Mano

A handheld grinding stone.

Metate

A solid surface against which a mano is pushed to grind grain, seeds, or pigments. A metate may be portable or part of a bedrock surface.

Midden

An archaeological trash pile.

Middle Missouri Villages

Upper and Middle Missouri are terms used synonymously to represent the villages along the Missouri River between the White River in South Dakota to western North Dakota border.

mya

Geologic time measurement, million(s) of years

Nomadism

A group which moves with the cycles of resource availability. (TB)

Moving residence with changes in local resource availability--be it lack of water, lack of bison, or harsh weather conditions.

NPS

United States National Park Service

NRHP

National Registry of Historic Places, a program administered by the U.S. National Park Service

OAHP

Colorado Office of Archaeology and Historic Preservation

Paleo

A prefix used to indicate very old or ancient

PHA

Poudre Heritage Alliance, a non-profit community based organization responsible for management of the Cache la Poudre River National heritage area in Larimer and Weld counties.

Physiographic province

A geographic region with common geological structure and landforms

Polygyny

A marriage of one man to more than one woman simultaneously

Prehistoric archaeological resources

Prehistoric archaeological resources include remains from human activities prior to written records. In Colorado, these sites date to the time before sustained European contact with Native American populations. European contact occurred at different times across the state but generally took place between the early 1700s and approximately 1840. The prehistoric archaeological resources range from large habitation complexes, such as those found at Mesa Verde, to

an isolated stone flake on the eastern plains. (CHS)

Projectile point

A sharpened piece of material (stone, glass, or metal) which is intended to be used by attachment to a shaft (arrow or spear) and used by being thrown or shot.

Protohistoric

The time period immediately before the Historic era; before European contact.

Riparian zone

The ecological niche located immediately adjacent to a stream. This area is populated by plants, animals, birds, and insects which are reliant on the moist environment of the stream side.

Scapula

The shoulder blade bone.

Scarp

A steep slope or cliff.

Sherd

A fragment of a broken ceramic vessel (TAL)

Shrub

A woody plant with many rather than a central stem, usually low growing

Smithsonian trinomial system

A unique number assigned to a site that includes a state numerical designation (Colorado is #5), a two-letter designation for the county (LR for Larimer and WL for Weld), and a sequential number for the site. (CHS)

Stemmed

A projectile point with a distinctive area for hafting which is narrower than the widest portion of the point. The stem may be distinguished from the body by a shoulder or by notches. The edges of the stem are often blunted to prevent cutting through hafting materials.

Steppe

Grassland environment which receives less than 24 inches (10 cm) of rain per year and grasses reach less than 3 feet (1 m) in height. Grasses are sparse enough to leave exposed soil between the plants. Shrubs but not trees are present.

Stone circle

A man-made ring of rocks. These rings are often although not always the result of a tipi camp. Other uses include hearth rings and ceremonial features. Tipi rings are generally distinguished by rings of a specific size range.

Taxonomy

A hierarchical form of classification based on an ordered set of distinctions or oppositions (TAL)

Teepee (or tipi)

A hide or cloth covering designed to be laid over a conical framework of poles to provide shelter. A tipi is distinguished from simpler constructions by the hide or cloth being sewn into a single half circular piece and the presence of ears and a smoke hole where the poles protrude.

Teepee ring

The ring of rock left after a tipi has been removed. The rocks were used to hold down the skirt of the tipi to keep wind and weather out. Rings may have more stones on the side with the prevailing wind and fewer stones at the tipi entrance.

Type site

A site that has many of the material culture attributes associated with a cultural group. The first site identified with a given cultural group may be designated as the type site, even though subsequent research finds better examples.

Tragedy of the commons

A term from ecology referring to the tendency of individuals to make decisions that maximize their personal benefit but collectively are destructive. Based on the example of farmers grazing their cattle on common (shared) pasture. Since each farmer determines how many cows they will graze, and if grazing more cows means more income, then each farmer will increase his/her herd. If all farmers do this, the common area will quickly become over grazed and inadequate for grazing any cows. Fishing and logging are other examples of over-use of a common resource.

Sources

TB - Binnema, *Common and Contested Ground*.

CHS - Colorado Historical Society, *Colorado Cultural Survey Manual*.

TAL - Banning *The Archaeologist's Laboratory*.

MMW - Wedel and DeMallie, "Ethnohistorical Approach."

References Cited

Published Sources

Anthropology Update

2004 Dr. Jeff Eighmy and his bid to preserve Kaplan-Hoover site. Spring 2004. Colorado State University, Department of Anthropology. Electronic document, accessed July 20, 2006. <http://www.colostate.edu/depts/anthropology>.

Arnold, Samuel P.

1983 William Bent. In *Trappers of the Far West*, edited by LeRoy R. Hafen, pp. 218-241. University of Nebraska Press, Lincoln.

Bamforth, Douglas B.

1988 *Ecology and Human Organization on the Great Plains: Interdisciplinary Contribution to Archeology*. Plenum Press, New York.

Banks, Kimball M., and J. Signe Snortland

1995 Every Picture Tells a Story: Historic Images, Tipi Camps, and Archaeology. *Plains Anthropologist* 40(152):125-144.

Banning, E.B.

2000 *The Archaeologist's Laboratory: The Analysis of Archaeological Data*. Kluwer Academic / Plenum Publishers, New York.

Benson, Maxine, editor

1988 *From Pittsburgh to the Rocky Mountains, Major Stephen Long's Expedition 1819-1820*. Fulcrum, Golden, Colorado.

Binnema, Theodore

2001 *Common and Contested Ground, A Human and Environmental History of the Northwestern Plains*. University of Oklahoma Press, Norman.

Berthrong, Donald J.

1972 *The Southern Cheyennes*. Reprinted. University of Oklahoma Press, Norman. Originally published 1963, University of Oklahoma Press.

Black, Kevin D.

1997 OSAC Field Investigations in Colorado, 1991-1995. *Southwestern Lore* 63(3):1-36.

Brasser, Ted J.

1982 The Tipi as an Element in the Emergence of Historic Plains Indian Nomadism. *Plains Anthropologist* 27(98/1):309-321.

Breternitz, D.A., A.C. Swedlund, and D.C. Anderson

1971 An Early Burial from Gordon Creek, Colorado. *American Antiquity* 36:170-182.

Brett, John A.

2003 *Ethnographic Assessment and Documentation of Rocky Mountain National Park*. National Park Service, Denver.

Brewer, William H.

1992 *Rocky Mountain Letters by Professor William H. Brewer, 1869*. 2nd ed. James D. Houston, Gunnison, Colorado. Originally published 1930 as *Rocky Mountain Letters*, Colorado Mountain Club.

Brinks, Rose L.

1987 *From Provost to Brinks, 129 Years of History*. Self published.

Brunswig, Robert H., Jr.

1996 *Paleoenvironmental and Cultural Change in Northeastern Colorado's Late Archaic Through Middle Ceramic*

Periods. Unpublished Ph. D. Dissertation, University of Colorado, Boulder.

1990 Excavations at Echo Cave: An Initial Report on UNC Archaeological Research in the Northern Colorado Foothills. *Southwestern Lore* 56(4):20-36.

Buchholtz, Curt W.

1983 *Rocky Mountain National Park: A History*. Colorado Associated University Press, Boulder.

Butler, William B.

2005 *Historic Archaeology of Rocky Mountain National Park*. In press.

1997 Cultural and Climatic Patterns in the Faunal Record from Western Plains Archaeological Sites. *Southwestern Lore* 64(4):1-36.

Callaway, Donald, Joel Janetski, and Omer C. Stewart

1986 Ute. In *Handbook of North American Indians*, Vol. 11, edited by W. L. D'Azevedo, pp. 336-367. Smithsonian Institution, Washington, D.C.

Carlson, Paul H.

1998 *The Plains Indians*. Texas A & M University Press, College Station.

Carter, Harvey L.

1982a Kit Carson. In *Mountain Men & Fur Trappers of the Far West*. edited by LeRoy R. Hafen, pp. 166-192. University of Nebraska Press, Lincoln.

1982b William H. Ashley. In *Mountain Men & Fur Trappers of the Far West*. edited by LeRoy R. Hafen, pp. 79-90. University of Nebraska Press, Lincoln.

Cassells, E. Steve

1997 *The Archaeology of Colorado*. Johnson Publishing, Boulder, Colorado.

Chenault, Mark L.

1999 Introduction. In *Colorado Prehistory: A Context for the Platte River Basin* by Kevin P. Gilmore, Marcia Tate, Mark Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 1-5. Colorado Council of Professional Archaeologists, Denver.

1999 Paleoindian Stage. In *Colorado Prehistory: A Context for the Platte River Basin* by Kevin P. Gilmore, Marcia Tate, Mark Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 51-90. Colorado Council of Professional Archaeologists, Denver.

Chittenden, Hiram M., and Alfred Talbot Richardson

1969 *Life, Letters, and Travels of Father De Smet*, 4 vols. Arno Press, New York. Originally published 1904, Harper, New York.

Clark, Bonnie

1999 The Protohistoric Period. In *Colorado Prehistory: A Context for the Platte River Basin* by Kevin P. Gilmore, Marcia Tate, Mark Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 309-355. Colorado Council of Professional Archaeologists, Denver.

Clements, Josephine P.

1989 *Sam Deon-Eliza Gardner Cabin, Laporte, Colorado 1858-1989*. Historic Markers Committee, Cache La Poudre Chapter of the Daughters of the American Revolution.

Coel, Margaret

1981 *Chief Left Hand: Southern Arapaho*. University of Oklahoma Press, Norman.

Colorado, Department of Local Affairs

2001 *Land Area of Counties in Colorado, including Broomfield, Excel file*. Electronic document accessed April 26,

2006. <http://dola.colorado.gov/demog/GIS/GeoTables.htm>

Colorado Historical Society

2005 *Colorado Cultural Survey Manual: Guidelines for Identification: History and Archaeology. Vol. 1: The Steps.* Office of Archaeology and Historical Preservation, Colorado Historical Society, Denver.

Colorado, Office of Archaeology and Historic Preservation

2006 *Directory of Colorado State Properties - Larimer County.* Electronic Document accessed July 20, 2006. <http://www.coloradohistory-oahp.org/prgramareas/register/1503/cty/lr.htm>.

Crum, Sally

1996 *People of the Red Earth: American Indians of Colorado.* Ancient City Press, Santa Fe, New Mexico.

DeMallie, Raymond J., editor

2001 *Handbook of North American Indians*, Vol. 13, Smithsonian Institution, Washington, D.C.

DeMallie, Raymond J.

2001 Sioux Until 1850. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 718-760. Smithsonian Institution, Washington, D.C.

Diamond, Jared

2005 *Collapse: How Societies Choose to Fail or Succeed.* Viking, New York.

1999

Guns, Germs, and Steel: The Fates of Human Societies. W. W. Norton, New York.

Dodge, Henry

1861 *Report on the Expedition of Dragoons under Colonel Henry Dodge to the Rocky Mountains in 1835.* American State Papers, Military Affairs, 6:130-146. Gales & Seaton, Washington.

Duncan, C.A.

c1920 *Memories of Early Days in the Cache La Poudre Valley.* Colorado Printing Co, Fort Collins, Colorado.

Ellwood, Priscilla B.

2002 *Native American Ceramics in Eastern Colorado.* Natural History Inventory of Colorado, 12. University of Colorado Museum, Boulder.

Evans, Howard Ensign, and Mary Alice Evans

1991 *Cache La Poudre: The Natural History of a Rocky Mountain River.* University Press of Colorado, Boulder.

Ewers, John C.

1955 *The Horse in Blackfoot Culture: With Comparative Materials from Other Western Tribes.* Bureau of American Ethnology Bulletin, 159. Smithsonian Institution, Washington D.C.: Government Printing Office.

Fitzgerald, James P., Carron A. Meaney, and David M. Armstrong

1994 *Mammals of Colorado.* University Press of Colorado, Niwot.

Flores, Dan

1991 Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850. *Journal of American History* 78(2):465-485.

Foster, Morris W., and Martha McCollough

2001 Plains Apache. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 926-940. Smithsonian Institution, Washington, D.C.

Fowler, Loretta

2001 Arapaho. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 840-862. Smithsonian Institution, Washington, D.C.

- 2001 History of the United States Plains Since 1850. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 280-299. Smithsonian Institution, Washington, D.C.
- Fraser, Clayton B., and Jennifer H. Strand
1997 *National Register of Historic Places Multiple Property Documentation Form: Railroads in Colorado, 1858-1948*. Fraserdesign, Loveland, Colorado.
- Fremont, John C.
1988 *The Exploring Expedition of the Rocky Mountains*. Smithsonian Institution Press, Washington DC. Originally published 1845.
- Fry, Norman W.
1955 *Cache La Poudre "The River."* Unknown publisher.
- Galloway, Patricia
1991 The Archaeology of Ethnohistorical Narrative. In *Columbian Consequences, Volume 3. The Spanish Borderlands in Pan-American Perspective*, edited by David Hurst Thomas, pp.453-469. Smithsonian Institution, Washington DC
- Gates, Zethyl
1981 *Mariano Medina, Colorado Mountain Man*. Johnson Publishing, Boulder, Colorado.
- Geffs, Mary L.
1938 *Under Ten Flags: A History of Weld County, Colorado*. McVey Printery, Greeley, Colorado.
- Gilmore, Kevin P.
1999 Late Prehistoric Stage. In *Colorado Prehistory: A Context for the Platte River Basin* by Kevin P. Gilmore, Marcia Tate, Mark Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 175-308. Colorado Council of Professional Archaeologists, Denver.
- Goetzmann, William H.
1991 *Army Exploration in the American West, 1803-1863*. Texas State Historical Association, Austin.

1966 *Exploration and Empire*. Alford A. Knopf, New York.
- Goodman, George J., and Cheryl A. Lawson
1995 *Retracing Major Stephen H. Long's 1820 Expedition: The Itinerary and Botany*. University of Oklahoma Press, Norman.
- Grant, Marcus P, Christian J. Zier, and Robert G. Rosenberg
1988 *Supplemental Report: Cultural Resource Investigations in Stage One Areas of the Basin Study Extension, Cache La Poudre Water and Power Project, Larimer County, Colorado*. Centennial Archaeology, Fort Collins, Colorado for EnviroSphere Company, Bellevue, Washington.
- Gray, John S.
1978 *Cavalry and Coaches: The Story of Camp and Fort Collins*. Old Army Press, Fort Collins, Colorado.
- Gray, John S., editor
1976 *The Poudre River*. Gro-Pub Group, Denver Colorado.
- Grinnell, George Bird
1972 *The Cheyenne Indians: Their History and Ways of Life*, 2 vols. University of Nebraska Press, Lincoln.

1906 Some Cheyenne Stream Names. *American Anthropologist* 8(1):15-25.
- Gunnerson, James H.
2001 Plains Village Tradition: Western Periphery. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 234-244. Smithsonian Institution, Washington, D.C.

- 1987 *Archaeology of the High Plains*. Cultural Resource Series No. 19, Bureau of Land Management, Denver, Colorado.
- Gunnerson, James H., and Dolores A. Gunnerson
1988 *Ethnohistory of the High Plains*. Cultural Resource Series 26, U.S. Bureau of Land Management, Denver.
- Hafen, LeRoy R., editor
1983 *Trappers of the Far West*. University of Nebraska Press, Lincoln.
- 1982 *Mountain Men & Fur Trappers of the Far West*. University of Nebraska Press, Lincoln.
- Hafen, LeRoy R.
1973 *Broken Hand, The Life of Thomas Fitzpatrick: Mountain Man, Guide, and Indian Agent*. Reprinted. The Old West Publishing Company, Denver, Colorado. Originally published 1931, The Old West Publishing Co., Denver, Colorado.
- Hafen, LeRoy R., and Ann W. Hafen
1982 Thomas Fitzpatrick. In *Mountain Men & Fur Trappers of the Far West*. edited by LeRoy R. Hafen, pp. 236-251. University of Nebraska Press, Lincoln.
- Haines, Francis
1938 The Northward Spread of Horses Among the Plains Indians. *American Anthropologist* 40:429-437.
- Hansen, Wallace R., John Chronic, and John Matelock
1978 *Climatography of the Front Range Urban Corridor and Vicinity, Colorado*. Geological Survey Paper 1019. U.S. Department of the Interior, USGS, Washington, D.C.
- Harrington, H. D.
1972 *Western Edible Wild Plants*. University of New Mexico Press, Albuquerque.
- 1967 *Edible Native Plants of the Rocky Mountains*. University of New Mexico Press, Albuquerque.
- Hart, Jeff
1992 *Montana Native Plants and Early Peoples*. Montana Historical Society Press, Helena. Originally published 1976, Montana Historical Society and Montana Bicentennial Administration.
- Hendon, A. Willene
1984 *Horsetooth Mountain Park and Lory State Park: Natural Resource Inventory, History, and User Survey*. Unpublished Masters thesis, Department of Recreation Resources and Landscape Architecture, Colorado State University, Fort Collins.
- Henning, Elizabeth R. P.
1982 Western Dakota Winter Counts: an Analysis of the Effects of Westward Migration and Culture Change. *Plains Anthropologist* 27(95):57-65.
- Hoffmann, Leonore, and Margo Culley, editors.
1985 *Women's Personal Narratives: Essays in Criticism and Pedagogy*. Modern Language Association of America, New York.
- Hurt, R. Douglas
2002 *The Indian Frontier, 1763-1846*. University of New Mexico Press, Albuquerque.
- Hyde, George E.
1968 *Life of George Bent*. University of Oklahoma Press, Norman.
- 1959 *Indians of the High Plains: From the Prehistoric Period to the Coming of the Europeans*. University of Oklahoma Press, Norman.

- Irrigation and Water-related Structures in the Cache La Poudre River Corridor.
n.d. Unpublished manuscript for the Poudre Heritage Alliance, Fort Collins, Colorado.
- Jablow, Joseph
1994 *The Cheyenne in Plains Indians Trade Relations, 1795-1840*. University of Nebraska Press, Lincoln.
Originally published 1951, J.J. Augustine, Monographs of the American Ethnological Society: 19.
- Jacobsen, R. Brooke, and Jeffrey L. Eighmy
1980 A Mathematical Theory of Horse Adoption on the North American Plains. *Plains Anthropologist* 25(90):333-341.
- Johnson, James, R., and Gary E. Larson
1999 *Grassland Plants of South Dakota and the Northern Great Plains*. South Dakota State University, Brookings.
- Kavanagh, Thomas W.
2001 Comanche. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 886-906. Smithsonian Institution, Washington, D.C.
- Kay, Charles E., and Randy T. Simmons
2002 *Wilderness and Political Ecology*. University of Utah Press, Salt Lake City.
- Krysl, L, M.E. Hubbert, B.F. Sowell, G.E. Plumb, T. K. Jewett, M.A. Smith, and J.W. Waggoner
1984 Horses and Cattle Grazing in Wyoming Red Desert, I. Food Habits and Dietary Overlap. *Journal of Range Management* 37(1):72-76.
- Lafin, Rose
2005 *Irrigation, Settlement, and Change on the Cache la Poudre River*. Colorado Water Resources Research Institute Special Report 15, Colorado State University, Fort Collins, Colorado.
- Lauenroth, W.K., and D.G. Milchunas
1991 Short-grass Steppe. In *Ecosystems of the World, 8A: Natural Grasslands*, edited by R. T. Coupland, pp. 183-226. Elsevier, New York.
- Levine, Frances
1991 Economic Perspectives on the Comanchero Trade. In *Farmers, Hunters, and Colonists: Interaction Between the Southwest and the Southern Plains*, edited by Katherine A. Spielmann, pp. 155-169. University of Arizona Press, Tucson.
- Levy, Jerrold E.
2001 Kiowa. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 907-925. Smithsonian Institution, Washington, D.C.
- Livermore Woman's Club History Committee
1995 *Among These Hills: A History of Livermore, Colorado*. Double DJ Enterprises.
- Mangan, Terry William
1975 *Colorado on Glass: Colorado's First Half Century as Seen by the Camera*. Sundance Limited, Denver, Colorado.
- Martin, P.S., and C.R. Szuter
1999 War Zones and Game Sinks in Lewis and Clark's West. *Conservation Biology* 13(1):36-45.
- McClintock, Walter
1968 *The Old North Trail*. University of Nebraska Press, Lincoln. Originally published 1910.
- Moore, John H., Margot P. Liberty, and Terry Strauss
2001 Cheyenne. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 863-885. Smithsonian Institution, Washington, D.C.
- Murphy, James C.

1969 The Place of the Northern Arapaho in the Relations Between the United States and the Indians of the Plains 1851-1879. *Annals of Wyoming* 41(1):33-62.

1969 The Place of the Northern Arapaho in the Relations Between the United States and the Indians of the Plains 1851-1879. *Annals of Wyoming* 41(2):203-259.

Nabokov, Peter, and Lawrence Loendorf
2004 *Restoring a Presence: American Indians and Yellowstone National Park*. University of Oklahoma Press, Norman.

Niven, Laura B., Charles P. Egeland, and Lawrence C. Todd
2004 An Inter-site Comparison of Enamel Hypoplasia in Bison: Implications for Paleoecology and Modeling Late Plains Archaic Subsistence. *Journal of Archaeological Science* 31:1783-1794.

Peden, Donald George
1972 *The Trophic Relations of Bison bison to the Shortgrass Plains*. Unpublished Ph. D. dissertation, Colorado State University, Fort Collins.

Pelzer, Louis, editor
1926 Documents - Captain Ford's Journal of an Expedition of the Rocky Mountains. *Mississippi Valley Historical Review* 12(4):550-579.

Reff, D.T.
1992 Contact Shock in Northwestern New Spain. In *Disease and Demography in the Americas*, edited by John W. Verano and Douglas H. Ubelaker, pp. 265-276. Smithsonian Institution Press, Washington, D.C.

Roe, Frank G.
1970 *The North American Buffalo: A Critical Study of the Species in its Wild State*. University of Toronto Press, Toronto.

Roper, Donna C.
1994 A Note on the Quail and the Pawnee. *Plains Anthropologist* 39(147):73-79.

1992 Documentary Evidence for Changes in Protohistoric and Early Historic Pawnee Hunting Practices *Plains Anthropologist* 37(141):353-366.

1990 Artifact Assemblage Composition and the Hunting Camp Interpretation of High Plains Republican Sites. *Southwestern Lore* 56(4):1-19.

Sandweiss, Martha A.
2002 *Print the Legend: Photography and the American West*. Yale University Press, New Haven, Connecticut.

Sexton, Julie M.
1998 *Historical Changes in the Cache La Poudre River, Fort Collins, Colorado*. Unpublished Master's thesis, Colorado State University, Fort Collins, Colorado.

Shimkin, Dmitri B.
1986 Eastern Shoshone . In *Handbook of North American Indians*, Vol. 11, edited by W. L. D'Azevedo, pp.308-355 Smithsonian Institution, Washington, DC.

Shwayder, Carol Rein
1983 *Weld County - Old & New*, Vol. 1. Unicorn Ventures, Greeley, Colorado.

Simmons, Virginia McConnell
2000 *The Ute Indians of Utah, Colorado, and New Mexico*. University Press of Colorado, Boulder.

Speth, John D.
1991 Some Unexplored Aspects of Mutualistic Plains-Pueblo Food Exchange. In *Farmers, Hunters, and Colonists:*

Interaction Between the Southwest and the Southern Plains, edited by Katherine A. Spielmann, pp. 18-35. University of Arizona Press, Tucson.

Stannard, David E.

1991 The Consequences of Contact: Toward an Interdisciplinary Theory of Native Responses to Biological and Cultural Invasion. In *Columbian Consequences, Volume 3. The Spanish Borderlands in Pan-American Perspective*, edited by David Hurst Thomas, pp. 519-539. Smithsonian Institution, Washington DC.

Steinacher, Terry L., and Gayle F. Carlson

1998 The Central Plains Tradition. In *Archaeology on the Great Plains*, edited by W. Raymond Wood, pp. 235-268. University Press of Kansas, Lawrence.

Stewart, Frank Henderson

2001 Hidatsa. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 329-348. Smithsonian Institution, Washington, D.C.

Stewart, Omer C.

2002 *Forgotten Fires: Native Americans and the Transient Wilderness*. University of Oklahoma Press, Norman.

Stone, Tammy

2003 Social Islands in the Denver Basin. In *Islands on the Plains: Ecological, Social, and Ritual Use of Landscapes*, edited by M. Kornfeld, and Alan J. Osborn, pp. 245-257. University of Utah Press, Salt Lake City.

Sunberg, Wayne

2002 The Cache la Poudre Corridor: The Evolution of a Western River Landscape. Unpublished manuscript prepared for the Poudre Heritage Alliance, Fort Collins, Colorado.

Swagerty, William R.

2001 History of the United States Plains Until 1850. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 256-279. Smithsonian Institution, Washington, D.C.

Swan, Frank Herbert

1975 *Pleistocene and Holocene Deposits of the Lower Cache La Poudre River Basin, Colorado*. Unpublished Ph. D. Dissertation, John Hopkins University, Baltimore, Maryland. University Microfilms, Ann Arbor.

Swanson, Evadene Burris

1993 *Fort Collins Yesterdays*. George and Hildegard Morgan, Fort Collins, Colorado.

Tate, Marcia

1999 Archaic Stage. In *Colorado Prehistory: A Context for the Platte River Basin* by Kevin P. Gilmore, Marcia Tate, Mark Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 91-174. Colorado Council of Professional Archaeologists, Denver.

Tate, Marcia, and Kevin P. Gilmore

1999 Environment. In *Colorado Prehistory: A Context for the Platte River Basin* by Kevin P. Gilmore, Marcia Tate, Mark Chenault, Bonnie Clark, Terri McBride, and Margaret Wood, pp. 7-40. Colorado Council of Professional Archaeologists, Denver.

Thompson, Enid

1979 Life in an Adobe Castle, 1833-1849. In *Bent's Old Fort*, Colorado Historical Society, pp. 7-27. The State Historical Society of Colorado, Denver.

Thurman, Melburn D.

1988 The Little Missouri River: A Source of Confusion for Plains Ethnohistory. *Plains Anthropologist* 33(122):429-447.

Todd, Lawrence C., David C. Jones, Robert S. Walker, Paul C. Burnett, and Jeffery Eighmy

2001 Late Archaic Bison Hunters in Northern Colorado: 1997-1999 Excavations at the Kaplan-Hoover Bison

Bonebed (5LR3953). *Plains Anthropologist* 46(176):125-147.

Trenholm, Virginia Cole

1970 *The Arapaho, Our People*. University of Oklahoma Press, Norman.

Trimble, Michael K.

1992 The 1832 Inoculation Program on the Missouri River. In *Disease and Demography in the Americas*, edited by John W. Verano and Douglas H. Ubelaker, pp. 257-264. Smithsonian Institution Press, Washington, D.C.

Tucker, Gordon, C., Jr., Marcia J. Tate, Bill Tate, and Juston J. Fariello

2005 The Dismal River Complex in Eastern Colorado: A View from the Pinnacle Site (5PA1764). *Southwestern Lore* 71(2):1-31.

Ubelaker, Douglas H.

1992 North American Indian Population Size. In *Disease and Demography in the Americas*, edited by John W. Verano and Douglas H. Ubelaker, pp. 169-176. Smithsonian Institution Press, Washington, D.C.

Upham, Steadman

1992 Population and Spanish Contact in the Southwest. In *Disease and Demography in the Americas*, edited by John W. Verano and Douglas H. Ubelaker, pp. 223-226. Smithsonian Institution Press, Washington, D.C.

Voget, Fred W.

2001 Crow. In *Handbook of North American Indians*, Vol. 13, edited by Raymond J. DeMallie, pp. 695-717. Smithsonian Institution, Washington, D.C.

Wanner, J., and R.H. Brunswig, Jr.

1992 A Late Archaic Skeleton from the Northeastern Colorado High Plains. *Plains Anthropologist* 37(141):367-384.

Waters, Michael R.

1992 *Principles of Geoarchaeology: A North American Perspective*. The University of Arizona Press, Tucson.

Watrous, Ansel

1976 *History of Larimer County Colorado*. The Old Army Press, Fort Collins, Colorado. Originally published 1911, The Courier Printing and Publishing Company, Fort Collins, Colorado.

Wedel, Mildred Mott, and Raymond J. DeMallie

1980 The Ethnohistorical Approach in Plains Area Studies. In *Anthropology on the Great Plains*, edited by W. Raymond Wood and Margot Liberty, pp. 110-128. University of Nebraska Press, Lincoln.

Wedel, Waldo R.

1986 *Central Plains Prehistory*. University of Nebraska Press, Lincoln.

Weist, Katherine M.

1980 Plains Indian Women: An Assessment. In *Anthropology on the Great Plains*, edited by W. Raymond Wood and Margot Liberty, pp. 255-271. University of Nebraska Press, Lincoln.

West, Elliott

1998 *The Contested Plains: Indians, Goldseekers, and the Rush to Colorado*. University Press of Kansas, Lawrence.

Whitacre, Christine, and R. Laurie Simmons

1991 *National Register of Historic Places Multiple Property Documentation Form: Historic Farms and Ranches of Weld County*. Front Range Research Associates, Denver, Colorado.

Whitson, Tom, D., Larry C. Burrill, Steven A. Dewey, David W. Cudney, B. E. Nelson, Richard D. Lee, and Robert Parker

2001 *Weeds of the West, revised edition*. Western Weed Society, Newark, California.

Wislizenus, Frederick A.

1969 *A Journey to the Rocky Mountains 1839*. Rio Grande Press, Glorieta, New Mexico.

Wohl, Ellen E.

2001 *Virtual Rivers*. Yale University Press, New Haven Connecticut.

Wood, W. Raymond

1980 Plains Trade in Prehistoric and Protohistoric Intertribal Relations. In *Anthropology on the Great Plains*, edited by W. Raymond Wood and Margot Liberty, pp. 98-109. University of Nebraska Press, Lincoln.

Wood, W. Raymond, and Thomas D. Thiessen

1985 *Early Fur Trade on the Northern Plains*. University of Oklahoma Press, Norman.

Newspapers and Magazines

The Economist

2006 Placing Names, 17-23 June: 89.

Evans, Governor John

1864 Appeal to the People. 10 August:2. *Rocky Mountain Weekly News*, Denver, Colorado.

Fort Collins Courier

1972 XXX. 19 April:6. Fort Collins, Colorado.

1938 XXX. 15 April:5.

1883 Judge A. F. Howes. 1 February:1.

Leonard, Stephen J.

1974 Bovines and Vandals Hinder the greening of the Plains. *Colorado Country Life*, April 1974. Colorado Rural Electric Association.

Nelson, Mike

2006 Weather Center: Why It Never Seems to Snow in Fort Collins. 25 January:38. *Fort Collins Weekly*, Fort Collins, Colorado.

Rocky Mountain News

1868 Sioux camp at Laporte. 20 May:4. Denver, Colorado.

Senior Voice

198/2 XXX. 29 September:20. Fort Collins, Colorado.

Zaffos, Joshua

2005 Homecoming. 8 December:14-16. *Rocky Mountain Bullhorn*, Fort Collins, Colorado.

Maps and Illustrations

Bureau of the Corps of Topographical Engineers

1850 *Map of the United States and their Territories Between the Mississippi and Pacific Ocean, and part of Mexico*. Electronic document. Digitized Kansas Map Collection, Wichita State University Libraries- Department of Special Collections. <http://specialcollections.wichita.edu/collections/maps>, call number 1850-0003. Accessed 3/31/2006.

Colorado, Department of Local Affairs

n.d.a. *Colorado Counties Map*, JPEG file. Electronic document accessed April 26, 2006. <http://dola.colorado.gov/demog/GIS/MapGallery.htm>

n.d.b. *Colorado Terrain Grey Scale Shaded Relief Map*, JPEG file. Electronic document accessed April 26, 2006. <http://dola.colorado.gov/demog/GIS/MapGallery.htm>

du Lac, Perrin
1802 *Carte du Missouri: Levee ou Rectifiee Dans Toute son Etendue*. Electronic document, U.S. Library of Congress, <http://hdl.loc.gov/loc.gmd/g4052m.ct001127>. Accessed 2/24/2006.

Fremont, John Charles
1845 *Map of an Exploring Expedition to the Rocky Mountains in the Year 1842 and to Oregon & North California in the Years 1843-44*. Electronic document, U.S. Library of Congress, <http://hdl.loc.gov/loc.gmd/g4051s.ct000909>. Accessed 2/24/2006. Originally published by the U.S. Senate, Washington, D.C., 1845.

Hayden, F.V.
1869 *Previously Unpublished Expedition Sketches by Henry W. Elliott united with the Preliminary Field Report of the U.S. Geological Survey of Colorado and New Mexico, 1869*. Electronic media, version 1.0 published 2003. USGS Open-File Report 03-384, U.S. Department of the Interior, Washington, D.C..

Hull, Arundel
c1867-1868 *Cache a la Poudre Valley Photo*. Denver Public Library, Denver, Colorado. Electronic image, call no. Z-5790.

King, Nicholas
1805 *A Map of part of the Continent of North America: Between the 35th and 51st Degrees of North Latitude and Extending from 89 Degrees of West Longitude to the Pacific Ocean*. Electronic document, U.S. Library of Congress, <http://hdl.loc.gov/loc.gmd/g3300.ct000586>. Accessed 3/31/2006.

Long, Stephen Harriman
1822 *Map of Arkansas and Other Territories of the United States*. Electronic document. Digitized Kansas Map Collection, Wichita State University Libraries- Department of Special Collections. <http://specialcollections.wichita.edu/collections/maps>, call number 1822-0002. Accessed 3/31/2006.

Scott, Glenn R., and Carol Rein Shwayder
1993 *Historic Trail Map of the Greeley 1 deg by 2 deg Quadrangle, Colorado and Wyoming* and accompanying booklet. USGS Miscellaneous Series, Map I-2326. U.S. Department of Interior, Denver, Colorado.

Steen, Lt. Enoch
1836 *[Dodge Expedition Route Map from Fort Leavenworth to the Rocky Mountains and Return]*. Electronic document. Digitized Kansas Map Collection, Wichita State University Libraries- Department of Special Collections. <http://specialcollections.wichita.edu/collections/maps>, call number 1836-0003.

United States Geological Survey

1982a *Eaton, Colorado 1:100 000-scale Metric Topographic Map*. USGS, Denver, Colorado.

1982b *Greeley, Colorado 1:100 000-scale Metric Topographic Map*. USGS, Denver, Colorado.

1980 *Fort Collins, Colorado 1:100 000-scale Metric Topographic Map*. USGS, Denver, Colorado.

Unknown

c1940 *Arapaho Council Tree*. Fort Collins Public Library Local History Archive, Fort Collins, Colorado. Electronic image, call no. H04423.

1880 *Friday*. Denver Public Library, Denver Colorado, Electronic image, call no. X-32424.

c1860-1868 *Bosse, Left Hand, White Wolf, Black Kettle, White Antelope, Bull Bear, Neva: Chiefs of Arapahoe, Sioux, Cheyenne & Kiowa Tribes*. Denver Public Library, Denver, Colorado. Electronic image, call no. X-32364.

Figure Captions

Figure 1. Relief map of present day Colorado showing counties, the cities of Fort Collins and Greeley, and the approximate location of the Cache la Poudre River Heritage Area. (Colorado Department of Local Affairs, *Colorado Counties*, and *Colorado Terrain*.)

Figure 2. Cache la Poudre River Heritage Area (Lafin, *Irrigation, Settlement, and Change*, 186).

Figure 3. Geophysical areas of northeastern Colorado (Tate and Gilmore, "Environment," 8).

Figure 4a. "Laporte on Cache la Poudre River, Colorado," a sketch by Henry W. Elliott made during the 1869 Hayden Geologic Expedition (Hayden, *Geological Survey of Colorado*).

Figure 4b. "Looking into the Valley of the Cache la [Poudre] from behind the Hog Backs," a sketch by Henry W. Elliott made during the 1869 Hayden Geologic Expedition (Hayden, *Geological Survey of Colorado*).

Figure 4c. "Foothills of the Rocky Mountains at Cache la Poudre, C.T. [Colorado Territory]," a sketch by Henry W. Elliott made during the 1869 Hayden Geologic Expedition (Hayden, *Geological Survey of Colorado*).

Figure 4d. "Looking toward Cache La Poudre from summit of Stevenson Hill Box Elder Creek, Colorado," C.T. [Colorado Territory]," a sketch by Henry W. Elliott made during the 1869 Hayden Geologic Expedition (Hayden, *Geological Survey of Colorado*).

Figure 5. Stone ring near Soapstone Springs in northern Larimer County, Colorado. Dashed line in lower photo shows approximate location of ring. (Photo by author)

Figure 6. Lithic projectile point styles and complexes typical of Larimer and Weld counties. Sizes are approximate. Within a stage, older styles are to the left, more recent styles to the right. Dashed lines indicate the point outline if broken portion was intact. (Cassells, *Archaeology of Colorado*, 78; Gilmore, "Late Prehistoric Stage," 176; Tate, "Archaic Stage," 96).

Figure 7. Location of culture and ethnic groups between AD1500 and 1875 in order mentioned in text.

Figure 8a (top) and b (bottom). Maps from 1802 (du Lac) and 1805 (King) showing the likely area of the Cache la Poudre (du Lac, *Carte du Missouri*; King, *Continent of North America*). Dashed circle indicates Cache la Poudre River area.

Figure 8c and d. Maps from 1822 (Long), 1835 (Dodge - Steen) showing the area of the Cache la Poudre (Long, *Map of Arkansas*; Steen, *Dodge Expedition*).

Figure 8e and f. Maps from 1845 (Fremont) and 1850 (U. S. Topo Engineers) showing the area of the Cache la Poudre / South Platte (Fremont, *Map of an Exploring Expedition*; Bureau of the Corps of Topographical Engineers, *Map of the United States*).

Figure 9. Sketches by Titian R. Peale made during the Stephen Long expedition of 1820. Clockwise from upper left: Flower sketch, August 3; Magpie watercolor, June 29; Bison hunt watercolor and ink, February; Bison, undated; Antelope, June 19 (Benson, *Major Stephen Long's Expedition*, 180, 266, and color plates).

Figure 10. Early photograph taken 1867-1868 near the Cache la Poudre by Arundel Hull. (Denver Public Library Photograph Collection).

Figure 11. Engraving of Chief Friday from 1880. (Published in *Harper's Monthly*, March 1880, p. 492, Denver Public Library Photographic Collection).

Figure 12. Group photo including Chief Left Hand (top center). In order from left: top row: Bosse, Left Hand, White Wolf; bottom row Black Kettle, White Antelope, Bull Bear, Neva (Left Hand's brother) taken between 1860-1861. (Denver Public Library Photographic Collection).

Figure 13. The Council Tree near Timnath, Colorado. The tree burned down in the early 1940s. (Fort Collins Public Library Local History Archive)

Figure A.1. Site breakdown, bar chart of sites chronologic period category in Larimer and Weld county. Time buckets are Paleoindian, Archaic, Ceramic, Prehistoric, Protohistoric, Historic, Euroamerican, and No Time Available. No Time Available means that no information was provided about the chronological time frame of the site. Count scale goes from 0 - 1800.

Figure A.2. Type of site bar chart. A pareto chart showing the frequency of occurrence of types of sites in Larimer and Weld counties. Bars: Isolated find (1300), Open lithic (600), Open camp (500), No entry (400), Historic (500), open architecture (200), plus other with fewer occurrences.

Figure A.3 A grid chart showing township and range numbers for Larimer and Weld counties. Each grid cell shows the number of sites within the township/range black and is color coordinated by whether the count is lower, average, or higher than the average (20 sites / km²). Cells contains the Poudre River have bold text. Greeley is located at T5N,R65-66W, and Windsor at T6N, R67W, and Fort Collins at T7N, R69W.

SB List

differential preservation

lithic: stone

physiographic province

million years ago

epochs: large-scale geological time divisions

escarpment

riparian zones: vegetation zone immediately along a stream

hunters and gatherers: people who live by hunting animals and gathering plant materials

dendrochronology: tree-ring dating

projectile points

lancelate: long and narrow, lance-like

hematite: a soft iron-oxide material ground for pigment, usually yellow or red

biface: a stone that has been shaped or worked on two opposite sides

intrusion: used in archaeology to mean an artifact deposited in one layer that works its way into another

scapula: shoulder blade bone

mano: hand held grinding stone

artiodactyls: any member of the deer family

ephemeral: short-lived

horticulture: non-mechanized agriculture

dog-nomad: nomads who use dogs for transport

middens: archaeological debris pile

ecotones:

polygyny: a man with more than one wife

bride wealth: money or gifts given to the brides parents by the groom

fertility: the ability to reproduce

fecundity: the ability to have many offspring

tragedy of the commons:

1

Notes:

Cache La Poudre River National Heritage Area web site, <http://www.nature.nps.gov/cachelapoudre>, accessed 4/7/2006; Laffin, *Irrigation, Settlement, and Change*. The Colorado system of water law known as “first in time, first in right” or “prior appropriation” was established in the Poudre valley. In prior appropriation systems, the individual who first uses water, say for irrigation, and continues to use it productively has water rights that are senior to all other users. In times of water shortage, senior rights are allocated water before junior rights are honored. Junior rights can go unfilled during dry years. Water rights are tangible assets in that they can be bought and sold.

Prior appropriation is the water law foundation for most of the western United States. In contrast, in the eastern part of the country a system of riparian rights is in place. In a riparian rights system, the person who owns the banks of the water course owns the rights to the water flowing in the water way. This system works adequately when there is always a sufficient amount of water to serve every one’s needs. In arid areas like the West, there is no guarantee of sufficient flow and water needs such as irrigation are often some distance from the water source. Prior appropriation, by shifting ownership to the water rather than the water way, established a new method to allocate water. It also meant that innovations in water management such as gauging and flow measurement needed to be developed to assure that water owners received their share of water and only their share. Many of these innovations were developed along the Poudre and are still part of the local landscape. In semi-arid environments like that found along the Poudre and many areas of the west, water allocation and delivery systems have been essential for survival and economic growth. Availability of water has been and continues to be a major factor in development of the West.

2 Other reports include Laffin, *Irrigation, Settlement and Change*, Sunberg, *Cache la Poudre Corridor*, and *Irrigation and Water-related Structures* (author unknown).

3 See for example Nabokov and Loendorf, *Restoring a Presence*.

4 Euroamerican is an American of European descent. Many of the early fur trappers in the West were actually Europeans - primarily French or British trappers out of Canada or the Far West.

5 Hendon, *Horsetooth Mountain Park*, 119; Gray, *Poudre River*, 27; USGS Maps 1980a, 1982a, and 1982b; and Watrous, *Larimer County*, 7, 29, 43, 57-58, 161, 165. During the 1860s General William Larimer was an early settler in Denver; Lewis L. Weld was the first Colorado Territorial Secretary; and Horace Greeley was the editor of the New York Tribune.

6 See Gunnerson and Gunnerson, *Ethnohistory* for an ethnohistory of the High Plains region.

7 This issue is described by Galloway, “Ethnohistorical Narrative,” 453-455, as follows:

“In evaluating a historical text, we must consider not only the obvious factor of intentional misrepresentation, but whether, first, it is possible in principle to represent any event at all in a way that is closely congruent with the facts; second, what form that representation should take; and third, whether a reader from subsequent reality might be capable of truthfully reconstructing the event on the basis of that representation (always assuming we know what “truthfully” means) ... Even if we grant that good ethnographic observations are possible in principle, conquerors and colonists were certainly not trained participant observers by any stretch of the imagination. Which is not to claim the no Colonial period observer observed truly or learned a great deal about contact with native peoples; for the moment we may also stipulate that there might be an ideal observer. But to use ethnohistoric narrative, we must recognize that we are dealing with what is now not an observation but a reported observation; not an experience, but a text describing it. If the information itself is potentially valuable, we must solve the problems raised by the form in which it reaches us.”

8 Swan, *Pleistocene and Holocene Deposits*, 11; Tate and Gilmore, “Environment,” 9.

9 Stone, “Social Island,” 245.

10 Brunswig, *Paleoenvironmental and Cultural Change*, 86.

11 Swan, *Pleistocene and Holocene Deposits*, 11-18.

12 Brunswig, *Paleoenvironmental and Cultural Change*, 87-88; Swan, *Pleistocene and Holocene Deposits*, 25

13 Hansen et al., *Climatography*, 54-56.

14 Binnema, *Common and Contested Ground*, 31.

15 Brunswig, *Paleoenvironmental and Cultural Change*, 87-88.

16 Nelson, “Weather Center,” 38.

17 Taxon lists in this and the following tables have been compiled from Brunswig, *Paleoenvironmental and Cultural Change*, 89-90; Evans and Evans, *Cache La Poudre*, 137; Fitzgerald et al., *Mammals of Colorado*; Hart, *Montana Native Plants*, 87; Johnson and Larsen, *Grasslands of South Dakota*, Swan, *Pleistocene and Holocene Deposits*, 26; and Whitson et al., *Weeds of the West*.

18 Binnema, *Common and Contested Ground*, 28.

19 Peden, *Trophic Relations of Bison bison*, 90-91.

- 20 Brunswig, *Paleoenvironmental and Cultural Change*, 89-91; Lauenroth and Milchunas, "Short-grass Steppe," 190-201.
- 21 Lauenroth and Milchunas, "Short-grass Steppe," 196.
- 22 Wohl, *Virtual Rivers*, 44-51.
- 23 Sexton, *Historical Changes*, iv.
- 24 Evans and Evans, *Cache La Poudre*.
- 25 Evans and Evans, *Cache La Poudre*, 137.
- 26 Evans and Evans, *Cache La Poudre*, 140.
- 27 Evans and Evans, *Cache La Poudre*, 111.
- 28 Evans and Evans, *Cache La Poudre*, 136.
- 29 Fremont, *Exploring Expedition*, 32.
- 30 Fremont, *Exploring Expedition*, 121-122.
- 31 Watrous, *Larimer County*, 26-28.
- 32 Watrous, *Larimer County*, 28-31.
- 33 Watrous, *Larimer County*, 30.
- 34 Watrous, *Larimer County*, 83.
- 35 Watrous, *Larimer County*, 35, 471.
- 36 Duncan, *Memories of Early Days*, 14.
- 37 Duncan, *Memories of Early Days*, 26, 45; Fremont, *Exploring Expedition*, 49.
- 38 Duncan, *Memories of Early Days*, 45; Geffs, *Under Ten Flags*, 244; Watrous, *Larimer County*, 52, 98, 114.
- 39 Watrous, *Larimer County*, 58.
- 40 Hansen et al., *Climatography*, 43.
- 41 Geffs, *Under Ten Flags*, 241.
- 42 Thompson, "Life in an Adobe Castle," 47.
- 43 Adapted from Chenault, "Introduction," Table 1.1.
- 44 The bow replaced the atlatl by at least AD 500 in Colorado according to Crum, *People of the Red Earth*, 64.
- 45 Binnema, *Common and Contested Ground*, 62, 74.
- 46 Colorado Department of Local Affairs, *Land Areas*.
- 47 Waters, *Principles of Geoarchaeology*.

48 Sites are diagnostic or informative if they provide information about the people who created them. The isolated find and the open lithic site are not very diagnostic in isolation. Generally, not much more can be interpreted from an isolated find than what is it and where it was found so they have limited interpretive value. They are, however, useful in the aggregate; for example, more than one researcher has looked at the distribution of projectile point [SB] types and counts across counties to give an approximation of large area use by different archaeological culture groups.

- 49 Chenault, "Paleoindian Stage," 77.

50 The Colorado Office of Historic Preservation and Archaeology (OAHP) maintains a database of all the recorded archeological sites in the state. Sites are designated with a unique identifier following the Smithsonian trinomial system. A number like 5LR13 (Lindenmeier site) is read as follows. The "5" indicates the state name position in an alphabetical list excluding Alaska and Hawaii. All sites in Colorado start with the number 5. The "LR" is a two letter county abbreviation. Larimer is LR and Weld is WL. The remaining number is a sequential number starting from 1 and assigned to the next recorded site in the county. Some sites which are large and well-known will also be given a common name such as the Lindenmeier site. The name usually refers to the land owner or a nearby physical feature. Although much of the information about a site is available to the public, specific location information is given limited access to prevent site damage. A February 2006 search of the database for sites in Larimer and Weld counties returned over 5,100 sites. Eliminating the sites that could be assigned strictly to Euroamerican occupants, the number of potential aboriginal (pre-tribal era) and native sites was roughly 3,400. About half of these sites had no culture or time frame information. Each of the stages in the chronology was represented by at least 50 sites. Many sites had multiple attributions, including Euroamerican. From the overall site record, it is apparent that for the last 12,000 years Larimer and Weld counties have seen continued native use with a site density of 0.2 sites/sq km. Site density in CLPRNHA is slightly lower than the county-wide level at 0.14 sites/sq km.

- 51 Grant et al., *Cache La Poudre Water and Power Project*, 108; Gilmore, "Late Prehistoric Stage," 203.
- 52 Chenault, "Paleoindian Stage," 64-67.
- 53 Cassells, *The Archaeology of Colorado*, 83.
- 54 Tate, "Archaic Stage," 106.
- 55 Cassells, *The Archaeology of Colorado*, 70-71.

56 Tate, "Archaic Stage," 106; City of Fort Collins "The Larimer Foothills: Mountains to Plains Project Timeline" factsheet, date unknown. To be included in the National Register of Historic Places a site has to pass several tests. In general terms, it has to be somehow different than other already known and documented sites so that if it were destroyed valuable information about the past would be irrevocably lost. Registry listing does not necessarily guarantee protection and preservation but it does provide mechanisms for mitigation and information retrieval prior to destruction.

- 57 Cassells, *The Archaeology of Colorado*, 74; Chenault, "Paleoindian Stage," 67.
- 58 Breternitz et al., "An Early Burial."
- 59 Chenault, "Paleoindian Stage," 71; Gilmore, "Late Prehistoric Stage," 187; Tate, "Archaic Stage," 105, 120.
- 60 Chenault, "Paleoindian Stage," 77-78.
- 61 Cassells, *The Archaeology of Colorado*, 84-85; Chenault, "Paleoindian Stage," 78.
- 62 Tate, "Archaic Stage," 126.
- 63 Gilmore, "Late Prehistoric Stage," 202.
- 64 Tate, "Archaic Stage," 120, 138.
- 65 Gilmore, "Late Prehistoric Stage," 226.
- 66 Todd et al., "Late Archaic Bison Hunters."
- 67 Niven et al., "Enamel Hypoplasia in Bison."
- 68 Todd et. al, "late Archaic Bison Hunters."
- 69 OAHF, Directory of Colorado State Register Properties.
- 70 Anthropology Update, "Kaplan-Hoover Site."
- 71 Tate, "Archaic Stage," 135.
- 72 Gilmore, "Late Prehistoric Stage," 247-248.
- 73 Wanner and Brunswig, "Late Archaic Skeleton."
- 74 Cassells, *The Archaeology of Colorado*, 214.
- 75 Gunnerson, *Archaeology of the High Plains*, 134.
- 76 Tate and Gilmore, "Environment," 8; Gilmore, "Late Prehistoric Stage," 246.
- 77 Gilmore, "Late Prehistoric Stage," 230, 256.
- 78 Black, "OSAC Field Investigations." The Colorado Office of the State Archaeologist is responsible for investigating reports of unmarked graves on non-federal public and private lands within the state.
- 79 Gilmore, "Late Prehistoric Stage," 256.
- 80 Gilmore, "Late Prehistoric Stage," 202.
- 81 Gilmore, "Late Prehistoric Stage," 255-256.
- 82 Clark, "The Protohistoric Period," 319-321.
- 83 Hyde, *Life of George Bent*, 28, 49, 149.
- 84 Crum, *People of the Red Earth*, 80; Fowler, "Arapaho," 848; Moore et al., "Cheyenne," 868.
- 85 Brasser, "Historic Plains Nomadism," 317.
- 86 Banks and Snortland, "Every Picture."
- 87 Binnema, *Common and Contested Ground*, xv.
- 88 Thurman, "Little Missouri River," provides a good example of teasing out the confusion of exactly which river is the Little Missouri in South Dakota.
- 89 Gunnerson, *Archaeology of the High Plains*, 134; Gunnerson, "Plains Village Tradition," 239.
- 90 Steinacher and Carlson, "The Central Plains Tradition," 243-248.
- 91 Gilmore, "Late Prehistoric Stage," 267.
- 92 Gunnerson, "Plains Village Tradition," 239; Wedel, *Central Plains Prehistory*, 132.
- 93 Gunnerson, "Plains Village Tradition," 239
- 94 Tucker et al., "Dismal River Complex."
- 95 Foster and McCullough, "Plains Apache," 926; Gunnerson, *Archaeology of the High Plains*, 132, 2001:239.
- 96 Gunnerson, "Plains Village Tradition," 239
- 97 Foster and McCullough, "Plains Apache," 926.
- 98 Foster and McCullough, "Plains Apache," 928.
- 99 Foster and McCullough, "Plains Apache," 927.
- 100 Haines, "Northward Spread of Horses," 43; Levy, "Kiowa," 907.
- 101 Flores, "Bison Ecology and Bison Diplomacy," 472; Levy, "Kiowa," 907.
- 102 Nabokov and Loendorf, *Restoring a Presence*, 67-75.
- 103 Hyde, *Indians of the High Plains*, Figure opposite 68, Figure opposite 122.
- 104 Kavanagh, "Comanche," 886.
- 105 Kavanagh, "Comanche," 888.
- 106 Flores, "Bison Ecology and Bison Diplomacy," 473; Levy, "Kiowa," 908.
- 107 Flores, "Bison Ecology and Bison Diplomacy," 475.
- 108 Flores, "Bison Ecology and Bison Diplomacy," 483; Jablow, *Plains Indian Trade Relations*, 72.
- 109 Trenholm, *The Arapaho*, 9-23.
- 110 Trenholm, *The Arapaho*, 32.
- 111 Trenholm, *The Arapaho*, 50.
- 112 Murphy, "Place of the Northern Arapaho," 52.

- 113 Fowler, "Arapaho," 842.
- 114 Berthrong, *The Southern Cheyennes*, 4-16.
- 115 Gunnerson, *Archaeology of the High Plains*, 132. Roper, "Early Pawnee Hunting Practices," shows that the Pawnee did not extend into Colorado so these forays may have been isolated. They may also have been a response to depletion of bison on the Central Plains and an expectation of better hunting near the mountains in the mid-1800s.
- 116 Trenholm, *The Arapaho*, 151.
- 117 DeMallie, "Sioux Until 1850," 732.
- 118 Hyde, *Life of George Bent*.
- 119 Voget, "Crow," 696.
- 120 Simmons, *The Ute Indians*, 14.
- 121 Brett, *Ethnographic Assessment*, 31-41; Buchholtz, *Rocky Mountain National Park*, 20; Callaway et al., "Ute," 339; Simmons, *The Ute Indians*, 20.
- 122 Ellwood, *Native American Ceramics*, 70, 75.
- 123 Simmons, *The Ute Indians*, 29, 46.
- 124 See for example Simmons, *The Ute Indians*, 46, 62, 88, 109, 139, 141; Trenholm, *The Arapaho*, 169-170.
- 125 Simmons, *The Ute Indians*, 109.
- 126 Brewer, *Rocky Mountain Letters*, 12-16.
- 127 Simmons, *The Ute Indians*, 131-133.
- 128 Hyde, *Indians of the High Plains*, 127.
- 129 Brunswig, "Excavations at Echo Cave;" Ellwood, *Native American Ceramics*, 66.
- 130 Swagerty, "United States Until 1850," 268.
- 131 Gray, *Poudre River*, 10.
- 132 Carter, "William Ashley," 84.
- 133 Grant et al., *Cache La Poudre Water and Power Project*, 45.
- 134 Butler, *Historic Archaeology of Rocky Mountain National Park*, 31. Watrous, *Larimer County*, 31, presents this a fact although the dates he gives do not correspond with dates in Carter, "Kit Carson," 183, and Gray, *Poudre River*, 14, says that whole story of Kit Carson on the Poudre was a fabrication found in a dime-novel that exploited Carson's popularity as a mountain-man.
- 135 Goetzmann, *Exploration and Empire*, 497.
- 136 Benson, *Major Stephen Long's Expedition*, 198. Watrous, *Larimer County*, 43, relates this episode giving the name as "Pateros Creek" but credits the three streams as being the Cache la Poudre, Big Thompson and St. Vrain.
- 137 Dodge, "Report on the Expedition," 138.
- 138 Pelzer, "Captain Ford's Journal," 562.
- 139 Butler, *Historic Archaeology of Rocky Mountain National Park*, 31; Hafen, *Trappers of the Far West*, vi.
- 140 Swanson, *Fort Collins Yesterdays*, 4. Hafen's two edited volumes on mountain men and fur trappers (*Trappers of the Far West* and *Mountain Men and Fur Trappers*) give almost no mention of the Cache la Poudre. The one exception is William Ashley's forced winter camp on the Poudre due to harsh weather in 1824, when he followed the Front Range foothills to reach the Laramie Plains.
- 141 Thompson, "Life in an Adobe Castle," Figure p. 18.
- 142 Hyde, *Life of George Bent*, 68.
- 143 Clements, *Sam Deon-Eliza Gardner Cabin*, 13; Hafen, *Broken Hand*, 299; Swanson, *Fort Collins Yesterdays*, 5.
- 144 Jablow, *Plains Indian Trade Relations*, 65.
- 145 Hyde, *Life of George Bent*.
- 146 Grinnell, "Some Cheyenne Stream Names," see also Brett, *Ethnographic Assessment*, 47.
- 147 Benson, *Major Stephen Long's Expedition*, 186, 202; Goodman, *Retracing Long's Expedition*, 26, 46, 68.
- 148 Benson, *Major Stephen Long's Expedition*, 203;
- 149 Dodge, "Report on the Expedition," Figure opposite 130.
- 150 Hurt, *The Indian Frontier*, 190.
- 151 DeMallie, *Handbook of North American Indians*, ix, Fowler, "Arapaho," 841, 864.
- 152 Cassells, *The Archaeology of Colorado*, Figure 10-14.
- 153 West, *The Contested Plains*, Figure opposite 274.
- 154 Nabokov and Loendorf, *Restoring a Presence*, 163.
- 155 Binnema, *Common and Contested Ground*, 11-15.
- 156 Roper, "Quail and the Pawnee," 73.
- 157 Henning, "Western Dakota Winter Counts," 58.
- 158 DeMallie, "Sioux Until 1850," 718.
- 159 Goetzmann, *Exploration and Empire*, 314.
- 160 Wood and Thiessen, *Early Fur Trade*, Map 1.

- 161 Watrous, *Larimer County*, 51.
- 162 Fry, *Cache La Poudre*, 10.
- 163 West, *The Contested Plains*, 192.
- 164 Watrous, *Larimer County*.
- 165 Duncan, *Memories of Early Days*.
- 166 Hyde, *Life of George Bent*, 31.
- 167 Shwayder, *Weld County*, A13, A27, A30; Watrous, *Larimer County*, 183.
- 168 Hoffman and Culley, *Women's Personal Narratives*.
- 169 Wislizenus, *Journey to the Rocky Mountains*.
- 170 Watrous, *Larimer County*, Geffs, *Under Ten Flags*.
- 171 Benson, *Major Stephen Long's Expedition*, v; Sandweiss, *Print the Legend*, 93.
- 172 Goetzmann, *Army Exploration*, 15.
- 173 Goetzmann, *Army Exploration*, 19.
- 174 Sandweiss, *Print the Legend*, 2.
- 175 Sandweiss, *Print the Legend*, 20-23, 118.
- 176 Sandweiss, *Print the Legend*, 93.
- 177 Mangan, *Colorado on Glass*, 9.
- 178 Sandweiss, *Print the Legend*, 118, 124-125.
- 179 Sandweiss, *Print the Legend*, 136.
- 180 Sandweiss, *Print the Legend*, 138-140. This is the same Alfred Bierstadt who is known for his paintings of the Rocky Mountains. His commercial popularity increased with the stereographs he took of the west. The stereograph projector was a common device in middle-class homes of the period so his photographs found a ready audience, partially due to his timely marketing.
- 181 Mangan, *Colorado on Glass*.
- 182 Mangan, *Colorado on Glass*, 99; Sandweiss, *Print the Legend*, 196.
- 183 Goetzmann, *Exploration and Empire*, 500.
- 184 Watrous, *Larimer County*, 10.
- 185 Watrous, *Larimer County*, 15.
- 186 Brinks, *From Provost to Brinks*, 6, 44; Watrous, *Larimer County*, 44; West, *The Contested Plains*, 189. Watrous gives the date as 1844 instead of 1858 and A. Janis says that the individual was Bold Wolf.
- 187 Hafen, *Broken Hand*, 325-337.
- 188 Watrous, *Larimer County*, 84.
- 189 Trenholm, *The Arapaho*, 151.
- 190 Judge A. F. Howes, *Fort Collins Courier*, February 1, 1883, 1.
- 191 Murphy, "Place of the Northern Arapaho, part 2," 208; Watrous, *Larimer County*, 108. Murphy says that in 1859 or 1860, Hayden met a group of Arapaho near Glendo, Wyoming, while participating in William F. Raynold's Yellowstone expedition. Both Hayden and Raynold were highly impressed with Friday although it is not clear that he was with the group at Glendo or if they met at another time. While it is perfectly reasonable that Friday could have been in the Glendo area, it is less clear what Hayden was doing there. Goetzmann's map (*Exploration and Empire*, 311) of the Raynold expedition shows it following the Missouri River to the Cheyenne and Bell Fouché rivers in South Dakota, then north to the Yellowstone and eventually down the Yellowstone to the Park area. This route comes nowhere close to Fort Laramie or Glendo. Hayden's 1857 route to survey the Niobrara River did go to Fort Laramie so the meeting with Friday might have occurred then. Or there may have been multiple encounters. Or possibly Goetzmann's map is in error. This is the nature of the historical record; Hayden's focus was on the geology and not on the people he encountered; Murphy's focus is on showing that the Arapaho were not antagonistic and have been inappropriately portrayed; Goetzmann's focus is on showing the grand sweep of Westward expansion during the mid to late 1800s; and between them all details get confused.
- 192 Watrous, *Larimer County*, 47.
- 193 Gray, *Cavalry and Coaches*, 31, 50.
- 194 Gray, *Cavalry and Coaches*, XXX
- 195 Trenholm, *The Arapaho*, Figure opposite 136; West, *The Contested Plains*, 281.
- 196 Hafen, *Broken Hand*, 330-331; Trenholm, *The Arapaho*, 171, includes White Wolf but not Little Owl.
- 197 Gray, *Cavalry and Coaches*, 49
- 198 Watrous, *Larimer County*, 51.
- 199 Coel, *Chief Left Hand*, 192.
- 200 Gray, *Cavalry and Coaches*, 59
- 201 Gray, *Cavalry and Coaches*, 49, Coel, *Chief Left Hand*, 170
- 202 Coel, *Chief Left Hand*, 191.
- 203 Gray, *Cavalry and Coaches*, 60-61.

- 204 Murphy, "Place of the Northern Arapaho, part 2," 217.
- 205 Watrous, *Larimer County*, 90, 399.
- 206 Watrous, *Larimer County*, 91.
- 207 Gray, *Cavalry and Coaches*, 86, 95.
- 208 Watrous, *Larimer County*, 16.
- 209 Note that Watrous, *Larimer County*, 91, credits the Pawnee with killing Bill or Jake.
- 210 Watrous, *Larimer County*, 130.
- 211 Duncan, *Memories of Early Days*, 11; Hoffman and Culley, *Women's Personal Narratives*.
- 212 Hafen, *Broken Hand*, 334. Duncan, *Memories of Early Days*, 25; Hafen, *Broken Hand*, 334-335. Although Duncan reports that Friday had moved to a reservation in Montana in 1867, Hafen credits only a visit to the Gros Ventre in late 1870 and there is no record of Arapaho ever locating on a Montana reservation. Duncan's dates and facts are often confused like this; similar issues have been noted in cross-checking information in Watrous, *Larimer County*. Reflecting on the sources of available information, both Duncan and Watrous were recording information in the early part of the 1900s, easily 40 years after the events had occurred. No doubt recollections had faded or been transformed in retelling to match the expectations of listeners.
- 213 Geffs, *Under Ten Flags*, 238-239.
- 214 Gates, *Marino Medina*, 33.
- 215 Watrous, *Larimer County*, 108-109.
- 216 FN10 Meeker massacre recap.
- 217 Trenholm, *The Arapaho*, 151; West, *The Contested Plains*, 281.
- 218 Coel, *Chief Left Hand*, 193-194.
- 219 Trenholm, *Arapahoes, Our People*, 194, 239.
- 220 Watrous, *Larimer County*, 163.
- 221 Watrous, *Larimer County*, 110-111.
- 222 Watrous, *Larimer County*, 28.
- 223 Judge A. F. Howes, *Fort Collins Courier*, February 1, 1883, 1.
- 224 Gates, *Marino Medina*, 33.
- 225 Scott and Shwayder, *Historic Trail Map*, 11.
- 226 Duncan, *Memories of Early Days*, 23.
- 227 Duncan, *Memories of Early Days*, 10.
- 228 Duncan, *Memories of Early Days*, 31.
- 229 Gates, *Marino Medina*, 33.
- 230 Duncan, *Memories of Early Days*, 25.
- 231 Gray, *Cavalry and Coaches*, 60, has this appointment as occurring in 1864.
- 232 *Fort Collins Courier* April 15, 1938, 5 and April 4, 1972, 6; *Fort Collins Senior Voice*, September 29, 1982, 20
- 233 Watrous, *Larimer County*, 47.
- 234 Watrous, *Larimer County*, 76.
- 235 Watrous, *Larimer County*, 114.
- 236 Watrous, *Larimer County*, 47.
- 237 Evans, "Appeal to the People."
- 238 Geffs, *Under Ten Flags*, 242.
- 239 Geffs, *Under Ten Flags*, 244.
- 240 Watrous, *Larimer County*, 46, 89.
- 241 Gray, *Cavalry and Coaches*, 91, 102.
- 242 "Sioux Camp at Laporte," *Rocky Mountain News*, May 20, 1868, 4.
- 243 Watrous, *Larimer County*, 89.
- 244 Livermore Women's Club, *Among These Hills*, 108.
- 245 Brinks, *From Provost to Brinks*, 109.
- 246 Gates, *Marino Medina*, 60.
- 247 Brinks, *From Provost to Brinks*, 15.
- 248 Leonard, "Bovines and Vandals Hinder the Greening of the Plains," 21.
- 249 Livermore Women's Club, *Among These Hills*, 108.
- 250 Watrous, *Larimer County*, 90.
- 251 Hoffman and Culley, *Women's Personal Narratives*, 182-213.
- 252 Clements, *Sam Deon-Eliza Gardner Cabin*, 7.
- 253 West, *The Contested Plains*, 189; Gray, *Cavalry and Coaches*, 12; Swanson, *Fort Collins Yesterdays*,
- 254 Brinks, *From Provost to Brinks*, 12-13, 16.
- 255 Brinks, *From Provost to Brinks*, 16.

- 256 Gates, *Marino Medina*, 10-11. However, on p. 44 she is identified as Flathead from western Montana.
- 257 Gates, *Marino Medina*, 67, 74.
- 258 Arnold, "William Bent," 229-235; Coel, *Chief Left Hand*, 25; West, *The Contested Plains*, 81.
- 259 Coel, *Chief Left Hand*, 24; Hafen and Hafen, "Thomas Fitzpatrick," 251.
- 260 Francis Boas, Alfred Kroeber, George B. Grinnell, John Ewers, James Mooney, Omer Stewart, Walter McClintock, and John Ewers, among others were all part of these ethnographic endeavors.
- 261 Watrous, *Larimer County*, 167.
- 262 Grinnell, *The Cheyenne Indians*, 175.
- 263 Hyde, *Life of George Bent*, 90.
- 264 Roe, *North American Buffalo*, 604.
- 265 Crum, *People of the Red Earth*, 79; Roe, *North American Buffalo*, 604.
- 266 Jablow, *Plains Indian Trade Relations*, 44.
- 267 Bamforth, *Ecology and Human Organization*, 42-50.
- 268 Bamforth, *Ecology and Human Organization*, 45.
- 269 Binnema, *Common and Contested Ground*, 34.
- 270 Stewart, *Forgotten Fires*, 168.
- 271 Stewart, *Forgotten Fires*, 153-154.
- 272 Stewart, *Forgotten Fires*, 169.
- 273 Butler, "Cultural and Climatic Patterns," Table 8.
- 274 McClintock, *Old North Trail*, 3, 434.
- 275 Hyde, *Life of George Bent*, 31.
- 276 Gunnerson, *Archaeology of the High Plains*, 134.
- 277 Scott and Shwayder, *Historic Trail Map*, 4.
- 278 Hyde, *Life of George Bent*, 31-32.
- 279 Wood, "Plains Trade," Fig.1.
- 280 Wood, "Plains Trade," 102.
- 281 See for example Binnema, *Common and Contested Ground*, and Wood and Thiessen, *Early Fur Trade*.
- 282 Speth, "Plains-Pueblo Food Exchange," 29-34.
- 283 Bamforth, *Ecology and Human Organization*, 8.
- 284 Bamforth, *Ecology and Human Organization*, 57-61.
- 285 Binnema, *Common and Contested Ground*, 51-52.
- 286 Wood, "Plains Trade," 103.
- 287 Ewers, *Horse in Blackfoot Culture*, 2.
- 288 Swagerty, "United States Until 1850," 260.
- 289 Simmons, *The Ute Indians*, 29.
- 290 Swagerty, "United States Until 1850," 260.
- 291 Jacobson and Eighmy, "Theory of Horse Adoption," Table 1.
- 292 Binnema, *Common and Contested Ground*, 88.
- 293 Haines, "Northward Spread of Horses."
- 294 Haines, "Northward Spread of Horses," 435; Jacobson and Eighmy, "Theory of Horse Adoption."
- 295 Haines, "Northward Spread of Horses."
- 296 Jacobson and Eighmy, "Theory of Horse Adoption."
- 297 Jacobson and Eighmy, "Theory of Horse Adoption."
- 298 Jablow, *Plains Indian Trade Relations*, 40-41, 45.
- 299 Jablow, *Plains Indian Trade Relations*, Map 2.
- 300 Hurt, *The Indian Frontier*, 33, 209-210; Levine, "Comanchero Trade," 157; Swagerty, "United States Until 1850," 260.
- 301 Jablow, *Plains Indian Trade Relations*, 82.
- 302 Jablow, *Plains Indian Trade Relations*, 83. Counting coup in this context is the practice of touching an enemy in battle with the hand, a war lance, or other hand held weapon. The enemy is symbolically dead whether he receives a physical injury or not. There is significant risk to the toucher since he needs to be within arm's length of the enemy to count coup. The enemy could easily turn the tables. Prior to the importance of horse wealth in Cheyenne society, prestige was gained through counting coup - more coup counts implied more courage and success in battle.
- 303 Weist, "Plains Indian Women," 264.
- 304 Flores, "Bison Ecology and Bison Diplomacy," 471.
- 305 Jablow, *Plains Indian Trade Relations*, 20.
- 306 Weist, "Plains Indian Women," 264. Polygyny likely increased due to two additional factors--the loss of marriageable adult males through disease and the loss of males through warfare.
- 307 Berthrong, *The Southern Cheyennes*, 26; Jablow, *Plains Indian Trade Relations*, 63; West, *The Contested Plains*, 83.

308 Jablow, *Plains Indian Trade Relations*, 68.
 309 Jablow, *Plains Indian Trade Relations*, 64.
 310 Jablow, *Plains Indian Trade Relations*, 67.
 311 Thompson, "Life in an Adobe Castle," 17.
 312 Swagerty, "United States Until 1850," 277.
 313 Swagerty, "United States Until 1850," 257-258.
 314 Ubelaker, "North American Indian Population," Table 5. Population estimates for Plains groups are difficult because of the impact of disease, mobility, group fragmentation, and census difficulties.
 315 Upham, "Population and Spanish Contact," 235.
 316 Swagerty, "United States Until 1850," 257.
 317 Trimble, "1832 Inoculation Program," 258-259.
 318 Hyde, *Life of George Bent*, 96-97; Trimble, "1832 Inoculation Program," 260.
 319 Swagerty, "United States Until 1850," 258.
 320 Thompson, "Life in an Adobe Castle," 34.
 321 Stannard, "Consequences of Contact," 529, emphasis in original
 322 Binnema, *Common and Contested Ground*, 125; Reff, "Contact Shock," 971.
 323 Binnema, *Common and Contested Ground*, 125.
 324 Binnema, *Common and Contested Ground*, 126.
 325 Levy, "Kiowa," 921 quoting from James Mooney, "Calendar History of the Kiowa Indians," in *Part 1 of the 17th Annual Report of the Bureau of American Ethnology 1895-1896*, Smithsonian Institution, Washington, DC. page.173.
 326 Swagerty, "United States Until 1850," 269.
 327 Stewart, "Hidatsa," 331. Similarly, at least two of the original ten Cheyenne bands disappeared due to attrition (Moore et. al, "Cheyenne," 864). The modern Arapaho may be a consolidation of four original bands decimated by warfare and disease (Fowler, "Arapaho," 840).
 328 Stannard, "Consequences of Contact," 532. Comanche used raiding to augment their depleted numbers with captives from other tribes (Kavanagh, Comanche," 890).
 329 Stannard, "Consequences of Contact," 529.
 330 Duncan, *Memories of Early Days*, 18.
 331 Simmons, *The Ute Indians*, 57.
 332 Shwayder, *Weld County*, A44.
 333 Jablow, *Plains Indian Trade Relations*, 72.
 334 Martin and Szuter, "War Zones and Game Sinks."
 335 Flores, "Bison Ecology and Bison Diplomacy," 476.
 336 Dodge, "Report on the Expedition," 138.
 337 Thompson, "Life in an Adobe Castle," 13, 15.
 338 Simmons, *The Ute Indians*, 84.
 339 Flores, "Bison Ecology and Bison Diplomacy."
 340 Fremont, *Exploring Expedition*, 38-39.
 341 Chittenden and Richardson, *Father De Smet*, 671-673.
 342 West, *The Contested Plains*, 88.
 343 West, *The Contested Plains*, 230.
 344 Bamforth, *Ecology and Human Organization*, 48.
 345 Murphy, "Place of the Northern Arapaho, part 2," 220.
 346 Watrous, *Larimer County*, 51.
 347 Laffin, *Irrigation, Settlement, and Change*, 16. Although Whitacre and Simmons, *Historic Farms and Ranches*, E5 says the number of acres was 60,000, this seems extreme for hand dug ditches.
 348 Scott and Shwayder, *Historic Trail Map*, 12.
 349 Fraser and Strand, *Railroads in Colorado*, E8.
 350 Whitacre and Simmons, *Historic Farms and Ranches*, E14.
 351 Krysl et al., "Horses and Cattle Grazing," 72.
 352 Whitacre and Simmons, *Historic Farms and Ranches*, E18.
 353 Economist, "Placing Names," June 17-23, 2006, 89.
 354 For more discussion of the impact of reduced native hunters, particularly in California and the Southeast, see Kay and Simmons, *Wilderness & Political Ecology*.
 355 Diamond, *Collapse*, 428-429.
 356 This is not say that native groups did not form alliances, only that the alliances were short-term and fluid.
 357 Grant et al., *Cache La Poudre Water and Power Project*, 13.

