



1994

# Cultural Landscape Study of Fort Union National Monument

Amy L. Freitag  
*University of Pennsylvania*

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# Cultural Landscape Study of Fort Union National Monument

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CULTURAL LANDSCAPE STUDY  
OF  
FORT UNION NATIONAL MONUMENT

Amy L. Freitag

A THESIS

in

Historic Preservation

Presented to the faculties of the University of Pennsylvania in  
Partial Fulfillment of the Requirements for the Degree of

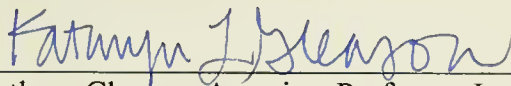
MASTER OF SCIENCE

1994



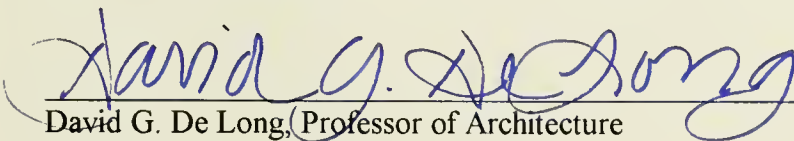
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## PREFACE

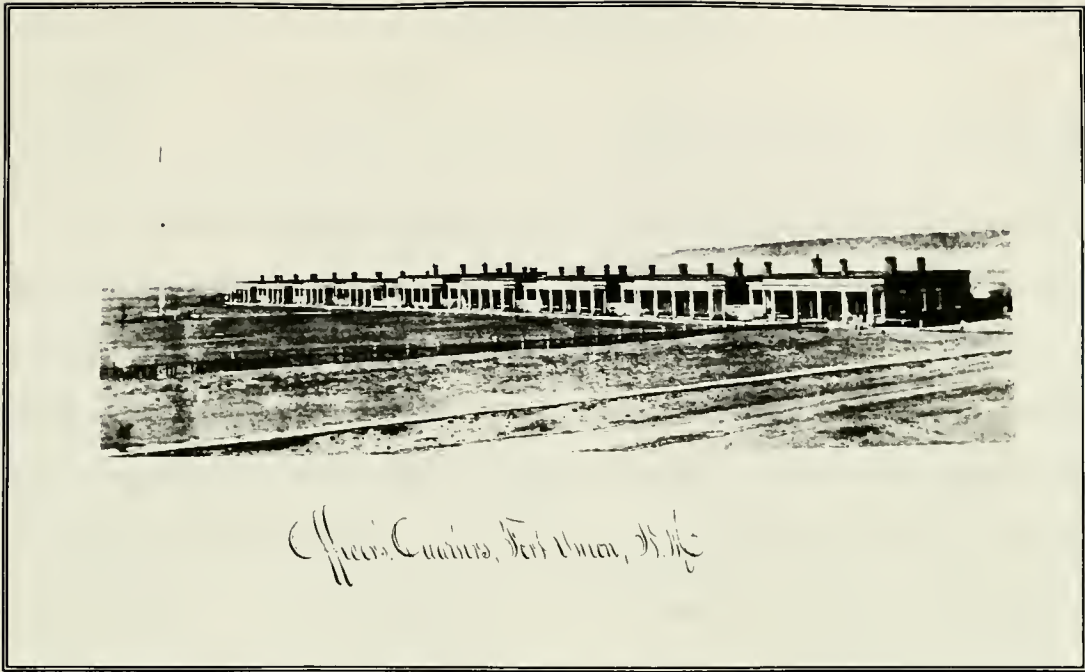
This project was funded in part by the National Park Service. Part of the challenge of this academic exercise was to create a document which would both fulfill the needs of the Park Service as well as provide a fruitful learning experience. The study is modeled after various other Park Service Cultural Landscape Reports, however, those reports vary widely.

The Cultural Landscape Study for Fort Union was first proposed by Barbara Zook, Architectural Historian at the Southwest Regional Office of the National Park Service. Her perseverance launched both the funding and the project. Frank G. Matero, Associate Professor of Historic Preservation at the University of Pennsylvania, was chiefly responsible for forging cooperative arrangements between the Park Service and University, without which this thesis could not have happened. His advice and guidance has been essential throughout the project. Harry C. Myers, current Superintendent of Fort Union National Monument, deserves a great deal of credit for adopting an understanding and appreciation of Cultural Landscapes and supporting the project through its conception. His great depth of knowledge of Fort Union served as mentor to this study.

This study required numerous advocates in the Southwest Regional office including Peggy Froeschauer, Mike Taylor, Jill Crowley, and Jake Barrow. Jake Ivey deserves special credit for willingly attempting to point out the invisible at Fort Union, answering endless questions, and providing an essential Base Map to the Fort Union documentation. The excellent Staff of Fort Union National Monument was also exceedingly patient and helpful.

At the University of Pennsylvania, Dr. Kathryn Gleason contributed both her investigative eye as an Landscape Archaeologist and theoretical support as a Landscape Architect to this study. Dr. Christa Wilmanns-Wells provided her endless enthusiasm and





*Figure 1: Historic Photograph of Third Fort Union, c. 1865-1890, (Source: Fort Union Archives)*

knowledge of the Common American Landscape. Dr. Arthur Johnson, who instilled the knowledge in me that cultural history can be read in the natural landscape, contributed his knowledge of soils, rocks, plants and water as a reader of this thesis. I would also like to thank my editor, Jennifer Knuth; Dr. David Delong, Chairman of the Program in Historic Preservation; Shaun Eyring, of the National Park Service; Jeremy Foster; James Corner; and, Cynthia Smith.



## INTRODUCTION

Fort Union National Monument is dominated by its landscape: its haunting isolation, its seemingly endless arid prairie juxtaposed by verdant mountains, the slow succession and evolution of its soils and vegetation. In the history of its landscape lies a larger, more inclusive interpretation of Fort Union. The larger Fort Union landscape, the region including the Mora Valley and Turkey Mountains, has been a significant corridor of transportation endowed with vital natural resources and access to the rich Rio Grande valley. This area was the setting for both Native American and Hispanic American inhabitation and served as a depot along the Santa Fe Trail.

Pre-Anglo use of the site of Fort Union is suggested by the Hispanic name, *Los Pozos*, loosely translated as "the ponds" or "springs." Certainly the valley's rich resources would not have escaped the attention of Native Americans. Indeed, 12th century Pueblo ruins within ten miles of the Fort and well-documented trade between Plains and Pueblo tribes indicate that the Native American valued the plentiful resources and access offered by the Fort Union landscape.<sup>1</sup>

Although it is important not to overemphasize Fort Union's importance in New Mexico and Mora County's history, it is clear that the Fort Union landscape, both natural and cultural, played a vital role in the region's development. This role is particularly evident in the study of roads and circulation at Fort Union. As a significant stop along the major national highway known as the Santa Fe Trail and the hub of a distinct network of local roads, transportation was the pulse of Fort Union.

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<sup>1</sup>A. V. Lister, "Notes on the Archaeology of the Watrous Valley, New Mexico," *El Palacio*, Santa Fe, NM: School of American Research, vol. 55., February 1948, pgs. 35-41.





*Figure 1: Aerial Photo, Fort Union National Monument (Source USGS)*

## **Historical Overview**

Fort Union National Monument is located eight miles north of Watrous, New Mexico, at the base of the Mora Valley and 90 miles northeast of Santa Fe. (Fig. 2) Bounded on the east by the Gallinas or Turkey Mountains and endless, arid prairie beyond, Fort Union stands near the juncture of the Sapello and Mora Rivers. Watrous was formerly known as La Junta, in reference to the juncture of these rivers.<sup>2</sup> Watrous/La Junta later became the location of a critical juncture of the two branches of the Santa Fe Trail.(Fig. 10). This convergence of rivers and trails indicates that the area surrounding Fort Union has historically been a landscape of passage. Nomadic Plains Indians inhabited this region as an ideal point of departure for hunting buffalo on the Great Plains. Similarly,

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<sup>2</sup>La Junta was later renamed Watrous when the A.T.& S. F. Railway came to town because of the previously established stop at La Junta, Colorado. Watrous was named after one of the first anglo settlers in the area.







*Figure 2: Mora Valley (Photo by Author)*

once Spanish and Mexican settlers sought an agrarian lifestyle, the Mora Valley's combination of resources and accessibility made it. Thus, the period of Army occupation, 1851-1891, represents only a portion of the history of this landscape.

After the Army abandoned Fort Union in 1891, the land reverted to its owners, the Butler-Ames Cattle Company, later known as the Union Land and Grazing Company. Butler had purchased the land from claimants of the Mora Land Grant in the mid-1870's.<sup>3</sup> Fort Union National Monument was congressionally authorized by Public Law 83-429 on June 28, 1954, after the Union Land and Grazing Company negotiated a land transfer with the National Park Service Southwestern Regional Office. The Monument opened to the public in 1956.

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<sup>3</sup>Liping Zhu, "Fort Union National Monument: An Administrative History," Division of History, National Park Service, Southwest Cultural Resource Center, Professional Papers no. 42, 1992, pg. 13.



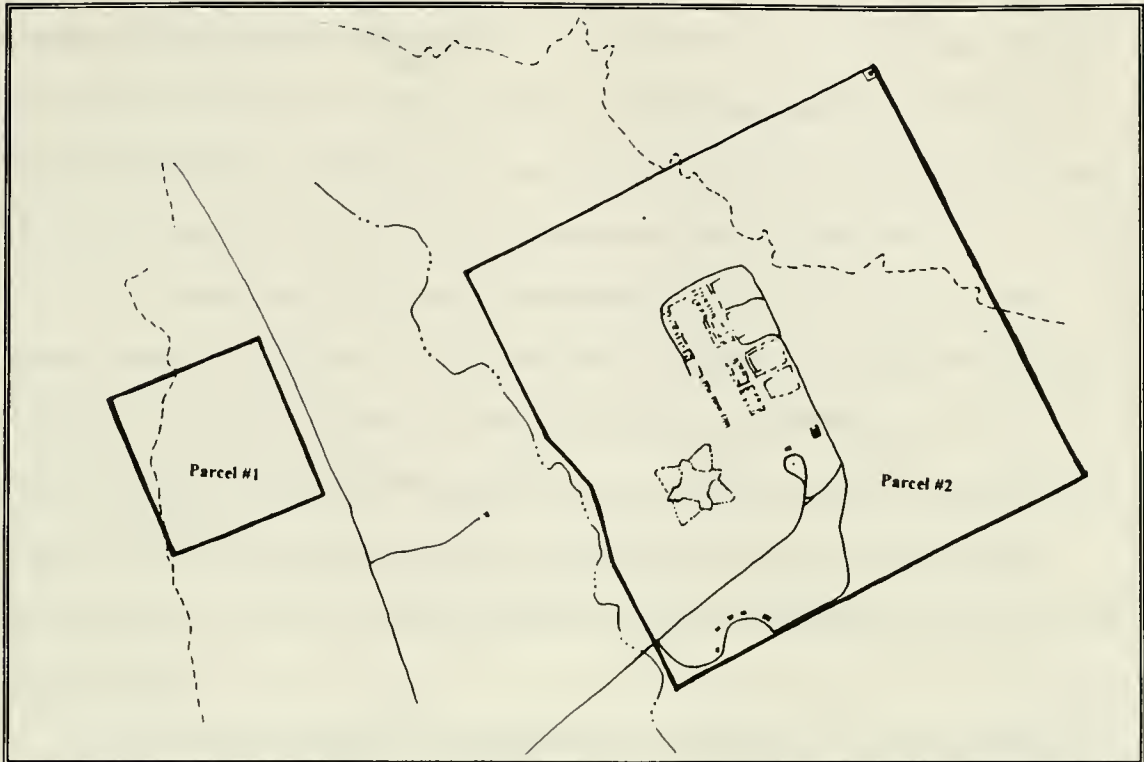


Figure 3: Plan, Fort Union National Monument (Source: General Management Plan, Fort Union)

Today, Fort Union National Monument is deemed historically significant as both a pre-Civil War fort and as a major depot along the Santa Fe Trail. Ft. It is the largest remaining adobe ruin in the United States and one of the longest standing monuments in the National Park Service's portfolio. The Fort's history falls into three separate eras: the First Fort, 1851-1862; the Second Fort, 1862-1864; and the Third Fort, 1864-1891.

Fort Union was transferred in the form of two parcels with a combined total of 720.6 acres.<sup>4</sup> The smaller of the two parcels, identified as parcel #1 in Figure 3, includes most of the ruins associated with the First Fort Union/Arsenal (the later reuse of the First Fort). Parcel #2 is much larger and includes most of the ruins associated with the Second and Third Fort Unions. Parcel #1 is not directly accessible by public right of way and access to it must be granted to Park staff by the Union Land and Grazing Company. Parcel #2 is open to the public daily, year-round. Fort Union Monument is, therefore,

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<sup>4</sup>Zhu, pgs 24-26.



completely federally owned with rights of way granted by the Union Land and Grazing Company. Under the recommendation of the General Management Plan (1985) Fort Union National Monument has begun to seek view shed protection from the Union Land and Grazing Company, however, no such agreements have been finalized.

The operation of Fort Union is governed by guidelines set forth in the 1985 General Management Plan which sought compliance with "numerous legal requirements including the General Authorities Act, the National Historic Preservation Act, the Endangered Species Act, and other applicable laws, regulations, executive orders, and policies."<sup>5</sup> The present Superintendent has also sought the advice of Regional Park Service specialists on Native American studies, although a comprehensive study remains to be undertaken.

In addition to the General Management Plan, other key Fort Union documents include: a recently completed Administrative History (Zhu, 1992), a recently completed History of Archaeological Investigations (Levine, Westbury, Nordstrum, 1992), a Historic Structures Report for Third Fort (Pitcaithley, Greene, 1982), a draft Historic Structures Report and Historic Base Map for First and Second Forts including the Arsenal and Sutler's Row (Soullieré Harrison and Ivey, 1994), a draft Historic Preservation Plan (Zook, 1989) and a draft comprehensive history of the site, *Fort Union and the Frontier Army of the Southwest* (Oliva, 1994).

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<sup>5</sup>"Fort Union National Monument, New Mexico General Management Plan" Southwest Regional Office, National Park Service, Santa Fe, New Mexico, 1985, pg. 5.



## The Cultural Landscape<sup>6</sup> Program

As a fundamental first step, this study aims to define Fort Union as a cultural landscape -- what Robert Melnick, author of *Cultural Landscapes: Rural Historic Districts in the National Park System*, has referred to as "the mixture of the natural and cultural wealth ... [perhaps] best understood as complex human ecological systems existing within equally complex natural ecological [systems]." <sup>7</sup> The process of applying this definition of cultural landscape may be summarized as a comparison of existing site elements to those believed to have existed during the historic period in order to determine if suitable integrity of the original elements exists. If so, it suggests that the site is a cultural landscape worth nominating to the National Register of Historic Places. This evaluation is fundamentally complicated by even the most basic definitions of "landscape" and "landscape elements."

This study further aims to add another dimension to previous studies of Fort Union National Monument by clarifying the implications of enlarging the scale of presentation of the Park from that of a monument to a landscape. Historically, documentation and preservation efforts have focused on structures and built cultural artifacts, while treating their contexts and landscapes as non-contributing background. Over the past several years, the National Park Service has developed the Cultural Landscape Program in order to seek a greater understanding of its diverse resources as cultural landscapes. Melnick and others involved in cultural landscape studies began to change the focus by pointing out that not only were landscape resources often mistreated but also that significant opportunities for interpretation were being missed. This study and many others produced

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<sup>6</sup>Cultural landscape is defined by Robert Melnick and the National Park Service as: "a geographic area, including both natural and cultural resources, including the wildlife or domestic animals therein, that has been influenced by or reflects human activity or was the background for an event or person significant in human history." (Melnick, *Cultural Landscapes: Rural Historic Districts in the National Park Service*, National Park Service, 1984, pg. 66.

<sup>7</sup>Robert Z. Melnick, "Protecting Rural Cultural Landscapes: Finding Value in the Countryside," in *Landscape Journal*, Vol. 2, No. 2, 1983, pp. 85-96.





in recent years by the National Park Service takes part in the process of forging an understanding of the term cultural landscape as it applies to a variety of National Park Service sites.

This Cultural Landscape Study of Fort Union employs a methodology that may be used to reassess other National Park Service sites, cultural and natural, as cultural landscapes. Cultural landscapes by definition embody some degree of man's tenancy in nature, which can be as obvious as the development of a city or as subtle as the creation of a wilderness preserve. As we begin to realize that the definition of nature itself is a cultural construct, it is increasingly difficult to draw any distinction between man and nature. Fort Union is both a "natural<sup>8</sup>" landscape and a cultural artifact. Ideally, as a cultural landscape, it should be seen as one site, like many, where man and nature interact over time.

Further, this study suggests that the act of preservation or conservation is, in itself, temporal. As the National Park Service celebrates its 75th anniversary, the first 25 years of its preservation and conservation interventions now fall within its own perimeters of historic distinction. Those interventions constitute a unique expression of preservation which must be considered in the social and political context of its day. Thus, the preservation of Fort Union itself was an act of historic significance and we must strive to objectively include it with equal consideration along the continuum of history at Fort Union.

The goal of the Cultural Landscape Program is to assist staff and planners in making management decisions on the care and treatment of their landscape resources and to improve the interpretation of those resources. The Fort Union landscape can benefit from assistance with vegetation control and view shed protection as well as a more broad and inclusive interpretation of its context. The purpose of this study, therefore, is to

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<sup>8</sup>"Natural" landscapes in the Park Service include Yosemite and the Grand Canyon. I chose to italicize "natural" because these sites are highly controlled by man.



document and analyze the Fort Union landscape within and beyond Park boundaries in order to make recommendations for future study, interpretation, and management.

## **Methodology<sup>9</sup>**

The methodology employed in this study included site documentation according to the Cultural Landscape Inventory procedure currently being tested in the National Park Service.<sup>10</sup> The Inventory considers the site on three levels: Level I, a regional context; Level II, an overall site study by landscape elements such as views and circulation; and Level III, a close study of specific sites or elements within the site.

Level I of the Cultural Landscape Inventory places the site within its larger regional context, both ecologically and culturally. In the case of Fort Union, the Level I Inventory considers the monument's situation in the Southwest, Northeastern New Mexico, Mora County, and the Mora Valley. This portion of the Inventory is reflected in the first two chapters of this study.

Level II of the Cultural landscape Inventory describes and analyzes the site by character-defining features. These features include: circulation, spatial organization, structures, and vegetation. The importance of these various elements vary according to site. At Fort Union, as a National Historic Santa Fe Trail Site, circulation as part of a larger transportation network was identified as a particularly critical feature of the

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<sup>9</sup>The National Park Service guidelines for Cultural Landscape Reports are currently being written.. Cultural Landscape Reports are intended to be multi-disciplinary, comprehensive reports documenting, analyzing and making recommendations for various National Park Sites. Due to time and geographic limitations, the scope of this study is only a portion of what would ordinarily comprise a Cultural Landscape Report.

<sup>10</sup>The Cultural Landscape Inventory is a National Park Service program designed to create a universal, objective documentation procedure for all Park Service resources. The Inventory form prompts the collection of specific landscape data on three levels, from broad to specific. Currently, several Regional Offices of the National Parks Service are testing the Cultural Landscape Inventory Program, each offering suggestions on its refinement as they attempt to conduct Inventories on various sites. The Cultural Landscape Inventory is basically a list of information, a step towards but unlike a Cultural Landscape Report.



landscape. This study addresses all the character defining landscape features of Fort Union in Chapters 3 and 4.

Level III of the Cultural Landscape Inventory addresses the micro level of those broad character defining features identified in Level II. For example, within the category of circulation, specific dimensions, materials, and construction would be addressed. Level III analysis is extraordinarily detailed and fell beyond the scope of this project.

The Cultural Landscape Inventory is, ultimately, a process of data collection. This study goes further to make recommendations for the future management, planning and interpretation of Fort Union (chapter 5). These recommendations aim to address both the larger scale planning goals of the Southwest and Washington offices of the National Park Service as well as the specific needs of Fort Union. For example, at Fort Union, the current Superintendent expressed an interest in strengthening the connections between Fort Union and its surrounding communities. Level I of the Inventory directly addresses that goal. At the national and regional levels of the National Park Service, there is a great deal of work being completed to develop an understanding and improve the stewardship of cultural landscapes. This study aims to contribute to that effort.



# Chapter 1

## EXISTING CONDITIONS

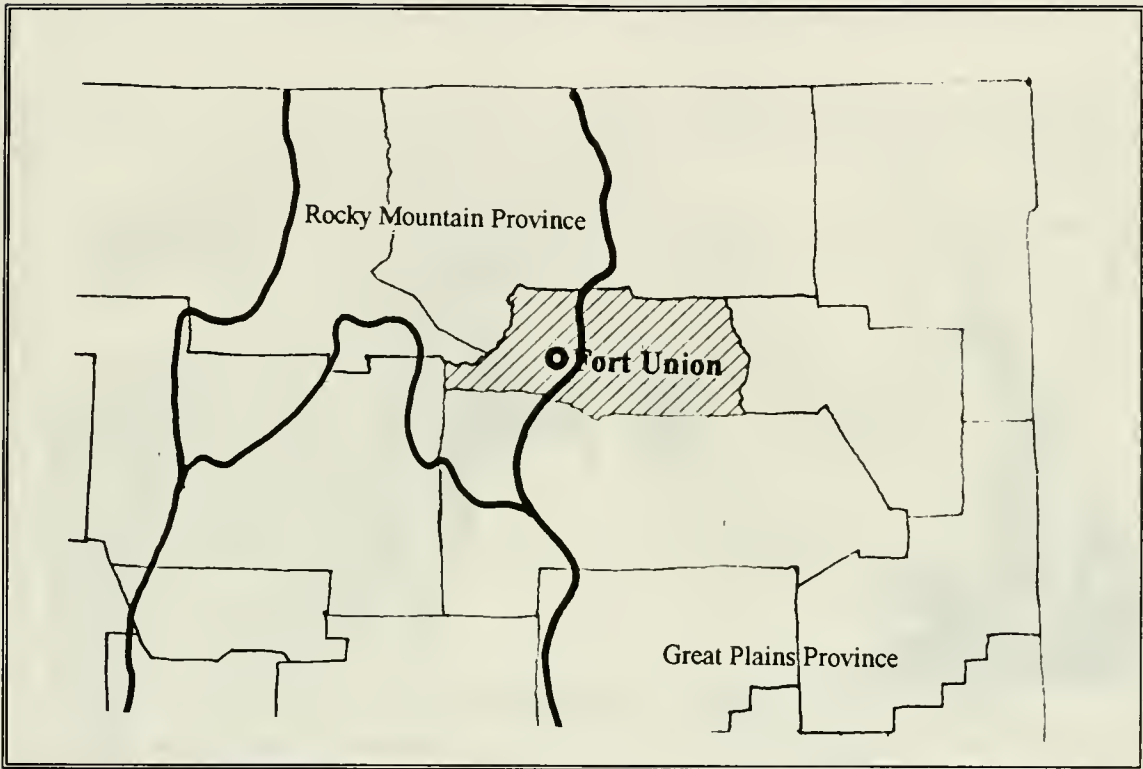


Figure 4: Physiographic Context (Source: Williams *New Mexico in Maps*)

### Physiographic Context

Fort Union lies at the border of two distinct physiographic provinces: the Southern Rocky Mountain Province and the Raton Section of the Great Plains Province.<sup>11</sup> (Fig. 4) This advantageous position is largely what makes Fort Union National Monument such a dramatic landscape and that which set the stage for the pre-historical and historical events which took place there. The view west from the site toward the Sangre de Cristo

<sup>11</sup>Jerry L. Williams, ed. *New Mexico in Maps*, 2nd ed., Albuquerque, NM: University of New Mexico Press, 1986.





Mountains is green and mountainous. The view east is toward the vast plains which appear to extend infinitely. Typical of such edge conditions, the landscape of Fort Union is a rich and complex ecosystem. Based on geologic, hydrologic, climate and soil conditions, the ecosystem supports a varied plant, animal and human population.

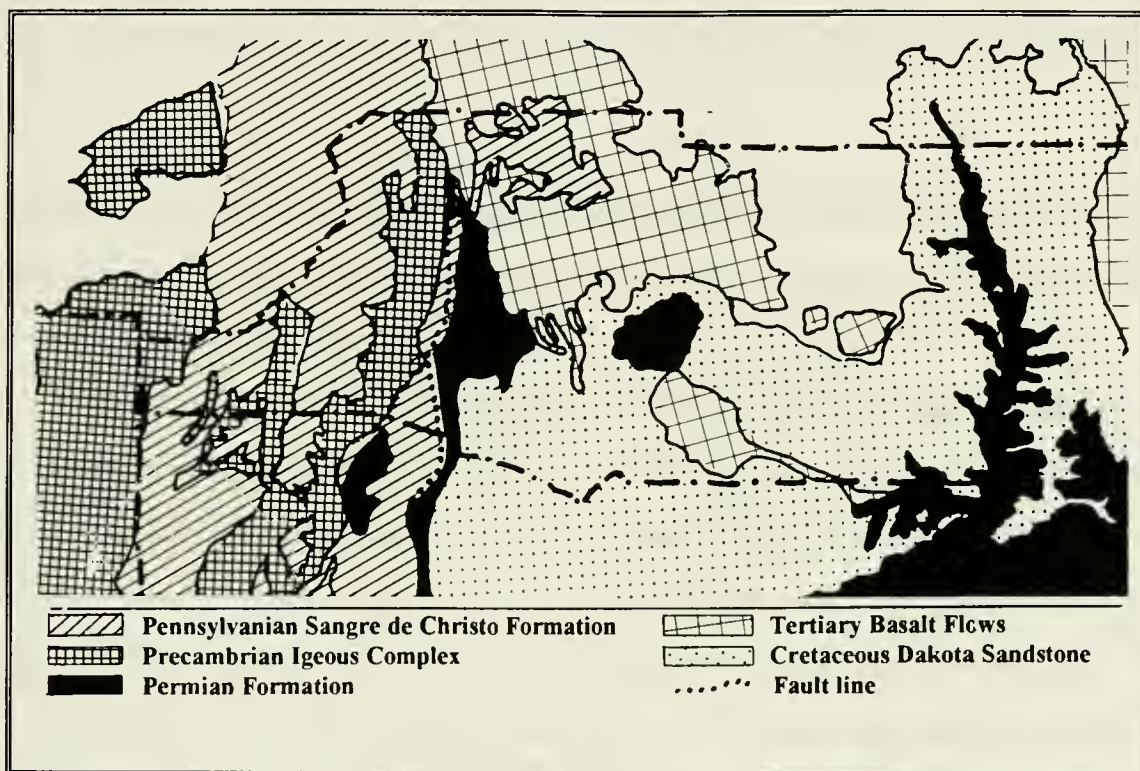


Figure 5: Geologic Plan Mora County N.M., (Source: New Mexico Geological Society)

## Geology

Fort Union National Monument and its immediate surroundings exemplify the great diversity of New Mexico's geology. "Exposed within the state's boundaries are Precambrian igneous and metamorphic rocks more than 1.5 billion years old, sedimentary strata representing each geologic period from Cambrian to Quaternary, and a variety of volcanic rocks erupted over the past 60 million years to within a few hundred years of the



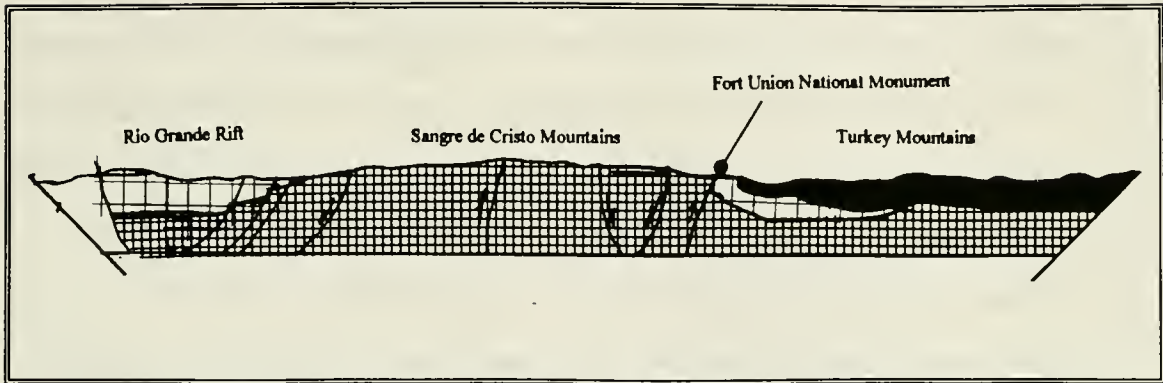


Figure 6: Geologic Section, Fort Union Cross Section, (Source: New Mexico Geological Society)

present."<sup>12</sup> This vast and distinctive geologic profile underlies the Fort Union landscape with its faults, volcanic formations and a variety of rock types, typical of a transition zone between mountain and plain. (Fig. 5)

Fort Union rests on the edge of a fault which in part divides the vast plains from the southern tip of the Rocky Mountains. (Fig. 6) This southern extension of the Rockies is known as the Sangre de Cristo range. Actually, some geologists disagree as to where the Rockies actually end, some marking the range as far south as El Paso, Texas.<sup>13</sup> Nonetheless, it is this specific portion of the north-south trending range, 130 miles in length from Salida, Colorado to Bernal, New Mexico, 32 miles in width between Santa Fe and Las Vegas, which forms the distinct western boundary of Fort Union. According to legend, the Sangre de Cristos were named when a soon-to-be-martyred Spanish missionary praying to God asked to see a sign. The mountains suddenly glowed fiery red, supposedly the color of the "blood of Christ."<sup>14</sup> Indeed, the mountain's distinctive red tint results from a varied formation of sedimentary rocks, many of which contain large

<sup>12</sup>Barry S. Kues and Jonathan F. Callender, "Geologic History," in *New Mexico in Maps*, 2d ed., ed. Jerry L. Williams, (Albuquerque, NM: University of New Mexico Press, 1986), 2.

<sup>13</sup>Love and Hawley, "Geology of the Sangre de Cristo Mountains," in "Field Guide for the Gateway Plains and the Santa Fe Trail," (unpublished guide to proceedings of Southwest Institute, University of New Mexico, Albuquerque, NM, 1991), 70.

<sup>14</sup>William deBruys *Enchantment and Exploitation: the Life and Hard Times of a New Mexico Mountain Range*, (Albuquerque, NM: University of New Mexico Press, 1985) 3-4.



amounts of iron. The mountains are composed of several small formations combined over several different building episodes. The highest point is Wheeler peak at 13,161 feet above sea level.

Virtually the only formation sitting between Fort Union and the vast plains to its east are the Turkey or Gallinas Mountains. These mountains are lacoliths, caused by a volcanic uplift that bulged the earth's surface. Volcanic activity produced a number of formations to Fort Union's north, perhaps most notably Black Mesa, named for the black basalt which spread across eroded deposits from the Sangre de Cristos. This range of volcanic formations, known as the Ocate field, is believed to have been active approximately 6 million years ago.

A geologic time line helps to explain how these formations and the resultant landscape came into being. The earliest recorded event, approximately 1,760 million years (m.y.) ago, was a period of mountain building volcanism which resulted in an early version of the Sangre de Cristos. These mountains were subsequently folded and pushed 40-50,000 feet below the surface where they were further broken and reshaped by subvolcanic rocks, primarily granite. These reshaped rocks, approximately 570 million years old, can still be seen in the deep recesses of the nearby Mora Valley. Seas developed approximately 320 m.y. ago, covering most of the region, although the Sangre de Cristo were above sea level at this time. These seas began a long period of deposition of calcium carbonates, sands, and silts which formed the earliest sedimentary rocks in the region. Subsequently, the North American and African plates collided breaking up the mountains, leaving some above and some below sea level.<sup>15</sup> The seas receded, eroding the highlands, and later returned carrying iron producing organisms which succeeded in tinting the sedimentary rock left behind. A second collision occurred 70 m.y. ago between the North

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<sup>15</sup>Harley Beall, "A Geologic Profile of the Fort Union Vicinity and It's Influence on the Occupants," unpublished paper, (Fort Union National Monument, NM, 1991), pp. 6-7..



American and Pacific plates which resulted in a second mountain building episode. Once again, the Sangre de Cristos rose up, warping the horizontal rock formations to the east and west and creating the Raton and Las Vegas basin which Fort Union sits in. This warping and tilting caused the sea covering most of the continent to recede to the east. These new mountains, attacked by wind and water, began to erode leaving deposits to spread both east and west. These deposits were in many cases covered by a relatively recent period of volcanism previously mentioned. This period of volcanism, which commenced as early as 20 m.y. ago, may have ended as recently as 0.8 m.y. ago. During this time, mini-glaciers carved and re-shaped the upper elevations of the Sangre de Cristos. The eventual melting of these glaciers contributed to the formation of drainage patterns which continues to this day. It is believed that the Sangre de Cristos are still uplifting and that the plains are increasing their inclination to the east, further dramatizing the formation of river valleys and other drainage patterns.<sup>16</sup> Although it is believed that volcanism in the area has ceased, nearby Capulin, a nearly perfectly cylindrical cinder cone, erupted as recently as 2,000 years ago. In the mid-1950's, noted cultural geographer and long time resident of New Mexico, J.B. Jackson reported that Capulin still emitted heat: "In winter, a small cloud of vapor is to be seen."<sup>17</sup> Jackson further noted that local lore claimed that unidentified elements in the ash from these eruptions made for excellent grazing conditions near the ancient craters.<sup>18</sup>

Fort Union itself sits on a relatively flat plain underlain largely by shales of the upper Cretaceous period. Wolf Creek lies at the base of the fault-defined bluff, cutting through the alluvial deposits from the Sangre de Cristos and volcanic fields to the north. Not surprisingly, the Forts' construction draws upon its surrounding geology. Mixed shale and limestone deposits, known as *caliche*, provided the lime for the mortars and plasters,

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<sup>16</sup>Beall, 1991)7-8.

<sup>17</sup>J.B Jackson, "High Plains Country," (the complete version of this article appears in:) *Landscape*, vol. 3, no. 3, Spring, 1954, pg. 16.

<sup>18</sup>Jackson, pg. 15.





having been reduced in lime kilns still seen around the site today.<sup>19</sup> Sand deposited along the creek provided aggregate for mortars and adobe. Dakota sandstone from the adjacent fault-defined bluff is seen in paving materials and building stone for First and Third Forts, while basalt outcroppings to the north were mined to construct the dam, whose remnants are still seen at the edge of Wolf Creek.

Geology, therefore, was a critical factor to the establishment of Fort Union on this site. As the following sections will discuss, climate, available ground water, soils, and vegetation resulted from the fundamental conditions brought about by these geologic events and conditions.

## **Climate**

Not only are the Sangre de Cristo Mountains a dramatic geological feature, they also substantially affect the climate at Fort Union. The short grass prairie indicates a high altitude, arid climate. As noted, Fort Union sits within 50 miles of the crest of the Sangre de Cristos and therefore is within the mountain rainshadow, evidenced by the deep green vegetation of the mesa. Fort Union receives approximately 18 inches of precipitation per year, the majority of which (approximately 14 inches) falls during the rainy season (July and August) when staff and visitors are treated to afternoon "tea showers" almost daily.<sup>20</sup> Many of these storms are accompanied by tremendous lightning and hail. These average annual precipitation amounts are consistent across the historical period, 1851 - 1891.<sup>21</sup> These seasonal rains dramatically affect the appearance of the prairie, turning it decidedly greener than its otherwise brown or golden color.

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<sup>19</sup>This comment is based on the research findings of Frank G. Matero, University of Pennsylvania during adobe and plaster stabilization project at Fort Union under a cooperative agreement with the SWRO.

<sup>20</sup>"Fort Union General Management Plan" Southwest Regional Office, National Park Service, Santa Fe, NM., 1985.

<sup>21</sup>Fort Union Fact File, Fort Union Archives, Fort Union National Monument, Watrous, NM.



Midsummer temperatures at Fort Union average approximately 80 degrees Fahrenheit during the day, and fall as low as 50 degrees in the evening. Winters are cold and clear. Dry air promotes daytime warming so that the temperature in the winter can sometimes reach 50 degrees in the shade and fall on average to 15 degrees in the evening. Although extreme heat and cold are not unknown any season, the climate is generally mild.<sup>22</sup>

Although the historic accounts of wind at Fort Union (sometimes referred to historically as "Fort Windy") seem sensational, Park Service Staff accounts provide verification. An historical account recorded: "Strong winds at Fort Union tore up and carried the sentry box at the guard house a considerable distance. A soldier who was carrying a cart near the hospital was lifted and hurled 30 feet against an embankment and severely injured."<sup>23</sup> This account is not dissimilar to the current superintendent's report that in the early 1980's, "two metal storage sheds were blown *over* the [eight foot plus] concrete block fence that surrounds the maintenance yard."<sup>24</sup>

The winds and blowing dust at Fort Union have been blamed for a host of medical problems and it is interesting to note that often doctors were the weather recorders at the Fort. In a quote from *Climatology and Mineral Waters of the United States*, the author / doctor goes on in some length describing the wind at Fort Union: "Wind from some quarter is almost constant, and the soil being light and sandy, is blown about in clouds of blinding, suffocating dust that irritates the air-passages, and is the cause of catarrh, pharyngitis, and bronchitis....I do not believe this post *can* be favorable for any kind of lung disease..."<sup>25</sup>

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<sup>22</sup>G.F. Von Eachen, "Climatological Summary, Climate of Valmora, New Mexico" U.S. Department of Commerce, Weather Bureau, Weather Bureau Airport Station, Albuquerque, 1962.

<sup>23</sup>Fact file, Fort Union National Monument..

<sup>24</sup>Harry C. Myers, Superintendent, Fort Union National Monument, correspondence with Author, March 1994.

<sup>25</sup>Bell, *Climatology and Mineral Waters of the United States*, NY: William Wood and Co., 1888, pgs. 206-207.



## Hydrology

As noted in the discussion of climate, New Mexico is a semi-arid region, receiving, on average, only 18 inches of precipitation per year. As a result of its underlying geology, the region has few constantly flowing streams and rivers and a shortage of ground water to support extensive development. Water, as a result, is a valuable key to understanding the New Mexican landscape as humans, plants, and animals closely follow its ephemeral patterns.

The Fort Union landscape has a distinct hydrologic character which is suggested by historical evidence. Known as "Los Pozos," or "the ponds," the site offered clear advantages to the military personnel charged with the responsibility of establishing Fort Union in the mid-1800's. The historical accounts of the Fort indicate that throughout its forty year habitation of the site, numerous wells were dug to augment the water supply.<sup>26</sup> Thus, it was water which initially attracted the American army to the site and the pursuit of water which evidently preoccupied the military throughout its use of Fort Union. Indeed, it is that same ephemeral character of the local ground water which has allowed the site to remain undeveloped and exploited by settlement and agriculture, maintaining essentially the historic scene that is in evidence today.

The key to "Los Pozos" lies in the geological discussion above. Across the majority of the site, layers of black and limey shale overlay the Dakota and Purgatoire sandstone formation. The highly permeable sandstone, 200-250 feet in thickness, is known to be an excellent source for well water, sealed by the impermeable shale layers. The artesian pressure in the uplifted sandstone escarpment immediately to the west of Fort

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<sup>26</sup>I.J. Winograd, "Occurrence and Quality of Ground Water in the Fort Union Area, Mora County, N. Mex. prepared for the United States Department of the Interior Geological Survey in cooperation with the Department of the Interior National Park Service, 1956, p. 6.



Union feeds springs throughout the vicinity, according to Geologist, I.J. Winograd.<sup>27</sup> His investigations indicate that the most prominent spring to be at the Andrew Marshall home, northwest of the Park boundary, discharging 4 gallons per minute (gpm). Aligning this spring to another, 100 feet to the north, and projecting a line parallel to the escarpment, Winograd was led to the conclusion that the fault resulted in the springs and seeps which feed Wolf Creek. Mineral analysis of the water at various springs across the site was found to be of similar character, indicating that the water was not springing from the shale formations. These shale formations are approximately 75 feet thick across the site, and in order to have proper well yields, wells must be dug an additional 100 feet into the sandstone beyond the shale.<sup>28</sup> We can then perhaps assume that the large number of wells dug in the Fort period may have indicated engineering limitations due to existing technology, although it has been argued that the Army dug multiple wells for the sake of convenience alone.<sup>29</sup>

Aside from the distinct form carved by Wolf Creek, the single greatest indication of water moving above ground at Fort Union is the continuing formation of arroyos. Arroyos are an eroded ditches, resulting from storm water runoff. Common throughout the Southwest, these formations often coincide with paths through vegetation or ruts made by animals and people. Debate exists as to when arroyos first occurred, some arguing that these are an indigenous part of the Southwestern landscape, others arguing that they first came about as a result of subsistence farming by Hispanic settlers in the late 18th century, and accelerated by subsequent overgrazing and disturbance.<sup>30</sup> In many

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<sup>27</sup> Winograd's study is the only existing detailed study of the site hydrology. Winograd was hired by the Park Service to investigate a site for a new well at Fort Union in 1956. He investigated a number of wells and springs across the site as well as Wolf Creek.

<sup>28</sup> Winograd, p. 11.

<sup>29</sup> Harry C. Myers, Superintendent, Fort Union National Monument. Myers notes that the historic GPM requirements were extremely low relative to today's requirements and that the historical record does not indicate inadequate well yields, thus leading him to believe that the proliferation of wells was solely for convenience. Myers does, however, indicate that historic wells were only dug to 60 feet, placing them within the shale sequence.

<sup>30</sup> deBruys, pp. 215-234.





cases, historic Santa Fe Trail ruts are now deeply incised arroyos, carved 20 feet deep or more into the prairie. Several of these arroyos have received stabilization efforts by the Park and adjacent Fort Union Ranch, yet the problem is a continuing one, despite healthy vegetative growth, proper ranching practices, and some restorative success.

## Soils

Few physiographic elements at Fort Union received as much notice historically as did its soils -- specifically when those soils became barren, de-vegetated and airborne. Katie Bowen and her husband were residents at Fort Union in its earliest days, (August 1851-October 1853). In letters sent home she wrote: "We escape the constant dust if nothing more, for in this territory nearly all the time we have high winds and the soil becomes so dry and powdered that the air is filled with clouds of the most disagreeable kind of dust...the ground is much like an ash heap on the surface."<sup>31</sup> A young enlisted man had similar comments almost twenty years later: "...occasionally a wind and sand storm passes by sufficiently strong to un roof [sic] a house, but that is considered nothing here. Most every person wears a pair of Gog-els, [sic] to protect their eye's [sic] from the sand."<sup>32</sup>

The soils at Fort Union, typical of the low grass prairies on the Great Plains, are classified as Aridic Argiustolls. These soils are largely comprised of silt and stony loams formed in alluvial material from the adjacent basalt formations and other eolian material. A typical soil profile would reveal an upper three inch horizon of dark loam, a gradual lightening of a two foot subsoil which in some units varies from a light brown loam to

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<sup>31</sup>Catherine Bowen, "My Dear Mother: The Letters Home from Catherine and Isaac Bowen, 1851-1853, from Fort Union, New Mexico Territory," Fort Union National Monument Archives, Fort Union National Monument, Watrous, NM, pgs 11 & 15.

<sup>32</sup>Eddie Mathews Letters, Fort Union National Monument.



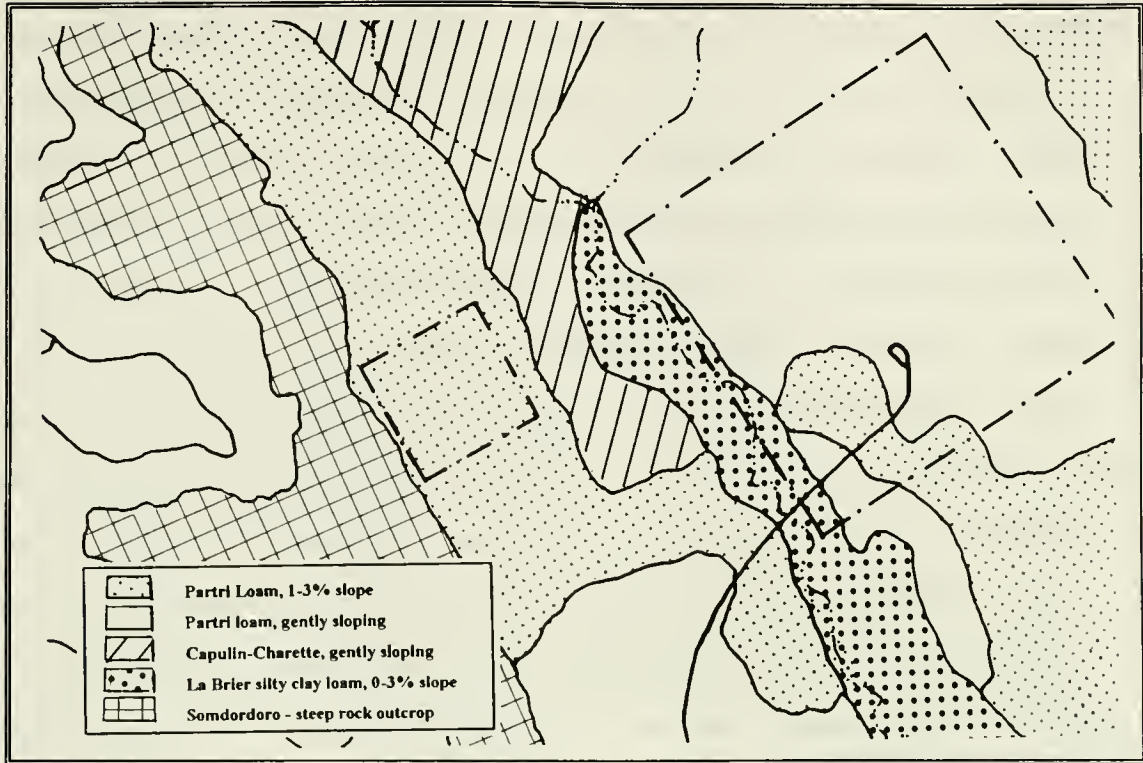


Figure 7: Fort Union Soils (Source: SCS)

silty-clay to clay loam.<sup>33</sup> Although mollisols are classified as having seven inches of dark loam, it is probable that a substantial amount of the upper horizons were lost to wind and water erosion during the historical period.<sup>34</sup> Overall, the soil textures vary from fine sand to stoney, range in depth from very shallow to moderate and have on average medium water intake and holding capacities.<sup>35</sup> These soil units vary according to slope, depth to bedrock, and parent material. Historical land uses indicate these soil variations. For example, one of the lime kilns associated with the Third Fort sits logically on soils rich in

<sup>33</sup>New Mexico State University Agriculture Experiment Station in cooperation with the Water Resources Research Institute and Soil Conservation Service, Report no. 205, *Soil Associations and Land Classification for Irrigation Mora County*, pp. 24-25.

<sup>34</sup>This conclusion was reached with the advice of Dr. Arthur Johnson, Soil Scientist, Geology Department, University of Pennsylvania, November 1993.

<sup>35</sup>United States Department of Agriculture Soil Conservation Service Albuquerque, NM, Cooperative Agreement between the Mora Wagon Mound Soil and Water Conservation District and Fort Union National Monument, 3/1/67.



calcareous material. The adobe fields occupy a position north of the Park boundary where slopes are minimal. These soils provided larger amounts of the light brown, clayey soil horizons used for adobe production. A more refined mapping of these soils according to their qualities for adobe production might help explain the chronology of soil removal from the adobe fields as well as the deterioration patterns of the Forts' adobe structures.

As the historical accounts and arroyo formation indicate, these soils are unstable when de-vegetated. Indeed, virtually any disturbance of vegetation or soil is evident, particularly by aerial photography, for many years. For this reason, the Soil Conservation Service, the National Park Service, and private ranches such as the Fort Union Ranch, have both independently and through partnerships, attempted to mitigate the erosion of these soils. Techniques employed at Fort Union have ranged from grass seeding and mulching to various constructions including diversions, lined waterways, and brush racks which ultimately attempt to either slow down or stop the runoff of water completely.<sup>36</sup> These efforts, although in some cases visually unappealing, have hindered the progressive erosion of arroyos in and around Fort Union National Monument.

The relatively healthy, minimally grazed prairie within the park boundaries eliminates the noisome dust that historic accounts describe. In this respect, Fort Union National Monument provides a model of leadership and partnership to Mora County in the conservation and management of its land and resources.

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<sup>36</sup>SCS, pp. 1-2.





*Figure 8: Typical Fort Union Prairie Vegetation (Photo by Author)*

## **Vegetation**

In her thorough historical and contemporary inventory and study of vegetation at Fort Union National Monument, Sandra Schackel describes the "climax," the devastation, and the return of vegetation at Fort Union. Schackel's study must underlie any proposal for management and interpretation at Fort Union National Monument, given its essential documentation of what grew and still grows on the "grassy plain."<sup>37</sup>

The physiography of Fort Union dictates its vegetation: aridic soils, high altitude, and low average precipitation yield the low grass prairie of Fort Union. Adjacent mountain formations bear pinyon-juniper trending to Ponderosa pine Forests which provide a pleasing and beneficial contrast to the seemingly unending horizon of the Great Plains. It was this contrast and variety of vegetation along with "Los Pozos," a readily

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<sup>37</sup>Sandra Schackel, "Historic Vegetation at Fort Union National Monument," National Park Service, Southwest Region, Santa Fe, NM, October 1983.





available source of water, which made the site attractive to both nomadic Indians as well as the military.

It appears that the land was capable of yielding produce and grain but that the military was unfamiliar with appropriate farming and grassland management techniques necessary to take advantage of its bounty. The short grass prairie ecosystem is more fragile and fickle than the early military personnel realized. To Eastern soldiers with little experience in the new western territories, it appeared that the grasses were inexhaustible. As Katie Bowen's accounts suggest, only a few months after First Fort was established, blowing dust, (indicating bare soils) was a nuisance. The War Department mandated that every military Post in the west raise sufficient produce to supply its men in order to reduce costs, but this proved futile at Fort Union. The Fort's unsuccessful farming operation was located in Ocaté, north of the Fort in the Mora Valley. This same area was successfully farmed by *nativos* and was at one time referred to as the "breadbasket of New Mexico."

As Schackel's study indicates, the majority of historical accounts of vegetation give vague references to climate, grasses, and post gardens, "Few precise listings of the valley's vegetation appear in the historic record."<sup>38</sup> Schackel combined various government reports to summarize the following list of historic species: grama grass (*Bouteloua oligostachya*) Switch grass (*Panicum virgatum*), Red-top (*Sporobolus airoides*), Blue-stem or Blue-Grass (*Agropyrum glaucum*), Antelope grass (*Muhlenbergia gracillima*), Buffalo grass (*Buchloe sp.*), Wild Licorice (*Glycyrrhiza lepidota*), pinyon, juniper, and various wildflowers. According to the 1985 General Management Plan, no threatened or endangered plant species were present at Fort Union at the time of that study.

Although Schackel generally refers to the condition of the Fort Union prairie as "good," what makes the prairie significantly different today is the high percentage of "invaders," or "new plants who appear in bare soil."<sup>39</sup> Schackel notes that, during the

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<sup>38</sup>Schackel, pg 14.

<sup>39</sup>Schackel, pg. 63.



historic period, grasses grew as a continuous mat: "Ground cover was nearly continuous one hundred years ago...today, the grama grows sparsely in clumps."<sup>40</sup> This discontinuous cover invites invader species such as Snake Weed (*Gutierrezia sarothrae*), Sagebrush, Oak, Wolftail, Threawns and Silver Bluestem.

It has been documented that the vegetation along significant trans-continental routes such as the Santa Fe and Oregon Trails to a large extent emigrated along with the thousands of travelers and traders who passed by. The military attempted to introduce some ornamental plantings at Fort Union such as Cottonwood trees and cultivated flowers and grasses with limited success due to the harsh climatic conditions.<sup>41</sup> Despite these introductions, many native species remain at Fort Union although generally in an altered state. Further research might investigate the non-native plant species which traveled the Santa Fe Trail and naturalized in the Fort Union valley.

An impressive display of wildflowers especially in late summer not only highlight the prairie but serve as indicators of the to un-excavated ruins and artifacts at Fort Union. The Fiesta Daisy or Annual Sunflower (*Helianthus annuus*), for example, responds to subtle changes in moisture, often calling out historic trail ruts otherwise difficult to see. By seeking these low points in the landscape where water flows, this and other species also provide erosion control, mitigating arroyo formation.<sup>42</sup>

Despite increasing efforts to effectively manage range land in New Mexico by land owners such as the Fort Union Ranch, economic pressures in this relatively poor state constantly push grazing practice below standard. Fort Union National Monument provides one of the few examples of land left largely ungrazed for the past forty years in Mora County. In contrast to some area ranches where entire fields turn yellow when

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<sup>40</sup>Schackel, pg. 66.

<sup>41</sup>Schackel, pp. 15-19. Historic photos indicate that a lone standing historic tree survived on the grounds of the Third Fort until the mid 1900's.

<sup>42</sup>Gail D. Tierney and Phyllis Hughes, *Roadside Plants of Northern New Mexico*, Santa Fe: Lightning Tree, 1983, pg. 57.



invasive snake weed goes into bloom, the Monument's land management serves as a model of vegetation conservation.<sup>43</sup>

## **Wildlife**

The Fort Union landscape supports varied populations of insects, birds, reptiles and mammals. Typical of an edge environment, Fort Union is home to species which frequent both grassland and forested environments. Most frequently sighted mammals include antelope, ground squirrels and rabbits each of which present their own set of management problems at the Monument. Ground squirrels and rabbits tend to burrow into trails and ruins, resulting in accelerated deterioration. Antelope face fewer and fewer natural predators and, as unprotected species, are hunted on adjacent Union Land and Grazing Company lands. The local coyote population is evident mostly at night when they can be heard yelping and traveling through the employee housing area. Raccoons raid trash cans at night. An occasional elk can be seen early in the morning grazing along the entry road to Fort Union. These and other grazing species share the vast ranch lands with cattle.

Over fifty species of birds have been sighted at Fort Union. These vary from large predators such as Redtail Hawks and an occasional Bald Eagle to smaller species such as hummingbirds. Celebrated and feared is the reptile population, most notably the rattlesnakes. Although Fort Union's only recorded incident of a rattlesnake bite occurred in 1983, the park staff makes rigorous efforts to inform and warn visitors about rattlesnakes, keeping visitors away from the ruins and on the trail network.<sup>44</sup> There are an average of 25 "rattlesnake" sightings per year, although this number might be suspect, as other snake species adopt a rattlesnake-like posture when confronted.<sup>45</sup> Hog-nose snakes

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<sup>43</sup>Seasonally, because of policies against spraying insecticides, Fort Union National Monument becomes an infestation point for insects such as the Range Caterpillar which are a nuisance to ranchers.

<sup>44</sup>General Management Plan, 1985, pg. 76.

<sup>45</sup>General Management Plan, 1985, pg. 76..



and others also burrow in ruin walls and accelerate deterioration. In any case, few visitor responses are as excited as those related to snake sightings. This excitement reinforces the degree to which wildlife contributes to the visitor experience at Fort Union.

Historical accounts present a picture of Fort Union's wildlife similar to that which is seen today, including the cattle. Because of the abundant water supply, "Los Pozos" was a chosen spot for wildlife and travelers alike. Historical accounts frequently refer to hunting as a favored pastime among army personnel, often in the adjacent Turkey Mountains.

## **Land Use**

In many ways, the adjacent wildlife population is more evident than the local human population at Fort Union. Mora County is sparsely populated, only 2.2 persons per square mile.<sup>46</sup> The largest nearby population is located in Watrous, historically known as La Junta prior to the arrival of the railroad. An 1870 census recorded 202 households in Watrous, however, today Watrous has a population of less than 100. A similar trend was evident in nearby Loma Parda. The 1870 census indicated 94 households in Loma Parda. Today Loma Parda is inhabited by only one man for only a portion of the year.<sup>47</sup>

The majority Mora County is used for grazing with small portions reserved for commercial forestry.<sup>48</sup> As in the historical period, much of Mora County is privately owned by ranching concerns, while the Federal Government controls areas of the wooded western edge and far eastern edge of Mora County, (8.6% of the total 1,244,160 acres).<sup>49</sup> Mora County is amongst the poorest in the state with an unemployment rate hovering at

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<sup>46</sup>Williams, pg. 150.

<sup>47</sup>Harry C. Myers, Superintendent, Fort Union National Monument, Watrous, NM, 1994.

<sup>48</sup>Williams, pg. 259.

<sup>49</sup>Williams, pgs. 260-1.





33%.<sup>5</sup> Of those employed, almost 40% are involved in agriculture, 20% in non-agriculture, service related businesses. It should be noted that, under the direction of the current Superintendent, the Monument has offered both seasonal and permanent employment to local residents. Although these demographics may seem peripheral to traditional Park planning documents, they are relevant to this study as they provide a socio-economic indicators of the existing cultural landscape of Fort Union National Monument.

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<sup>5</sup>The New Mexico Community Foundation's statistics from Jerry Bradley of the New Mexico bureau of Employment note a 38% Mora County unemployment rate for February, 1991 and a 29% rate in May, 1992, versus a statewide rate of 7%.



## Chapter 2

### HISTORICAL BACKGROUND

#### Early Fort Union Valley

The Jicarilla Apache and other Indians made the valley where Fort Union sits a place of passage long before the Santa Fe Trail was "opened" by William Becknell in 1821. Prior to the 13th century, Puebloan-type Indians settled just south of the Fort location along the Sapello and Mora rivers.<sup>51</sup> This Pueblo-type settlement is significant not only because it establishes significant early Native American habitation in the Fort Union vicinity but also for its "anomalous" origin.<sup>52</sup> James Gunnerson writes that despite the fact that these ruins sit within the same drainage basin, the settlement does not seem to have originated from Taos to its north. Rather, the Watrous Pueblo yielded artifacts from the west, tying it culturally to the Santa Fe-Galisteo area.<sup>53</sup> The Pueblo-like settlement in Watrous may have been predated by still earlier settlements. Inconclusive archaeological finds indicate several occupations of the sites "covering a long period of time."<sup>54</sup> These early occupations contributed significant cultural resources to the Fort Union area including a petroglyph rock located "on a high cliff above the Sapello River" southwest of the National Monument<sup>55</sup>.

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<sup>51</sup>In the early twentieth century, various archaeologists attracted to the significant finds at Pecos Pueblo and elsewhere in New Mexico expanded their investigations to include areas such as Las Vegas and Watrous. These archaeologists included Adolphe Bandelier, Warren K. Moorhead, J. Alden Mason, W.C. Holden, E.B. Renaud, H. P. Mera, C.A. Amsden, A.V. Kidder and Robert H. Lister. See "Notes on the Archaeology of the Watrous Valley, New Mexico," *El Palacio*, Santa Fe, NM: School of American Research, vol. 55, February 1948, pgs. 35-41.

<sup>52</sup>Gunnerson, James H., *Archaeology of the High Plains*, published paper, Colorado State Office, Bureau of Land Management, Denver, CO., 1987, pg. 136.

<sup>53</sup>Lister, pg. 35; Gunnerson, pg. 136.

<sup>54</sup>Lister, pg. 41.

<sup>55</sup>Lister, pg. 36.



Pueblo settlements were undoubtedly attracted to the foothills because of the rich ecological conditions. Gunnerson notes that sites located at the mouth of canyons carved by drainage from the Sangre de Cristos were favored for Indian settlement because of fertile soil deposits and ample water resources. The Sangre de Cristo foothills afforded Pueblo settlements ample small game and easy access to bison on the Great Plains. Interestingly, buffalo herds did not venture west into the short grass prairie of New Mexico. This forced hunting parties to travel east to find their prey.

As Plains Indians began to appear in New Mexico, trade commenced between Indian Nations. Apache sites in the area date from 1500 -1600.<sup>56</sup> Spanish explorers described Jicarilla Apaches in the area after approximately 1700, "...with a variety of house types, irrigation, and abundant crops."<sup>57</sup> With the appearance of Plains Comanches in the mid 17th century, Gunnerson writes: "The semisedentary Apaches were forced to abandon their villages and for the rest of the century Comanches were the dominant force, with other tribes entering the area only occasionally."<sup>58</sup> Alliances between various tribes often shifted and trade amongst Plains and Pueblo Indians became profitable. Passes in the Sangre de Cristo Mountains afforded Plains Indians access to the Pueblo settlements along the Rio Grande. The northern pass from Taos Pueblo to the plains went by way of La Veta pass and Apishaba Canyon in Colorado. The middle pass, also from Taos, crossed the mountains and headed north to Purgatoire Canyon. The southern pass from Picarus Pueblo along the Mora River used either Glorieta Pass (near Pecos Pueblo) or a more northerly pass through the Cornudo Hills to reach the Canadian river. This last route would have passed directly north or south of the Fort Union Valley. This type of

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<sup>56</sup>Gunnerson, pg. 136.

<sup>57</sup>Gunnerson, pg. 136.

<sup>58</sup>Gunnerson, James H. and Dolores A. Gunnerson, *Ethnohistory of the High Plains*, published paper, Cultural Resources Series no. 26, Bureau of Land Management, Denver, CO., 1988, pg. ix.



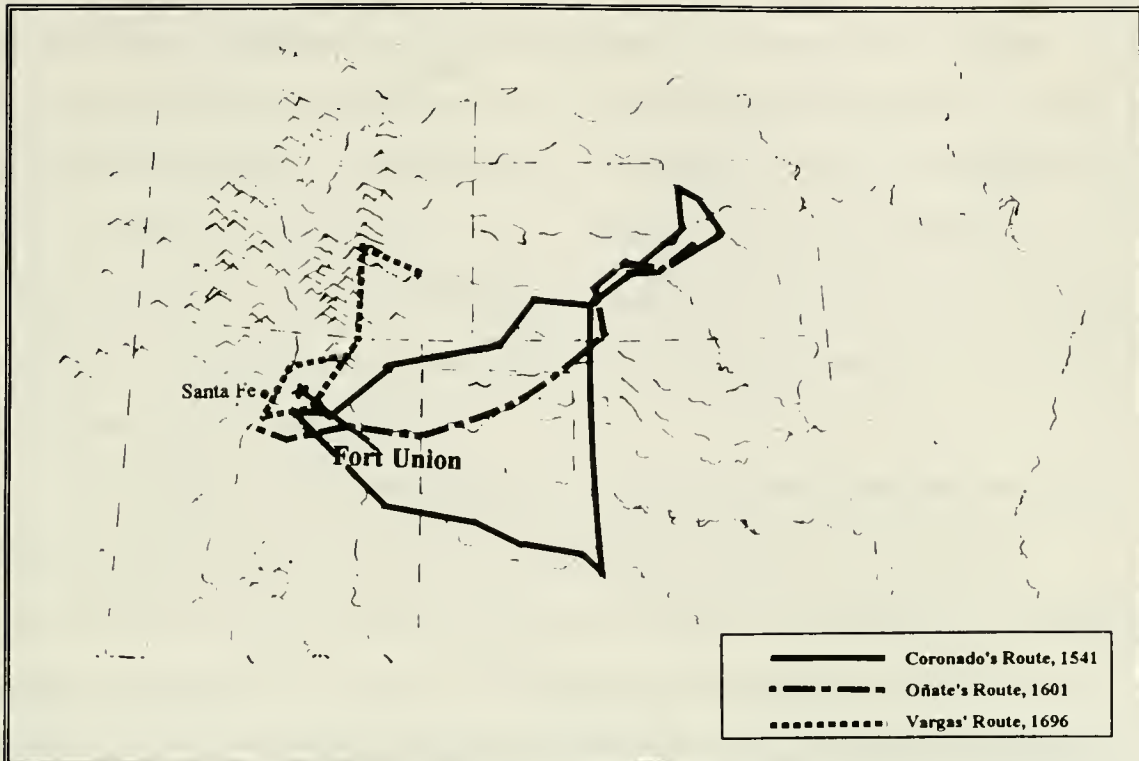


Figure 9: Routes of Early Spanish Explorers (Source: Chávez, *Quest for Quivira*)

west/east exchange begins to suggest a much earlier "opening" of the Santa Fe trail by Native Americans.<sup>59</sup>

Spanish explorers arrived in the region in 1540 when Vázquez de Coronado ventured north from Mexico in search of Quivira, "those civilized and rich peoples of the north."<sup>60</sup> The Spanish had financial as well as religious motives in their quest, both of which they found answered by the pueblo structure.<sup>61</sup> They discovered and temporarily settled with the Pecos Pueblo where they acquired a guide, "the turk," who offered to help them find the fabled Quivira.<sup>62</sup> The campaign which ensued sent Coronado hundreds of miles across New Mexico, parts of Texas, Kansas, and Missouri.<sup>63</sup> (Fig. 9) Again, like the

<sup>59</sup>Gunnerson and Gunnerson, pg. ix.

<sup>60</sup>Thomas E. Chávez *Quest for Quivira*, Tucson: AZ: Southwest Parks and Monuments Association, 1992, pg. 3.

<sup>61</sup>Chavez., pg. 3.

<sup>62</sup>Chavez, pg. 5.

<sup>63</sup>Chavez, pp.6-7.





efforts of Native Americans, these Spanish explorations further established a cross continental trail, precursor to the Santa Fe Trail. Despite their fascination with the vast plains and buffalo (which they referred to as "cows"), the Spanish were disappointed that their envisioned city of gold turned out to be a dusty town near present day Lyons, Kansas.<sup>64</sup> They left missionaries behind and returned to Spain. Some of the missionaries later retraced Coronado's trail in search of the Plains Indians and were killed by the Pecos for ministering to their enemies.<sup>65</sup>

Following Coronado, several other official and unofficial expeditions from New Spain eventually charted the entire Rio Grande Valley, Sangre de Cristo range, and beyond. (Fig. 9) In the one hundred and forty years that it took the Spanish to acquire this intricate knowledge of New Mexico, the Pueblo Indians grew disillusioned with their imposed governors and finally staged a unified revolt in 1680. The Pueblos managed to evict the Spanish for over a decade, marking a watershed in Native American and Spanish relations. Various factors including the perceived threat of the French and English and the very real threat of the newly arrived Comanches re-established cooperation between the Spanish and Native Americans, this time on more equitable terms. A Mora County historian describes the importance of this historic partnership in his own community:

...it [was] the first bond of trust between the Spanish re-occupation and the Picuris...Because of this bond, contrary to Spanish law, the Picuris invited the Spanish to settle on Pueblo land. In time, this bond strengthened and they shared their fortunes, their land, and water, their triumphs and failures, in flood and famine. They shared the dangers of the Comanches as they came to dominate the plains...The *nativos* shared their customs, their respect and their religion. In a word, they became one people, in violation of Spanish law."<sup>66</sup>

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<sup>64</sup>Chavez, pp.6-7.

<sup>65</sup>Chavez, pg. 8.

<sup>66</sup>Mike Montoya, "Preservation of a Trail Era Community, Mora New Mexico," unpublished paper, Fort Union National Monument Archives, Watrous, NM., 1990, pgs. 3-4.



This combination of cultures quite clearly affected the Fort Union region. As cross-continental traffic became commonplace and threats to small settlements increased, it became advantageous for the Native American and Hispanic (nativo) populations to unite. The bonds which formed remain a strong part of the cultural legacy and ethnography of the region. Further, these cultural bonds are relevant to this study in that they were made visible and tangible in various human responses to the landscape. Adobe architecture, acequia systems,<sup>67</sup> and dryland agriculture evidence a merging of cultural traditions and techniques which enriches the cultural landscape of not only the Fort Union vicinity but the entire Southwest.

### **The Santa Fe Trail**

In 1821 Mexico removed trade barriers with the United States and the rest of the world. This declaration was perhaps anticipated by traders and trappers, many of whom had risked the confiscation of goods, imprisonment, and banishment by illegally crossing the border.<sup>68</sup> By the time the declaration was announced, William Becknell was packed and ready to go. Becknell, referred to as the father of the Santa Fe Trail, was deeply in debt and seriously in need of leaving town.<sup>69</sup> "William Becknell's bold ride to Santa Fe in the summer on 1821 was a gamble in desperation."<sup>70</sup> Becknell exchanged goods in Santa Fe at enormous profit and returned in haste to Independence to reload. Becknell's success was rumored across the country and soon thousands of others followed.

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<sup>67</sup>Acequias are communal irrigation systems. The Mora acequia (1818) is a considerable historic resource recently documented and nominated to the National Register by the New Mexico SHPO. "This acequia was carved out of solid rock in places and was truly an engineering marvel considering the tools and technology available." (Montoya, pg. 5)

<sup>68</sup>William E. Brown *The Santa Fe Trail*, St. Louis, MO: Patrice Press, 1988, pg. 6.

<sup>69</sup>Marc Simmons *Along the Santa Fe Trail*, Albuquerque: NM: University of New Mexico Press, 1986, p. 8.

<sup>70</sup>Simmons, pg. 9.



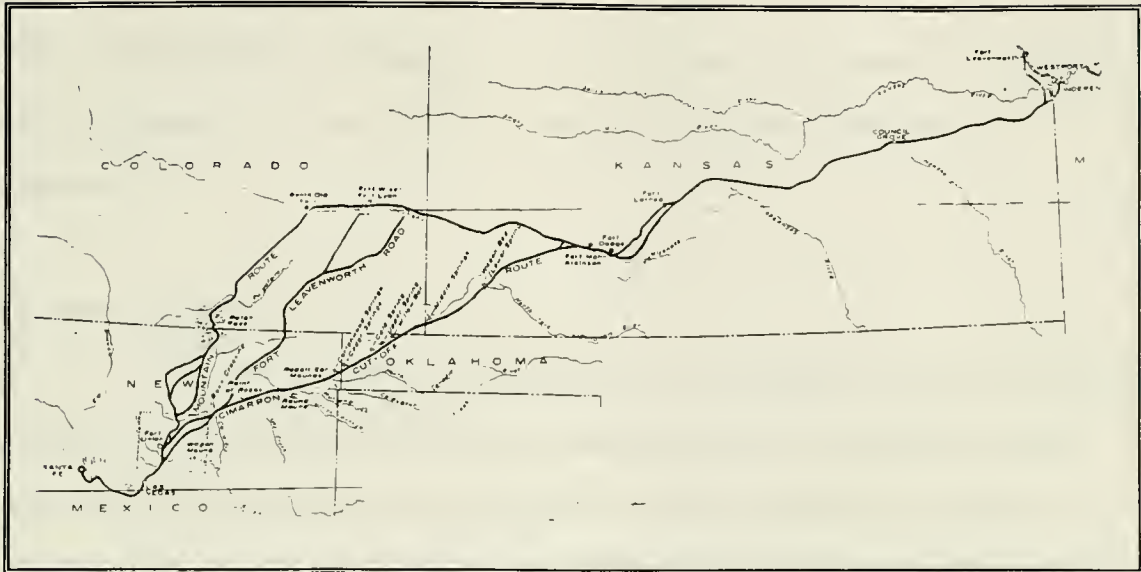



Figure 10: Santa Fe Trail into Fort Union (Source: Robert Utley) 

Of course, the Santa Fe Trail was equally exciting to Mexican traders who jumped at the opportunity to buy goods in the east, often from as far away as Europe, to sell back in New Mexico and Mexico. A favorite gathering point was near the future site of Fort Union where traders would wait at the crossing of the Sapello and Mora Rivers in order to joins others and cross the prairie safely in numbers. (Fig. 10) Groups tended to ward off attacks from Plains Indians.

Over the next two decades, the route to Santa Fe, albeit subject to Indian attack and harsh environmental conditions, became well traveled by traders and travelers. In 1844, James Polk was elected President of the United States on a platform of "Manifest Destiny" and two years later, war was declared with Mexico. Kenneth Davis writes: "The war with Mexico was the centerpiece of the administration of James Polk..."<sup>71</sup> The Santa Fe Trail became a major military artery.<sup>72</sup> Trail historian William Brown writes: "Truly the Santa Fe Trail was the path of empire, and the conquest of New Mexico was its climactic period...The war, in effect, killed old trade through Santa Fe. Henceforth, the

<sup>71</sup>Davis, pg. 140.

<sup>72</sup>Brown, pg. 42.



Santa Fe Trail would be principally the route of freighters bringing goods and supplies to the newly acquired American territory."<sup>73</sup> Fort Union was born in this new era of commerce.

### **The Mora Land Grant**

It is necessary to begin this discussion of the Mexican Land Grants in New Mexico with the acknowledgment that the history of these grants forms an extremely complex legal morass. Because of the various changes in government, systems of ownership, etc., there may never be a satisfactory resolution to the question of ownership of much of the land that fell within the grant system. A brief discussion here, however, sheds light on the tense and emotional atmosphere which surrounded the founding of Fort Union in New Mexico Territory.

In 1835, Mora Valley was officially "re-settled" when a group of 76 native family heads were granted the lands by Mexican Governor Albino Perez in order to legitimize pre-existing land claims.<sup>74</sup> These lands were re-settled to the extent that various previous efforts to occupy the Mora Valley by natives were constantly thwarted by Plains Indian insurrection and increasing pressure from French and American trappers and traders coming across the trail and exploiting the resources of the Valley.<sup>75</sup> The Mora Grant established a structure and process by which new settlers such as Alexander Barclay, who acquired the land on which Fort Union was established, could legally acquire land.

Grant historian, Clark Knowlton writes: "During the last decades of the nineteenth century, the local grant inhabitants developed a semi-subsistence economy based upon intensive farming of small agricultural plots and the grazing of livestock, primarily sheep,

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<sup>73</sup>Brown, pg. 49.

<sup>74</sup>Montoya, pg. 6; Clark S. Knowlton, "The Mora Land Grant: A New Mexican Tragedy," in *Spanish and Mexican Land Grants and the Law*, Malcolm Ebright, ed., Manhattan, KS: Sunflower University Press, 1989, pg. 60.

<sup>75</sup>Montoya, pg. 6; Knowlton, pg. 60.





upon the common lands of the grant."<sup>76</sup> The area was semi-subsistence to the extent that hunting parties continued to travel to the Plains to hunt Buffalo and only a meager agricultural surplus was sold or traded with Plains Indians. As the Santa Fe Trail became an increasingly traveled route, a new market opened to the Mora Land Grantees encouraging the development of greater surplus with which to trade: "...inhabitants prospered from the sale of grain, flour, hay, vegetables, and livestock to travelers. Many young men from the villages found employment as teamsters, guides, and hunters diversifying the local occupational structure."<sup>77</sup>

As Knowlton further points out, the Mora villages' proximity to the trail made them subject to trail thieves and less friendly travelers. Although the Mora Land Grant inhabitants were made American citizens in 1846, travelers at the time reported that the natives of the Mora Valley were often hostile, having been exploited by Americans, specifically Texans on several occasions.<sup>78</sup> A small revolt against American occupation spread from Taos to Mora in 1847: "In Mora itself, seven American Santa Fe traders passing through the community were killed." An American military unit retaliated, eventually destroying the town on February 1 (the inhabitants had already fled to the mountains).<sup>79</sup> This event was followed by an increased American Army occupation of the New Mexico Territory and the establishment of Fort Union.<sup>80</sup> It must have been a bloody time: in the 1870's a soldier described the Fort Union cemetery, "In looking at the number of graves and reading the names and epitaphs...I noticed the majority of them were buried in 1848 & 50. I also counted over forty graves marked Unknown."<sup>81</sup> The dates on the graves begin to describe the violence in the valley prior to the establishment of the Fort.

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<sup>76</sup>Knowlton, pg. 60.

<sup>77</sup>Knowlton, pg. 60.

<sup>78</sup>Knowlton, pg. 61. Montoya documents an attack on Lo Demora by Texan Freebooters: "This obviously did not endear our community to Texans, and certainly laid groundwork for our perceptions of Norteamerican appearing on our eastern frontier." (Montoya, pg. 7)

<sup>79</sup>Montoya, pg. 7.

<sup>80</sup>Knowlton, pg 61.

<sup>81</sup>Mathews Letters, Fort Union National Monument, Watrous, NM.



Today only one civilian grave remains in the Fort Union cemetery. When the army departed, the graves of army personnel were moved to a National cemetery. Clearly, our understanding of the mood and community relations of the first troops at Fort Union is substantially informed by these events.

Although the Treaty of Guadeloupe Hildago (by which the United States acquired New Mexico) was to guarantee native land ownership and civil rights, land speculators managed to acquire much of the land grants. Such land speculation led to what Knowlton refers to as "a New Mexican tragedy."

In 1854, a Surveyor General of New Mexico was appointed. The Surveyor requested evidence of all titles and claims which the Mora Grantees submitted.<sup>82</sup> A virtual tragedy of errors and omissions ensued. Evidently shocked by the enormous size of the Mora Grant, (827,621 acres) in 1861, the Surveyor General requested a re-survey of what he considered a questionable western boundary.<sup>83</sup> This process of re-surveying continued for over forty years during which time a wealthy group of Anglos referred to as the Santa Fe Ring led by Stephen B. Elkins and Thomas C. Catron managed to exploit the native land holders, eventually acquiring title to all common lands and eventually the lion's share of the entire grant. Knowlton credits the complete economic and social collapse of the nativo community on these events:

The loss of access to the natural resources of the common lands of the Mora community land grant severely damaged the rural economic system, structured on the basis of semi-subsistence agriculture...The first response of the village people was the gradual drifting on men into migrant farm labor and shepherding in nearby western states. Some entered nearby mines or worked on the railroads, a few migrated to western cities in search of employment. The wives and children of the married travelers carried on agricultural activities to the best of their ability.<sup>84</sup>

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<sup>82</sup>Knowlton, pg 62.

<sup>83</sup>Knowlton, pg. 62.

<sup>84</sup>Knowlton, pg. 70.



Throughout this debacle, native New Mexicans developed distrust toward not only the General Land Office but the entire Anglo government and land ownership processes which remains today. Many *nativos* still refuse to record titles for fear that their ownership will be questioned or deemed null and void.<sup>85</sup>

The portion of the Mora Grant which Fort Union occupied during the historic period, 1851-1891, belonged to Alexander Barclay. Barclay was a colorful character described by his biographer as "London Corsetier to Pioneer Farmer in Canada, Bookkeeper in St. Louis, Superintendent of Bent's Fort, Fur Trader and Mountain Man in Colorado and New Mexico, Builder of Barclay's Fort on the Santa Fe Trail, New Mexico 1848."<sup>86</sup> Barclay was a non-native who purchased land from the original Mora Grantees. When Fort Union was established, the Army took possession of Barclay's land and refused to offer compensation to Barclay and his partner, Doyle. In 1854, the Taos District Court awarded damages to Barclay and Doyle and ordered the Army to pay an annual rental fee of \$1,200.00. There were at least two subsequent owners of the Fort Union property: local resident William Krönig and General Benjamin F. Butler, Massachusetts politician and Civil War general.<sup>87</sup> Although the details and sequence of their exchange of the property is undocumented, it appears that Butler purchased the interests of Smoot and Darling, two members of Catron and Elkins' investment pool in 1885.<sup>88</sup> These events are further complicated by yet another grant, referred to as the Scolly Grant, which floated within the Mora Grant until it was located around the area of Watrous in 1890.<sup>89</sup> There is, therefore, no simple understanding of the chain of title of the

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<sup>85</sup>Knowlton, pg. 70.

<sup>86</sup>George P. Hammond, *The Adventures of Alexander Barclay Mountain Man*, Denver, CO: Old West Publishing Company, 1976.

<sup>87</sup>Hammond, pgs. 107-116. According to Hammond, Barclay was to receive \$1,200 annual rent from the land from the Army. Evidently Krönig received that same fee upon the transfer of title although at some point later it appears that he reduced the annual rental to \$1.00. (Hammond, pg. 114)

<sup>88</sup>Liping Zhu, "Fort Union National Monument: An Administrative History," Southwest Cultural Resources Center Professional Paper no. 42, National Park Service, Southwest Regional Office, Division of History, Santa Fe, NM, 1992, pg. 13; Knowlton, pgs. 65 & 67.

<sup>89</sup>Harry C. Myers, Superintendent, Fort Union National Monument, 1994.



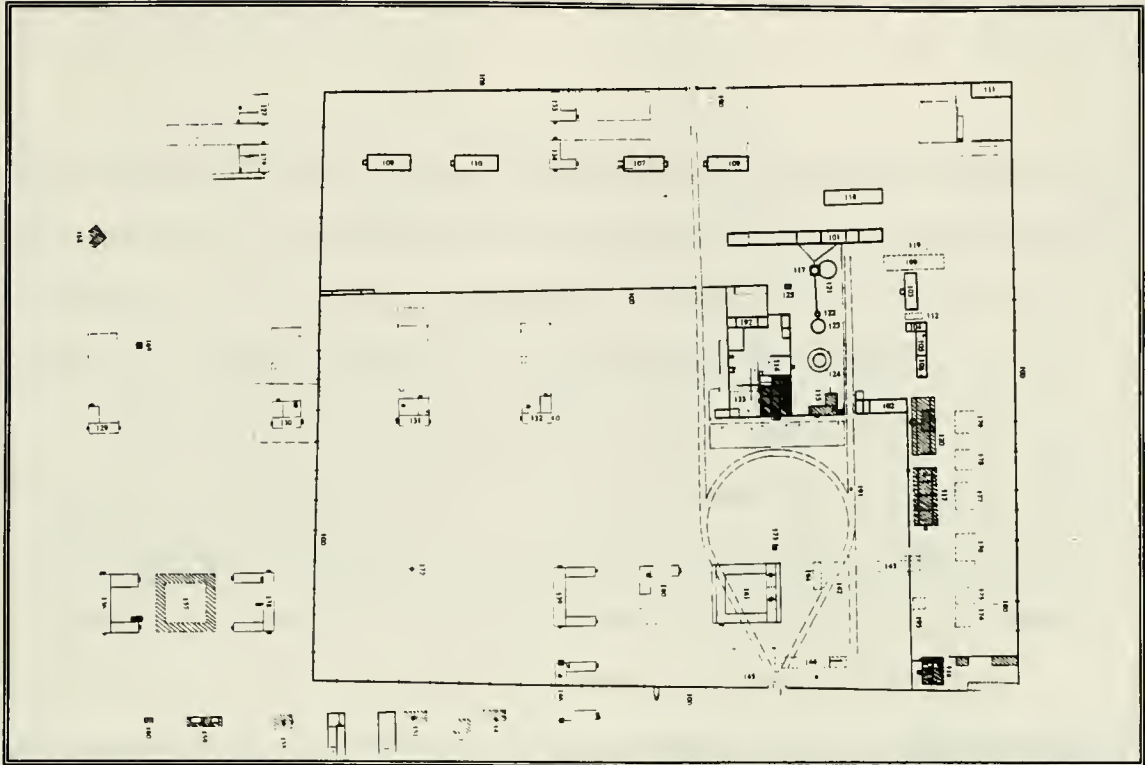


Figure 11: First Fort/Arsenal Ruins (Source: Ivey, "Historic Base Map, Fort Union")

Fort Union property. Moreover, the complexity of the Land Grant history has led to an extremely complex social and political atmosphere throughout the larger Fort Union cultural landscape.

### First Fort Union

During a military reconnaissance mission in 1846, Captain Edwin V. Sumner came upon an area of "Los Pozos," a chain of ponds or area of artesian springs noteworthy in the arid region. Los Pozos was eight miles north of La Junta, the joining place of the Cimarron and Mountain Branches of the Santa Fe Trail. Later, in 1851, Sumner was made commander of the Ninth Military Department with three specific directives: 1) to protect the settlements in the New Mexican Territory, 2) to advantageously locate an Indian defense post across the border from the United States and thereby fulfilling the mandate of the Treaty of Guadeloupe Hildago, and 3) to create a post that would operate





with economy and efficiency in the new territory.<sup>90</sup> Sumner saw a suitable location at Los Pozos and began work on the First Fort Union. The Fort was marked out at the base of the Mesa. (Fig. 11) The onslaught of winter and a distinct need to move from tents to more permanent quarters hastened construction resulting in crude, inferior cabins.

The Army's interest in economy prompted a directive that each post was to provide for its own subsistence. At Fort Union this directive led to the establishment of a farm twenty miles north of the Fort on the Ocaté River, at present-day Naranjos.<sup>91</sup> The farm failed almost immediately. Although the exact location of the farm is not certain, paths north along the Mesa undoubtedly provided access. Likewise, hunting and timbering paths in the adjacent Turkey Mountains might well have been established in this early period. Early sketches and maps (Fig. 12) provide the best images of this construction.

This first Fort Union was well described by early travelers on the trail as well as military personnel. Katie Bowen's diary from 1851-1853 describes her life as a military wife stationed at Fort Union. She describes mail routes from Las Vegas (NM), Barclay's Fort, the farm and the kinds of people who came through the Fort: "We are putting up quarters as fast as possible of timber and adobies [sic] and in the mean time we are living in tents...We have a good deal of company, as many strangers have been passing through and as it takes some time for a party to get their tents pitched and fires made, some of us usually invites them to dinner or tea as the case may be."<sup>92</sup> Bowen provides details specific of the historic landscape: "No potatoes are raised in this country, but next year

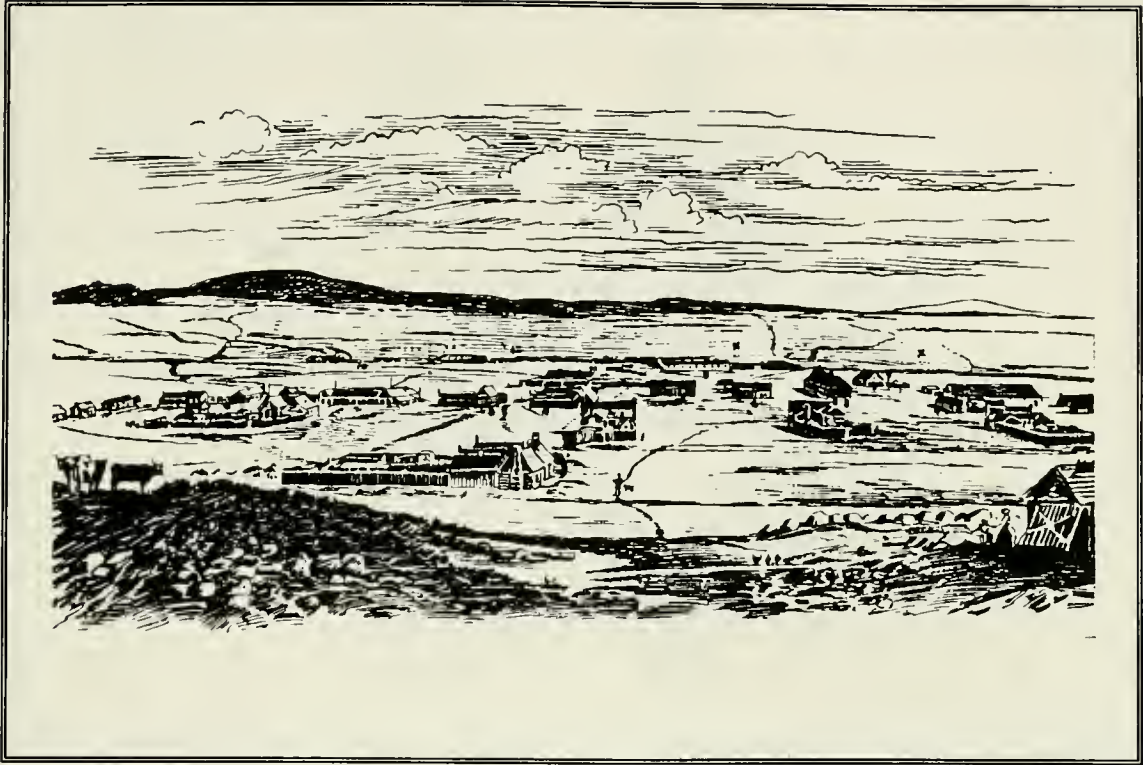
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<sup>90</sup>Oliva, pp.76-82.

<sup>91</sup>Harry C. Myers, Superintendent, Fort Union National Monument, 1994.

<sup>92</sup>Catherine Bowen, *"My Dear Mother" The Letters Home from Caterine and Isaac Bowen, 1851-1853, from Fort Union, New Mexico Territory*, Fort Union Archives, Fort Union National Monument, Watrous, NM, pgs. 1& 7.





*Figure 12: Joseph Heger Etching, "Fort Union, N.M. 1851"*

we will show them how it is done. The soldiers at Riyado [sic] have a fine garden and send down things occasionally but they don't taste like home...This is pretty country and I hope it will be easily cultivated."<sup>93</sup> On the limited success of the Fort Union farm she writes in September 1851: "The head farmer here is cutting hay for winter use but has not more than 30 tons and there are 900 head of cattle beside several hundred horses and mules to winter, but pasturage will be good these two months yet and perhaps three, for among the mountains I believe there is always some grass and browse."<sup>94</sup> Two months later, she writes in November: "The grass in this country forms no sod, consequently the ground is much like an ash heap on the surface. I do not think farming will flourish at this point..."<sup>95</sup> Bowen's comments indicate that by the first winter substantial grazing had wiped out the nearby vegetation, exposing the friable soils to water and wind

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<sup>93</sup>Bowen, pg. 2.

<sup>94</sup>Bowen, pg. 4.

<sup>95</sup>Bowen, pg. 15.



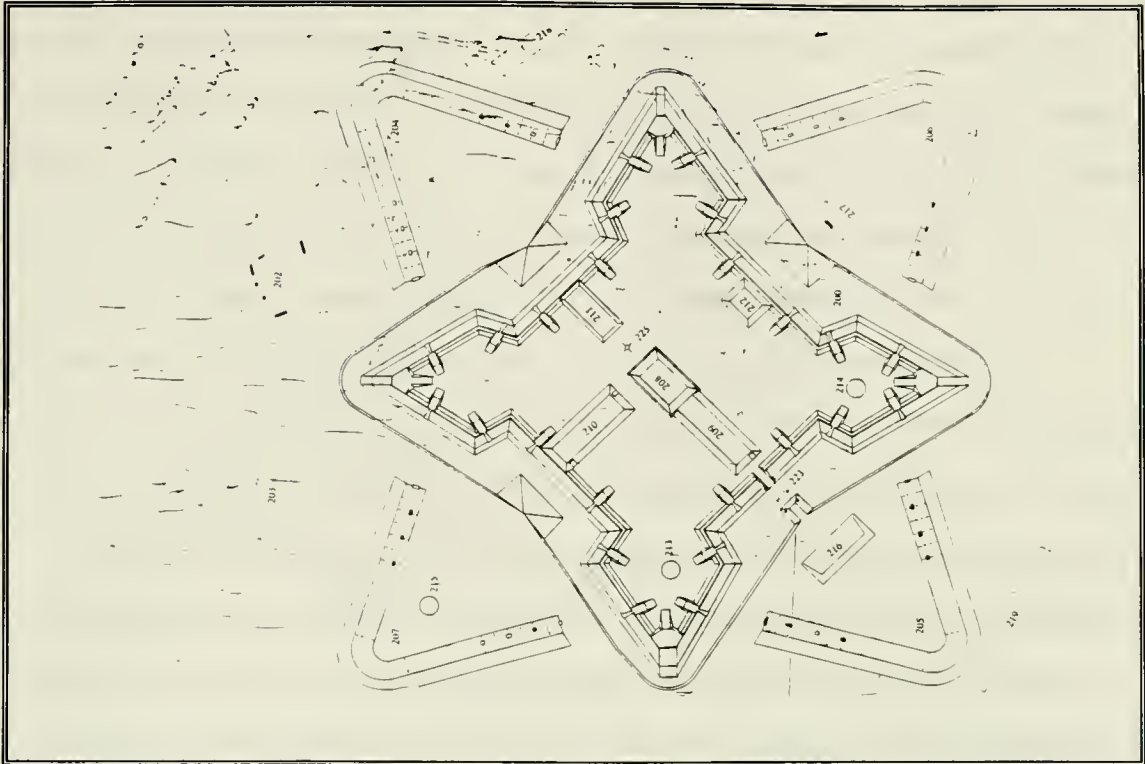


Figure 13: Second Fort Union (Source: Ivey, "Historic Base Map, Fort Union National Monument")

erosion which would plague to post throughout its existence. Overall, Bowen's descriptions depict the Fort as resembling a small town with a simple pragmatic use of space.

### Second Fort Union

The poor construction of the First Fort led to many suggestions for moving the Fort Union to other more advantageous locations.<sup>96</sup> Other suggestions included repairing and/or enlarging the existing First Fort complex. Archaeologist and creator of the Fort Union Historic Base Map, Jake Ivey has been able to decipher the foundations of several structures which he believes indicate that the construction of a new Fort adjacent to First Fort was begun and then abandoned as the fear on the Confederate attack loomed.<sup>97</sup>

<sup>96</sup>Oliva, pg. 173.

<sup>97</sup>Ivey, pg. 76.



Indeed, politics in the east immediately began to influence decision making in the west. Texas seceded in February 1861 and pressure was placed upon the troops at Fort Union to choose a side.<sup>98</sup> Panic ensued at Fort Union as events unfolded. The fall of Fort Fillmore and the Texas invasion of New Mexico in August, 1861 forecasted a conflict at Fort Union.<sup>99</sup> Fort Union commander Major Chapman determined that the first Fort Union was absolutely indefensible at the base of the mesa and commenced to construct an earthwork that would exist solely for strategic purposes.<sup>100</sup> (Fig. 13) Work began around the clock to complete the earthwork before the anticipated attack of Confederate Texans.

Earthen fortifications, which varied by location and time allotted for construction, were extensively used throughout the Civil War. Architectural historian Laura Soullieré Harrison notes: "Each entrenchment had a mass or embankment covering ...a parapet. The purpose of the parapet was to 'intercept the enemy's missiles, to enable the assailed to use their weapons with effect, and present an obstacle to the enemy's progress.' Each fortification also had a ditch constructed with the twofold purpose of providing material for the construction of the parapet and for increasing the size of the fortification."<sup>101</sup> A contemporary description of the star-shaped Fort Union earthwork noted: "...seven hundred and fifty square feet, parapets seven feet high. From the level of the ground on the inside with a ditch on the outside eight feet deep and fifteen feet wide."<sup>102</sup>

The Fort Union earthwork was hastily constructed and mistakes in design and engineering resulted in immediate problems. The unstable soils at Fort Union eroded easily, as noted by Sumner in a 1862 inspection report. Eventually, the earthwork was declared virtually uninhabitable due to leaks, drainage and construction errors.<sup>103</sup> The

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<sup>98</sup>Oliva, pg.422.

<sup>99</sup>Oliva, 443.

<sup>100</sup>Oliva, pg. 443.

<sup>101</sup>Soullieré Harrison, pg. 42.

<sup>102</sup>Soullieré Harrison, pg. 45.

<sup>103</sup>Ivey, pg. 111.





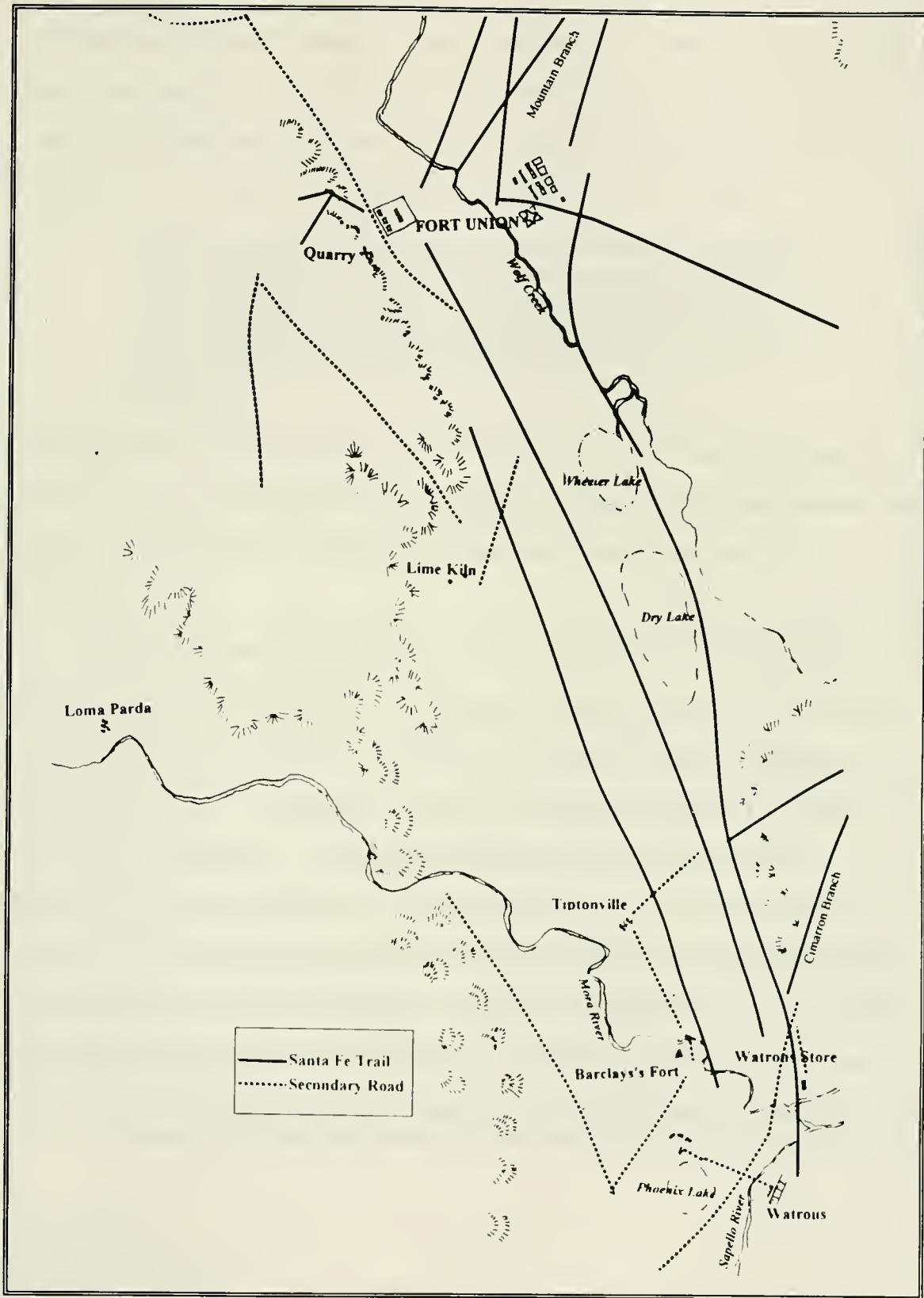


Figure 14: Communities and Resources surrounding Fort Union (Sources: USGS, Robert Utley) ①



location of the earthwork proved to be equally indefensible as a canon shot from atop the adjacent mesa could place a charge in the center of the earthwork. Fortunately for the troops at Fort Union, despite the failure of the construction, the Confederates were defeated at Glorieta Pass, 60 miles southwest of the Fort. As Oliva writes:

Despite the miscalculations made by both sides, the Confederate invaders of New Mexico, although initially successful, were eventually repulsed on the Santa Fe Trail not far from Santa Fe, and the ultimate fate of the Confederate States of America was sealed before the conflict was a year old. The troops at Fort Union, mostly volunteers from New Mexico and Colorado territories, were primarily responsible for the first significant defeat of Confederate troops in the department.<sup>104</sup>

Building supplies were removed from the earthen construction although it continued to house some troops, laundresses, horses and mules (as well as some illicit activities such as prostitution) through 1866. Finally, 1867 an order was issued for the star-fort demolition.<sup>105</sup>

During the Second Fort period, Fort Union's garrison had swollen to 1,679 in order to combat the Confederates, "the highest ever recorded in the history of the Fort."<sup>106</sup> Not only did the military facility grow, but also small settlements begin to appear in the Fort's vicinity. (Fig. 14) Captain Shoemaker of the ordinance depot built a small ranch one mile north of the first Fort which included an irrigated garden from an adjacent spring.<sup>107</sup> Eight miles across the mesa, a small town known as Loma Parda emerged. Although 1860 United States Census records show 84 people were living in Loma Parda, it is not clear when the town was founded. Most probably, Loma Parda began as a small cluster of farms which grew and profited with the establishment of the First Fort Union in 1851.<sup>108</sup> By 1860, as the census figures suggest, the routes between Fort Union and

*Figure 15: Third Fort Union (Source: Pitcaithley and Green, Historic Structures Report)* 

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<sup>104</sup>Oliva, pg.424.

<sup>105</sup>Soullieré Harrison, pg. 59.

<sup>106</sup>Oliva, pg. 461.

<sup>107</sup>Oliva, pg 462.

<sup>108</sup>Harry Myers, "The Founding of Loma Parda," unpublished paper, Fort Union National Monument Archives, Watrous, NM.



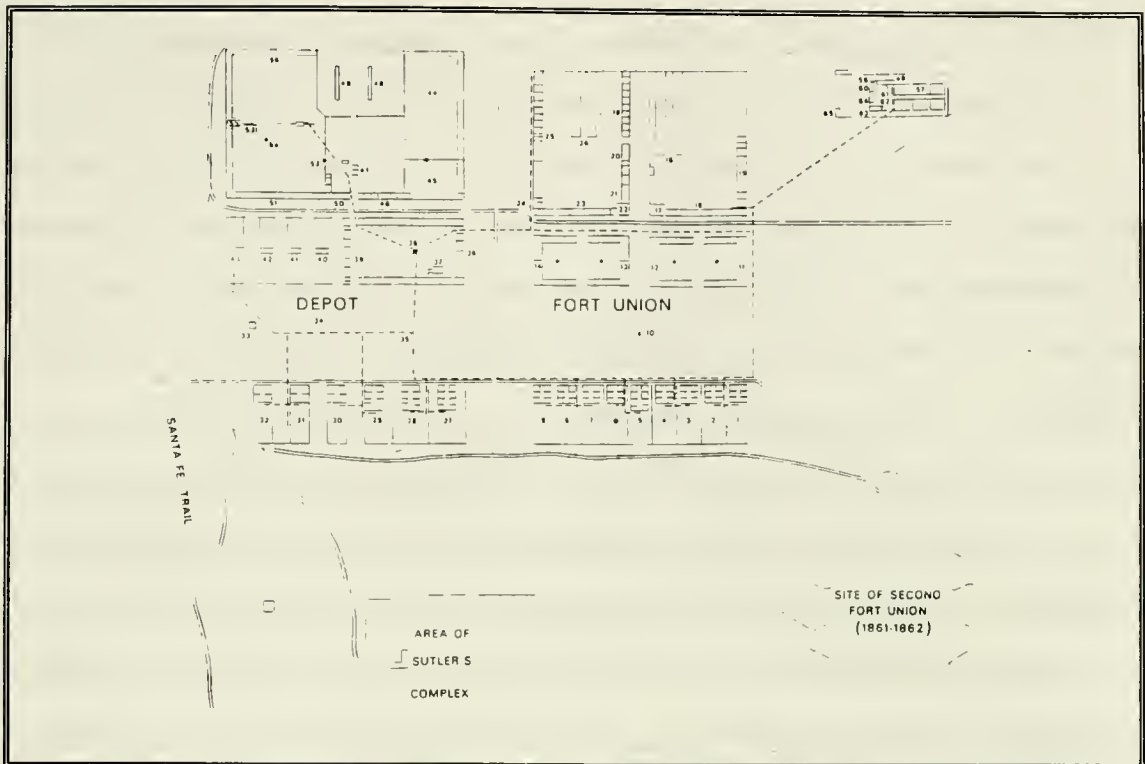


Figure 15: Third Fort Union (Source: Pitcaithley and Green, *Historic Structures Report*)

Loma Parda were increasingly well traveled (in fact, there was a taxi service) as commerce with local farmers and diversions such as alcohol and prostitution became important to the growing Fort. Immediately south of the Fort, the small town of Tiptonville profited from the convergence of the Cimarron and Mountain branches of the Santa Fe Trail as well as the market provided by the Fort. By 1870, William Tipton's house and ranch had become Tiptonville, providing local residents, the military, and travelers a place to buy provisions, rest, and orient themselves. In addition, Samuel Watrous had established himself in the area by 1860, and Barclay's Fort remained standing during this period of expansion. Thus, only a decade after Fort Union was established, the entire region began to transform in its presence.

### Third Fort Union

Almost immediately after construction began on the Second Fort,



evidence suggests that planning commenced on a third, more permanent Fort. (Fig. 15) The Second Fort had been primarily defensive in nature and in light of the significant problems inherent in the construction, the Second Fort was initially envisioned as a counterpart to an identical earthwork on the north side of a new Third Fort. Although this other earthwork was never built, it suggests the coincidental timing of the Second and Third Forts. As mentioned, the population of the Fort peaked in the early 1860's and there was a great need to expand both the accommodations and storage facilities. Fort Union was the depot for the entire region and the various forts and posts relied on Fort Union for their distribution of goods. In his recent research on Sutlers' row, Jake Ivey has shown that a lively commercial district also developed at Fort Union which catered to both the military and travelers. Throughout forty years of existence, Fort Union had Sutlers or civilian traders on site. Although the military frequently changed its rules and attitudes towards these traders, Sutlers persisted to the point that a substantial row of buildings known as Sutler's Row appeared in the 1860's. The Row included stores, hotels, and warehouses and appeared to have carried a wide range of goods and services.<sup>109</sup>

Third Fort was by far the most ambitious effort put forth by the army to establish its presence in the valley. In the first Historic Structures Report for Fort Union, Pitcaithley and Greene wrote:

With its vast array of storehouses, corrals, maintenance facilities, barracks, and officers' quarters, the third Fort Union, upon its completion, presented to early visitors an imposing collection of territorial style military buildings. The spaciousness of the quarters, the distinctive facades, the grand scale of the Depot's operation imparted a heightened sense of determination and purpose, of stability, and of permanence.<sup>110</sup>

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<sup>109</sup>Ivey, pp. 18-27

<sup>110</sup>Dwight T. Pitcaithley and Jerome A. Greene *Historic Structure Report, Historical Data Section, The Third Fort Union, 1863-1891 Fort Union National Monument New Mexico* United States Department of the Interior, pg 8.





Such a vast complex required significant construction resources. The Third Fort was associated with a large timber reserve in the Turkey Mountains which provided pine for both construction and fuel.<sup>111</sup>

As exemplified earlier in the Bowen papers, each inhabitant of Fort Union described the landscape from his or her own perspective. These accounts reflect not only the writer's character and unique perspective but also reflect their daily lives and occupations. Whereas the Bowen letters reflect the lives of a military family at a newly established Fort, a recently uncovered set of letters dated in the 1870s describe a different Fort Union landscape. These letters, written by an enlisted soldier, Eddie Mathews, describe a larger, regional landscape, beyond the immediate Fort. A significant portion of the enlisted man's time at Fort Union was spent away from the Fort on campaigns to nearby posts and camps. In 1873, Mathews wrote home that he had spent 7 out of the previous 12 months in field service.<sup>112</sup> This particular soldier spent weeks and months at Fort Bascom, NM, Trinidad, CO and "summer camp" on the Canadian River. He also ventured on numerous small trips to Loma Parada, Las Vegas, Ocate, Cimarron, Rayado, and Santa Fe. Because of the extensive amount of time soldiers like Mathews spent away from Fort Union on campaign, various forage agencies throughout the region were established to serve as provisioning stations: "These Govt Agency's[sic] are scattered all over the territories, for Soldiers to stop and get forage."<sup>113</sup> (Fig. 24) These tours away from Fort Union were primarily Indian campaigns and soldiers, such as Mathews, described those confrontations as well as the landscapes in which they occurred: "Went into camp about 4 o'clock, in a canon[sic]...found plenty of wood and abundance of excellent water...we had either to camp on the plain without wood or water, or descend

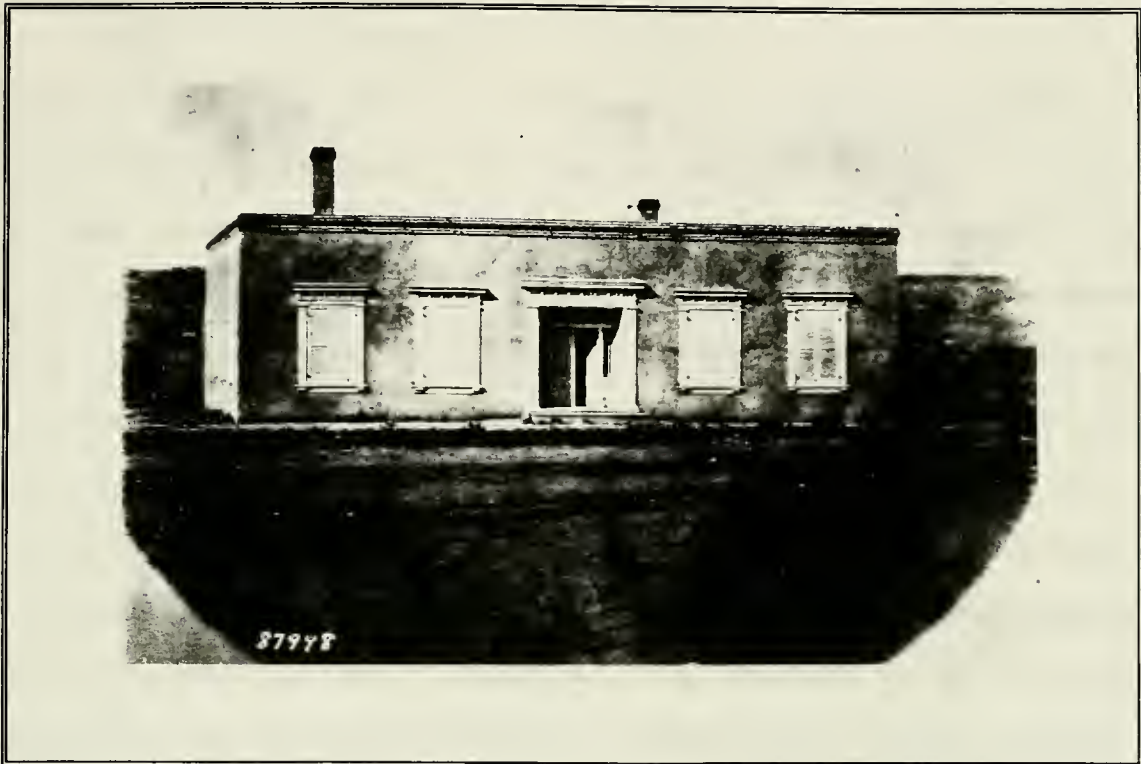
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<sup>111</sup>Post Correspondence dated October 20, 1868 Fort Union Archives, Watrous, NM.

<sup>112</sup>Eddie Mathews Letters, Fort Union National Monument, Watrous, New Mexico.

<sup>113</sup>Mathews Letters.





*Figure 15.1: Territorial Style Structure at Third Fort Union, prior to addition of porch (FOUN Archives)*

the canon [sic] and chance attack by indians."<sup>114</sup> Thus, the kind of duty required at Fort Union extended the cultural landscape of the historical period well beyond the Fort boundaries.

Despite the large amount of time spent away from the Fort, the historical record contains various descriptions of the landscape within the Third Fort boundaries. Winter descriptions include accounts of significant storms and snow falls as well as the formation of ice on the nearby pond which provided the recreation of ice skating. Post gardens appear to have been maintained throughout the Third Fort period as an 1889 inspection report recorded: "The messing of all the companies is very good; they have gardens and raise a fair supply of all the hardier vegetables."<sup>115</sup>

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<sup>114</sup>Matthews Letters.

<sup>115</sup>Fact File, Fort Union Archives.



Historical accounts provide an added dimension to our understanding of the historic cultural landscape as well: "Was quite surprised to find Santa Fe, the dull and miserable place it is...A few good stores in town, principally owned by Jews. Very few Americans in town."<sup>116</sup> These observations perhaps contradict many of the stereotypical notions of who participated in Santa Fe trade. This same soldier noted a common response to the vernacular building styles of New Mexico: "The buildings are very poor with a few exceptions."<sup>117</sup> The traditional New Mexican adobe house was completely foreign to the easterners and many of their descriptions of adobe structures were fairly negative. It is, however, interesting to note that it was not until local building techniques, such as adobe, were employed at Fort Union that the structures built by the Army were able to withstand the New Mexican environment.<sup>118</sup> The adoption of the Territorial style, (Fig. 15.1) which placed Greek Revival detailing over the adobe construction of the Third Fort, made the "poor" buildings appear much more like the architecture back home in the east.

### **The Era of Railroads**

The heyday of Fort Union would only last as long as the Santa Fe Trail existed and Indians remained a threat. Throughout the 1860's, backers of the Atchison, Topeka, and Santa Fe Railway (A.T.& S.F.) were busy raising money and securing land purchases for the extension of a railroad system along the Cimarron route of the Santa Fe Trail. By the late 1870's, the railroad penetrated New Mexico, forever changing the state. In his book on the ATSF, Keith Bryant writes:

The entry of the Atchison into New Mexico dramatically changed the local economy. Isolated from national life and existing on trade provided by the wagon companies, New Mexico had changed

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<sup>116</sup>Mathews Letters.

<sup>117</sup>Mathews Letters.

<sup>118</sup>Ivey, pg. 75.



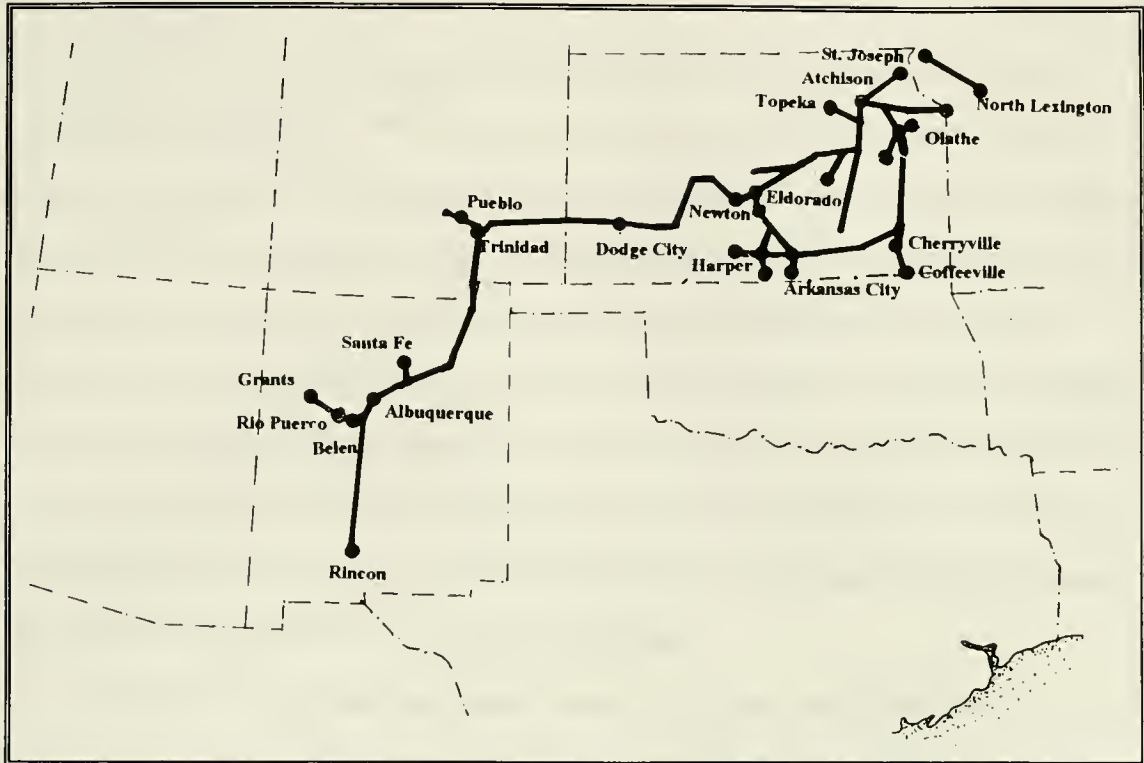


Figure 16: ATSF Railway Development by 1880 (Source: Bryant, *History of the ATSF*)

very little in the fifty years after the opening of the Santa Fe Trail. With the coming of the railroad, coal mining became a major industry and the sheep and cattle ranches expanded their operations. Farmers in the Rio Grande Valley now had means to ship their produce to eastern markets. The locomotive became a symbol of progress in New Mexico and signified the end of a way of life...<sup>119</sup>

In 1867, when the A.T.& S.F. reached only as far as central Kansas, the western portion of the Santa Fe Trail remained active. Smaller, locally based freighting firms moved the majority of freight. By the early 1870's, as the railroad reached Granada, CO, a new road was used to ship the freight directly to Fort Union. (Fig. 16) Known as the Fort Union–Granada Road, the road extended 200 miles and carried enormous amounts of freight for forts throughout the southwest. "From 1873 to 1976 the Fort Union–Granada

<sup>119</sup>Keith L. Bryant, Jr. *History of the Atchinson, Topeka and Santa Fe Railway* Lincoln, NB: University of Nebraska Press, 1974, pg. 62.





Road was the Santa Fe Trail carrying military supplies to Fort Union and beyond, and Civilian goods into Santa Fe."<sup>120</sup> This was the last gasp of the Santa Fe Trail and Fort Union. Although the Fort remained in existence until 1891 it began a slow death when the railhead reached Las Vegas and eventually Albuquerque by 1880. Similarly, many of the settlements around Fort Union declined steadily. La Junta, renamed Watrous by the railroad because of a pre-existing stop named La Junta in Colorado, remained more vital than towns such as Loma Parda which did not have immediate proximity to the railroad line. Yet, even Watrous resembles a ghost town today. The romanticized "new way of life" Bryant alludes to with the coming of the railroad was not the watershed it promised to be. In fact, it appears the very opposite was the case.

The Mora County economy, deeply wounded by Catron and Elkin's land speculation grew stagnant after the loss of Fort Union. Knowlton writes:

"...the depression and drought of the 1930's and the coming of World War II brought drastic changes to Mora County. Unable to find employment in migrant farm labor, and laid off by the railroads, mines and urban corporations, the population sharply increased in rural villages. The drought of the 1930's destroyed farming activities and almost brought the village population to destitution. They were rescued to a significant degree by government employment programs in the 1930's such as the Works Progress Administration and Public Works Administration. Many migrated with their families to the cities to participate in other New Deal programs...setting into motion currents of migration from Mora County to the larger cities of the West that still persists."<sup>121</sup>

Thus, a series of both national and local events, most notably the partitioning of common lands, improved transportation, the closing of Fort Union and increased agricultural competition resulted the economic and physical ruin of the settlements surrounding Fort

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<sup>120</sup>T.J. Sperry "Text Fort Union-Granada Road" memo, Fort Union Archives, Fort Union National Monument, Watrous, NM, 1993.

<sup>121</sup>Knowlton, pg. 70.



Union. Today, Mora County is the second poorest county in New Mexico which rates among the poorest states in the country.

## **After the Army**

Following the Army's desertion of Fort Union in 1891, the lands reverted back to the Butler-Ames Grazing Company. While the land was used for grazing cattle, little use was made of the structures despite a contract that was let but never fulfilled to convert the structures into a sanitarium in 1895.<sup>122</sup> According to Fort Union historian, Liping Zhu, the Fort became the home for squatters and a resource for building materials for local residents. The Army left behind a great deal of reusable items including timber, stone, windows, and hardware -- much of which eventually disappeared from the site. According to Zhu, "Whenever a family wanted to repair or even to build a house, the people went to the ruins at Fort Union to find what they needed. In Watrous, almost all the windows, doors, and vigas in the houses came from Fort Union."<sup>123</sup> Undoubtedly, the landscape must also have been affected by these losses although equal damage must have been wrought by grazing cattle and the climate. Although the area Freemasons made early overtures to preserve Fort Union as the birthplace of two Masonic Lodges (Chapman Lodge, 1862, and the Union Lodge, 1874) it took half a century for the Fort to come under the protection of the National Park Service.<sup>124</sup> A catalyst to the Park Services' ownership was the Union Land and Grazing Company's efforts at tearing down the ruins which resulted in the toppling of several weak walls, twenty chimneys and the filling in of all cisterns and wells.<sup>125</sup> These actions provoked local citizens to save Fort Union.

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<sup>122</sup>Zhu, pg. 13; The notion of converting the structures of Fort Union into a sanitarium was not unconventional as the region was known as a place for therapeutic healing. Hot springs and sanitoriums existed in nearby Montezuma and, subsequently, Valmora.

<sup>123</sup>Zhu, pg. 13.

<sup>124</sup>Geo. L. Machen, "Brief History of Union Lodge No. 4, Wagon Mound, New Mexico," *The New Mexico Freemason*, vol. 2, no. 9, Sept. 1937, pp. 3.

<sup>125</sup>Zhu, pg. 21.



## **The National Park Service**

As a result of public outcry, the Southwest Regional Office began investigating Fort Union and eventually negotiated the National Park Service's acquisition of the majority of the Fort ruins in 1954. Due to the Union Land and Grazing Company's reluctance to relinquish its property to the government, a somewhat awkward compromise was reached dividing the resource in two separate parcels. The first parcel, which contains the First Fort/Arsenal ruins, was and continues to be inaccessible by the Park or its visitors without specific permission from the manager of the Union Land and Grazing Company (Fig. 3).<sup>126</sup>

Under the mandate which authorized the establishment of Fort Union National Monument, the primary goals for the Park were "to preserve and protect the ruins of the Fort in the public interest."<sup>127</sup> Ruins stabilization was seen as the greatest priority, so a campaign was carried out on the Third Fort and First Fort/Arsenal areas which included the "excavation" of the existing room structures in order to remove the collapsed and eroded adobe and recall their original grades. These excavations were not rigorous archaeological investigations and were carried out with heavy equipment which is believed to have sacrificed most of the archaeological evidence of those portions of Fort Union. No records of such investigations exist for the Second Fort and perhaps therefore some archaeological resources remain.<sup>128</sup>

Subsequent stabilization and architectural conservation of ruins have absorbed the bulk of staff and outside consultants' time and energy at Fort Union. A 38 year treatment chronology of Fort Union reveals an almost constant flow of archaeologists, preservationists and adobe specialists attempting to slow the deterioration of the ruins.

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<sup>126</sup>Zhu, pgs. 13-26.

<sup>127</sup>Levine, et. al., pg 1.

<sup>128</sup>Levine, et. al., pg. 119.



The Fort Union landscape has been seen as a self-restoring resource requiring little or no restoration or protection except arroyo mitigation.<sup>129</sup>

Fort Union slowly acquired support structures including a temporary visitor's center and employee housing.<sup>130</sup> On June 8th, 1956, Fort Union National Monument officially opened. In this same year, the entire site was fenced, thus marking "the final exclusion of stock and the beginning of recovery of the grasses from recent overgrazing."<sup>131</sup>

Like many other National Park Service properties, Fort Union profited from National Director Wirth's MISSION 66 program which promised the investment of 800-million-dollars in the Nation's resources which were neglected during World War II. Between 1957 and 1959, under the suggestion of then Superintendent Wing, the Park Service endeavored to recall the "Territorial Style" in a new design for a Fort Union Visitor's Center.<sup>132</sup> Although this was a completely modern construction, executed with modern building techniques, the structure's massing and detailing attempted to recall the Third Fort construction without posing as a restoration or reconstruction.

As is often the case, the National Park Service faced difficult choices in accommodating visitor needs at Fort Union National Monument. Often these choices surrounded issues of Santa Fe Trail rut preservation. Although the issues of rut preservation and stabilization have gained importance since the Congressional designation of the National Historic Santa Fe Trail in 1987, preservation of the Trail itself was not critical to the original plan for Fort Union National Monument.<sup>133</sup> As a result, the MISSION 66 Visitor's Center is sited adjacent to the Third Fort Hospital, placing it

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<sup>129</sup>Zhu's study includes a treatment history.

<sup>130</sup>Zhu, pgs. 27-28.

<sup>131</sup>Zhu quoting Mawson, pg. 28.

<sup>132</sup>Zhu, pgs. 29 & 34.

<sup>133</sup>Zhu, pg. 63.





directly in the midst of substantial north–south trending Santa Fe Trail ruts.<sup>134</sup> Similarly, in order to place the employee housing away from the context of the historic scene, the buildings are located south of a low rise topographic change which, in effect, hides the structures. This location unfortunately also coincides with pronounced north–south Santa Fe Trail ruts which were compromised for the construction. These choices must be understood in the context of Park's founding legislation which emphasized ruins rather than landscape as the development priority. The Visitor's Center site was chosen because it was determined to be a sufficient distance from the ruins as not to interfere with their interpretation or preservation. Interestingly, although it is true that the construction of these structures destroyed trail ruts, they also mitigated a substantial problem of arroyo formation. Trail ruts which run perpendicular to the grade, or up and down slope form water channels which eventually erode into arroyos. Situated in the midst of eroding ruts, the structures, in effect, became erosion barriers.

Similar problems were faced by the Park Service in order to provide visitor access to the Monument. Access to Fort Union was gained by the construction of New Mexico Highway 477, (present day New Mexico 161) which was placed amongst the many historical ruts between the Fort and the settlements of Tiptonville, Barclay's Fort, and La Junta (Watrous). Initially the Park Service parking lot was placed immediately adjacent to the Third Fort ruins. This lot was eliminated by the Visitor Center construction which included a new entry loop and parking lot located to the south.

The current Superintendent at Fort Union has sought the support of the Soil Conservation Service (SCS) in order to maintain and preserve Trail ruts. Support was received in 1985-1986 in a joint effort between the Southwest Regional Office and the SCS which focused primarily on the mitigation of arroyos resulting from the erosion of

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<sup>134</sup>Zhu, pg. 29.



ruts. The preservation of un-eroded ruts remains, however, an on-going problem at Fort Union.<sup>135</sup>

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<sup>135</sup>Zhu, pg. 77.



## **Chapter 3**

### **FORT UNION TODAY**

Fort Union National Monument stands as a mnemonic resource, recalling a portion of a series of events that took place in a landscape both rich in resources and advantageously located. Although the Park consists primarily of ruins and vast open space, as a ruin and a landscape Fort Union has a phenomenal character which defies simple description. An inventory of Fort Union's landscape features provides a framework for analysis and some insight into the site's character.

#### **Objects and Structures in the Fort Union Landscape**

The major buildings, structures, and objects within the Fort Union landscape are the ruins of the First, Second and Third Fort Union constructions. These adobe ruins are distinctly evocative and picturesque: they engage the visitor's imagination. By definition, the ruins convey the passage of time and testify to the destructive and restorative forces of nature. The ruins are spatial: they imply the size and scale of the original structures although they have acquired their own, almost abstract form. Finally, as interpreted by the National Park Service, the First, Second and Third Fort ruins act as a guide which chronologically organizes the site.

Although usually not interpreted for visitors, the ruins of the First Fort Union/Arsenal provide a visual focus that lends a sense of scale to this vast landscape. Despite the fact that these ruins are only periodically visited by staff, the First Fort/Arsenal ruins are relatively intact and provide some sense of the scale, proportion, and arrangement of the historic structures. The majority of extant ruins are adobe, specifically recalling the Arsenal era (as noted, the earlier First Fort was largely constructed of unhewn timber and had failed by the 1860's). Prior to the construction of the Second Fort





*Figure 17: First Fort Ruins (photo by Author)*

earthwork, there was a great deal of discussion of repairing and/or enlarging the existing First Fort complex,<sup>136</sup> and Ivey has been able to decipher the foundations of a new Fort begun adjacent to First Fort, and abandoned as the fear of Confederate attack increased. These foundations, and most of the mounds of earth in the First Fort/Arsenal parcel require the trained eye of an archaeologist to provide an accurate understanding of the historic scene. (Fig. 17)

In addition to ruins of approximately 20 structures from the Arsenal construction, there are distinct remnants of a fairly crude irrigation system which probably fed a small ornamental pond adjacent to the Shoemaker House.<sup>137</sup> As head of the Arsenal,

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<sup>136</sup>Ivey, pg. 75.

<sup>137</sup>Field reconnaissance with Jake Ivey, Fort Union National Monument, August 1993. Shoemaker was perhaps the longest continuous resident at Fort Union, arriving with Sumner in 1851 and remaining until 1886.







*Figure 18: Second Fort Ruins (Photo by Author)*

Shoemaker's home was a distinct feature at the center of a large entry loop drive, but is now only distinguishable by its foundation and entry steps.<sup>138</sup>

Second Fort, although quite distinct in aerial photographs, requires a considerable amount of interpretation in order to understand the volume and scale of its earthen construction. (Fig. 18) Vegetation covers the earthwork, flattening its form as it slopes to the southwest away from the point at which visitors approach the site. A secondary trail leads the visitor into a small portion of the earthwork. Because the route of this path has no substantial change of grade between the exterior, wall, and interior of the earthwork, visitors gain little sense of the construction. Park staff often place a replica canon at the edge of the trail to assist the visitor in deciphering interior from exterior space.

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<sup>138</sup>Field reconnaissance with Jake Ivey.





*Figure 19: Third Fort Ruins (Photo By Author)*

Third Fort has a large number of ruins representing approximately 65 structures constructed primarily of adobe on stone foundations.<sup>139</sup> Having received the majority of stabilization efforts, the Third Fort ruins retain some interior plasters, brick cornices, reconstructed brick chimneys, and stone walls. The better state of preservation permits a strong spatial understanding of interior and exterior spaces (Fig. 20). Vegetation, however, obscures these relationships, as it often grows more vigorously inside ruins than outside.

The most legible structures in the Third Fort complex are the hospital and jail. The hospital was largely intact when the Park Service began managing the site and its deterioration has been retarded relative to the other Third Fort Structures. A reconstructed white picket fence based on historic photos attempts to both recall historic

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<sup>139</sup>Pitcaithley and Greene, pg 3.



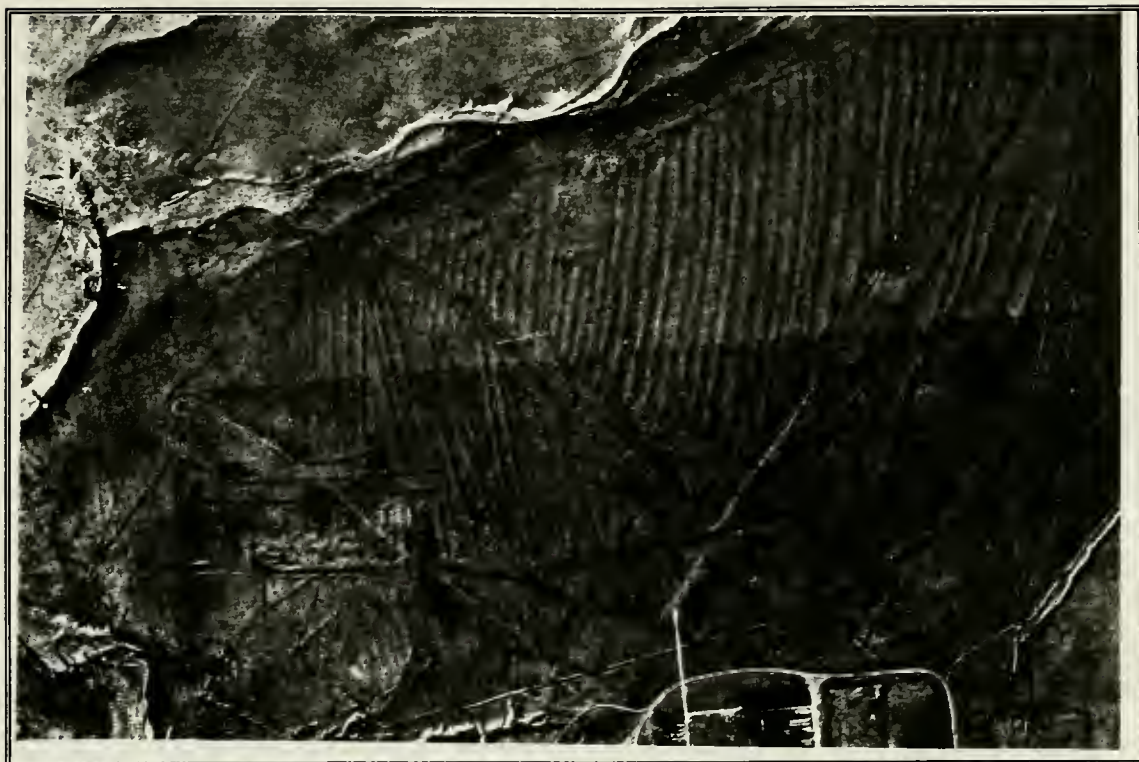


*Figure 20: Third Fort Ruins with Vegetation (Photo by Author)*

furnishings and control visitors, although its actual placement is conjectural. The jail is a somewhat deceptive ruin: what appears to be a complete structure is, in fact, only the cell interior divisions which were originally surrounded by an adobe wall.

Various structures such as cisterns and other water gathering systems help depict everyday life at Fort Union. Stone blocks historically placed at the corners of buildings provide visitors some spatial understanding of the historic scene even when the structures themselves are no longer standing. A series of corrals extend to the eastern portion of the ruins, however, as with the First Fort/Arsenal ruins, these remnant earthen mounds offer little assistance to the untrained visitor in understanding the historic scene – they reveal themselves much more distinctly in aerial photography. Other objects in the Third Fort complex include a replica flagpole in the center of the parade ground and waysides throughout the site. In addition, the fairly substantial reinforcing structures which assist in





*Figure 21: Adobe Fields, (USGS Aerial Photo enlarged)*

wall stabilization are found throughout Third Fort creating, in a sense, their own "preservation landscape."

Fort Union requires an as yet undesignated special category of historically significant landscape features which were man-made yet are not buildings per se. These features, especially evident in aerial photos, include trail ruts, and furrows resulting from adobe extraction. (Fig. 21) Trail ruts are distinct throughout not only the Fort Union Valley but along the entire length of the extant historic Santa Fe Trail. Because of the particular qualities of the prairie, the landscape carries the marks of human use for a very long time. These ruts have been identified as historically significant throughout not only the Fort Union landscape, but also for much of the length of the Santa Fe National Historic Trail.

The fields north of the Third Fort were methodically scarred by the process of soil extraction required for the manufacture of adobe. These fields yield information related to





the sequence and quality of adobe construction used at the Fort and are therefore valuable as historical/cultural resources as well as sources of information for architectural conservators studying and stabilizing the Fort ruins.

## **Archaeological Resources**

As noted, ruins stabilization campaigns carried out on the Third Fort and First Fort/Arsenal areas are believed to have sacrificed most of the archaeological evidence for those portions of Fort Union.<sup>140</sup> No records of such investigations exist for the Second Fort which is therefore believed that to have some archaeological resources still intact.<sup>141</sup> A full description of archaeological investigations is detailed in "A History of Archeological Investigations at Fort Union National Monument," ( NPS 1992, Levine, et. al.). It is believed that there is still a great deal of archaeological information yet to be gleaned from Fort Union regarding the material culture of life at the Fort.<sup>142</sup> No recommendations exist for the retrieval of information relevant to periods prior to 1851.

Not all the structures which have been archaeologically documented are interpreted for Fort Union visitors. The early investigations uncovered the foundations of a Good Templar's Lodge. Despite the unique octagonal shape of the structure and the cultural history it references, the Good Templars Lodge was not mapped until Ivey's 1993 Base Map.<sup>143</sup>

## **Resources in the Larger Fort Union Landscape**

Like the adobe fields, a substantial number of relevant structures and objects lie outside both the interpreted and actual site boundaries of Fort Union National Monument. These resources may be considered on at least two distinct scales: the first, an immediate

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<sup>140</sup>Levine, et. al., pg. 1.

<sup>141</sup>Levine et al., pg. 119.

<sup>142</sup>Levine, et. al., pg 119.

<sup>143</sup>Levine et. al., pp. 106-107.



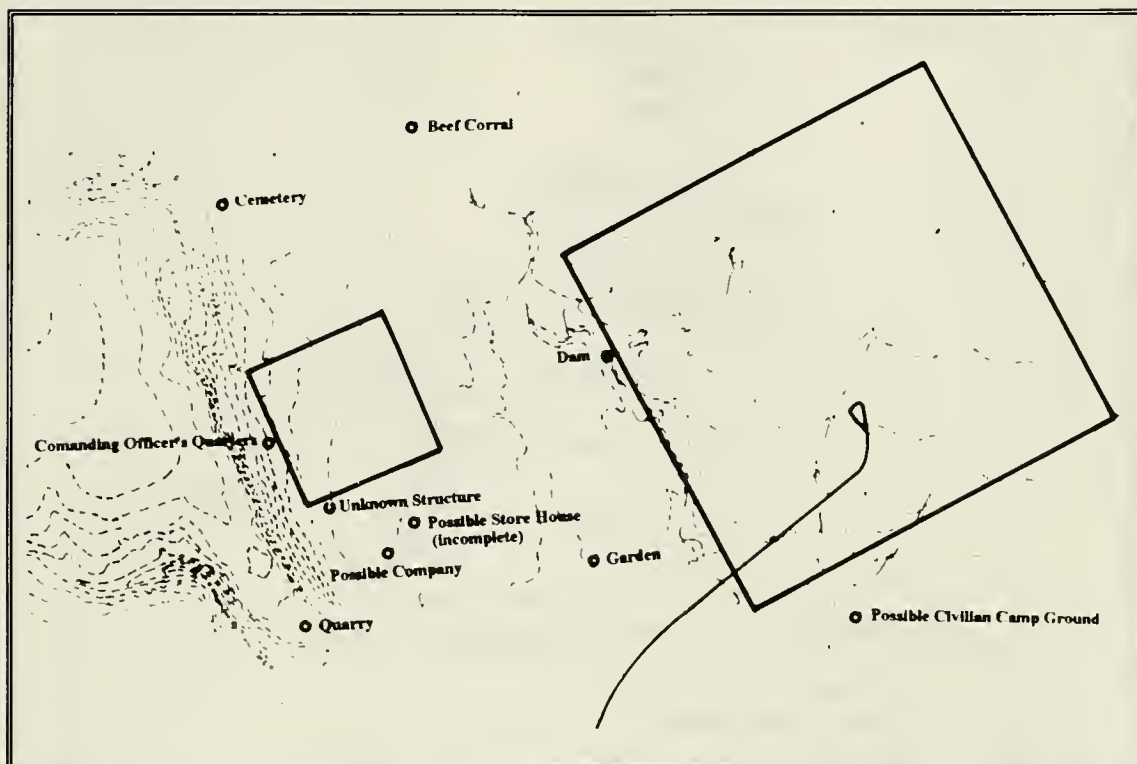


Figure 22: Resources Beyond Park Boundaries (Sources: Fort Union National Monument Archives, Ivey)

scale which includes resources directly related to the daily operations of the Fort, and second, a larger scale which includes resources in the valley related to the Fort's socioeconomic relationships to its neighboring settlements. A third, still larger scale of associated resources may also be identified as they relate Fort Union to Mora County, the Santa Fe Trail, and Southwest.

Within the immediate Fort Union vicinity, the General Management Plan identifies several related cultural resources outside the boundaries of the National Monument (Fig. 22). These include: extensive trail ruts; the Commanding officer's quarters and office, Quartermaster corral and shops, possible dragoon stables, the cemetery; several lime kilns; several dumps; adobe fields; possible civilian quarters south of the Fort; the quarry; brick manufacture area; "Los Pozos," or what the General Management Plan refers to as the ponds south of the Fort; beef corrals; racetrack; target pits; and a small garden site and spring. This list has been expanded by Jake Ivey to include a bridge-like abutment ruin crossing Coyote Creek, ruins of a water retention construction or dam and several



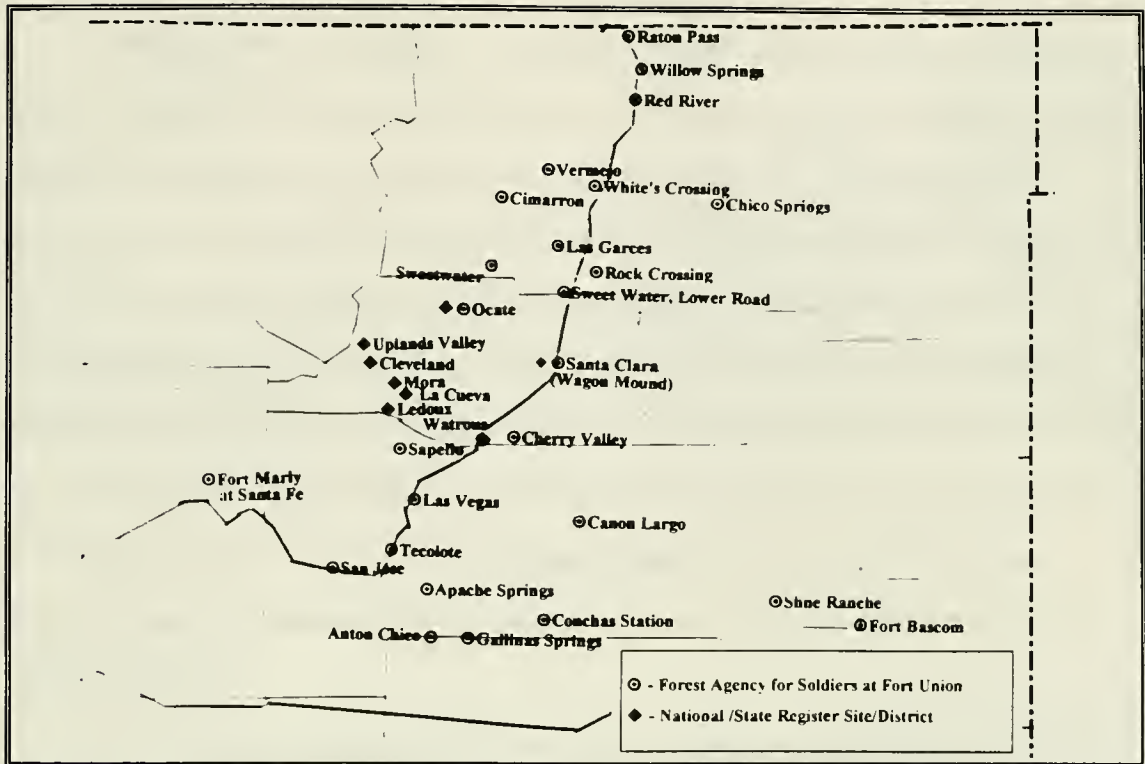



Figure 24: Resources in Northeastern New Mexico (Sources: National and State Register, Fort Union) 

possible lime slaking pits. Because these sites and artifacts evidence activities related to building and operating the Fort, they yield both historical and cultural interpretive information as well as valuable information to architectural conservators, historians, and preservationists who seek detailed information on materials, engineering, and techniques used during the historic period.

Beyond the immediate scale, several Fort Union related resources greatly expand the understanding of Fort Union as a cultural landscape. Resources identified by the General Management Plan include: Loma Parada; a ruin of a town which boasted a population of approximately 400 during the historical period; a Fort Union farm located somewhere in Ocate, 20 miles north of the Fort; a Fort Union stone corral located in Watrous; and timbering operations in the Turkey Mountains. Other resources in this larger sphere include: the town of Tiptonville, site of Barclay's Fort, potential Native American resources, and the nominated historic resources of Watrous.



Because of its function as both a military post and commercial center, a third sphere is implied by the relatively large number of related resources throughout the Mora Valley, Mora County, and northeastern New Mexico (Fig. 24). These sites include National Historic Places, National Register nominations, and State Historic Register sites. These resources range in scale from small homesteads to entire towns. In addition to these registered sites, the Fort Union Archives notes over thirty "Forage Agencies" or supply points throughout central and northeastern New Mexico and southern Colorado, most of which provided provisions to soldiers while campaigning away from the Fort. Although few of these sites are recognized and protected, they are relevant to the perceptual cultural landscape of Fort Union to the extent that they describe the Fort's sphere of influence.

Of these aforementioned sites, some relate to cultures which preceded Fort Union, such as the Mora Valley acequia or irrigation system recently nominated to the National Register. Further research and investigation might also document resources in the Fort Union Vicinity which relate to Native American inhabitation including the archaeological evidence of Pueblo settlements before 1300 in the Watrous area.







*Figure 25: View East From Fort Union National Monument (Photo by Author)*

## **Views and Vistas**

Substantial views and vistas are a critical component of the visitor' experience at Fort Union. These views and vistas begin as the visitor enters the Fort Union valley on New Mexico Highway 477 and sees the Fort in the distance. Inside the park, the views are vast and uninterrupted: the Turkey Mountains to the east, Sangre de Cristo Mountains to the West, and Black Mesa to the north. The view south is virtually uninterrupted except for some distraction by the employee housing which is largely hidden below a small topographic depression where the ground slopes gently southward. These expansive views are central to the interpretation of Fort Union as they begin to describe the historic importance of Fort as an oasis of civilization to settlers as they crossed the Great Plains. As one recent visitor commented: "Amazing! How grateful the sight of the fort was to travelers."<sup>144</sup>

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<sup>144</sup>Excerpt, Visitor log book, 8/27/93, FOUN.





*Figures 26 (top): View North From Fort Union; Figure 27 (bottom): View West (Photos By Author)*

### **National Park Service Structures and Objects in the Fort Union Landscape**

Although the National Park Service occupies a minor presence in the Fort Union landscape, it is nonetheless a significant part of the visitor experience. As noted, Park planners attempted to lessen the impact of the necessary employee, visitor contact, and maintenance structures at Fort Union, although the relative flat, barren, open landscape offered few opportunities to screen or hide structures. Ultimately, the siting of the Visitor's Center was dictated by the pragmatic realities of accessibility and interpretation. The contextual Territorial building style maintains an appropriate scale relative to the Fort ruins although the abundance of foundation plantings surrounding the Visitor's Center is aberrant. This introduced vegetation is defended as a necessity for visitor comfort and as a means of providing visual direction to visitors, i.e., to assist them in knowing how to





*Figure 28: Fort Union Visitor Center (Photo by Author)*

enter the site. The Visitor Center is the only substantial structure in the immediate resource area. All other Park Service structures are located in a separate cluster approximately one half mile from the Visitor Center (although such distances appear deceptively close due to topography and a resultant distorted sense of scale in this vast landscape).

As noted, the employee housing is also partially of a contextual style (pseudo territorial) and, along with maintenance facilities, is largely hidden behind a low rise which ultimately screens these structures from the public view. Septic pools are screened by planted vegetation which, relative to that which surrounds the Visitor Center, appears appropriate adjacent to Coyote Creek where vegetation was more likely to exist. Interpretive objects in the landscape are fairly minimal. Waysides, some of which are substantial enough to provide a short audio presentation occur at regular intervals along the main trail. Boundaries are usually marked with barbed wire fence which is relatively



invisible. The highly visible white picket fence adjacent to the Visitor Center is deliberately placed to provide direction to visitors toward the Visitor Center. This fence is based on historic photographs although it is in stark contrast to the ruins.

Frames, metal rods and cables pervade the landscape to the extent that virtually all ruins on the site reveal at least some subtle intervention. These interventions are mostly related to Park Service wall stabilization efforts. For the most part, these devices are not visually jarring and provide visitors with the comfort that the Park Service is acting as steward of this resource.





## Chapter 4

### ANALYSIS

Fort Union challenges the traditional categorization of National Park Service sites as *either* natural *or* cultural resources. A typical Fort Union visitor comments: "Very interesting *and* beautiful country." [emphasis mine]<sup>1</sup> In combination, the cultural and natural landscapes of Fort Union presents a distinct continuum from primeval, to inhabited landscape, to ruin. In so many ways the human settlement patterns and land use of the Fort Union landscape reflect its underlying physiography, yet the vast landscape itself is not interpreted nor particularly celebrated or valued. Without reference to the ecological setting of Fort Union, the history of this site is only partially told. Thus, in order to analyze and assess such a landscape, it is critical to address both its natural and cultural aspects, recognizing that both aspects contribute significantly to the visitor experience of Fort Union and that the two are inextricably tied.

#### **The Natural Landscape**

The landscape and the natural environment (especially snakes) often generate as many visitor comments at Fort Union as do the ruins. The physiography of the landscape is largely uninterpreted for the public although it clearly set the stage for human settlement (or lack thereof) in the area before, during, and after the Fort era.

Because Fort Union lies at the border of two distinct physiographic provinces, a rich and diverse plant and animal community results in a greatly juxtaposed and dramatic landscape. The Fort Union topography and resultant views clearly reflect this edge environment: The views east and west from the site toward the Turkey and Sangre de

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<sup>1</sup>Excerpt from Visitor Log Book, 8/25/93, FOUN.



Cristo Mountains are green and mountainous; the views to the arid, vast plains seem to extend infinitely.

New Mexico's geology is well celebrated as one of the most diverse and dramatic in the country. This distinctive geologic profile is quite legible in the Fort Union landscape through not only the local building materials but also the various land forms in the immediate area which are clearly visible from the site. The Fort quarry, located in the mesa immediately west of the Park boundaries, provides clear evidence of the techniques and extent to which it was employed by the Army. On site, the products of the quarry are present in Dakota sandstone foundations and paths. Historic photos and remnant *in situ* plasters, recently stabilized, suggest the extensive use of lime plasters at the Third Fort Union made possible by readily accessible lime deposits. These lime deposits are clearly marked by substantial lime kilns located outside of park boundaries which are rapidly deteriorating. Gypsum deposits east of the Fort provided gesso as a lime/stucco component, and shaley lime deposits were used in the production of bricks. This would appear to be a rare opportunity to interpret the close ties between land form and land use at Fort Union National Monument.

Water is also a revealing natural feature, as human, plant, and animal communities closely follow its ephemeral patterns. The Fort Union Vicinity has a distinct hydrologic character as a result of artesian pressure resulting from geologic events. Hydrology lent the Fort Union valley its first known name, "Los Pozos," or "the springs," suggesting the advantages offered to later military personnel charged with the responsibility of establishing a fort. Still, this relatively abundant water supply currently falls short of the amount required to support new development in and around the Fort Union valley. Thus, it is in part because of hydrology that the historic scene of Fort Union is currently preserved. However, there is no guarantee that such preservation is permanent.

Hydrology dictated much of the development of Fort Union. Significant numbers of people and livestock necessitated the frequent digging of wells throughout the Fort



complexes. Like native settlements in the area, water collection, movement, reservation, and irrigation at Fort Union resulted in a specific construction and artifacts specific to the arid landscape. Hydrology, then, might be seen as one of the most important organizing principles in the development of the Fort. Even today, the importance of water in the Fort Union landscape is reinforced by the presence of a single, large water tank at the northeast corner of the Park – the only vertical element in an otherwise horizontal plane.

As noted, historical land uses indicate soil variations. The adobe fields occupy a distinct position north of the Fort indicating a substantial clay presence in those soils. Sand used in various construction materials including lime and stucco is believed to have come from the alluvial deposits of Coyote Creek.

The overall soil character is expressed in dendritic patterns of erosion which, as arroyos, have become almost ubiquitous to the southwestern landscape. Erosion in the Fort Union landscape provides opportunities to understand and mitigate its destruction. As noted, historic trail ruts are particularly susceptible to erosion as they form water channels which encourage arroyo formation. Joint efforts between the Soil Conservation Service, the National Park Service, and the Union Land and Grazing Company have slowed the advance of most of the arroyos present within Park boundaries. Although Fort Union National Monument provides a model of leadership and partnership in the conservation and management of its land and resources, little connection is made between arroyos and trails ruts or other land uses as the catalyst of their erosion. Thus, the false assumption is that these are naturally occurring land forms, whereas their presence could provide an educational opportunity to teach visitors to read the landscape correctly and perceive the fragility of the prairie.

The highly phenomenal character of the Fort Union climate is all too evident to many of Fort Union's visitors: afternoon visits are frequently interrupted by spectacular thunderstorms. Lightning storms are particularly lively in early summer and heavy down pours and hail in the later summer take a heavy toll on the adobe ruins. These storms



reinforce the extreme travel and living condition faced by early traders, settlers, and the Army. Lightning strikes continue to be a hazard in the Fort Union landscape threatening fire and taking the life of an occasional cow on the adjacent ranch lands.

As noted, the vegetation at Fort Union today is similar to that which had existed throughout the historic period, although generally in an altered, semi-degraded state. What makes the prairie significantly different today is the high percentage of invasive "increasers" which threaten less dominate species. Part of Manifest Destiny was the extraordinary number of plant species which hitched along for the ride cross country. These species as well as the modified succession of grasses significantly alter the Fort Union prairie from its historic appearance. As noted in Sandra Schackel's Historic Vegetation Study, the prairie which has returned to Fort Union is a series of clumps of grass rather than a continuous sod mat, is the result of disturbance during the historic period and modern maintenance techniques which exclude burning.<sup>2</sup> Despite the hazards of fire, especially in high wind conditions common at Fort Union, controlled burning correctly applied would not only assist in the restoration of the short grass prairie, but would also convey an awareness and appreciation for ecological processes to Park visitors.<sup>3</sup>

The Park Service has planted a number of both native and non-native foundation plantings and shade trees in the area surrounding the Visitor Center. To the extent that these efforts recall similar efforts during the historic period, they are not completely aberrant, although, it is not clear that these particular species were chosen with any reference to historical documentation of what was actually grown at Fort Union during the historical period. In short, these introduced foundation plantings create a small verdant oasis around the Visitor Center which is antithetical to the short grass prairie. More

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<sup>2</sup>Schackel, pg. 66.

<sup>3</sup>Superintendent Myers has attempted burning tests which proved impossible to control due to wind condition; (based on comments made by Myers, 9/93).





appropriately, Superintendent Myers has made considerable efforts to use native grasses when re-seeding bare soil around the visitor center.<sup>4</sup> Despite the often fickle growing habits of these native grasses, Myers' efforts have been extremely successful in certain areas including the center portion of the driveway loop.

A successful approach to incorporating the rich ecological resources and history of the Fort Union landscape would only enhance our understanding of the human settlement which succeeded. William Cronon's seminal study, *Changes in the Land: Indians, Colonists and the Ecology of New England* demonstrates the value of putting forth "a history which extends its boundaries beyond human institutions...to the natural ecosystems which provide the context for those institutions...Writing a history of such relationships inevitably brings to center stage the cast of nonhuman characters..."<sup>5</sup> The "nonhuman characters" are no less center stage in New Mexico than they are in New England, although our biases related to familiarity and economies of scale may suggest otherwise.

## **The Cultural Landscape**

Just as the natural landscape of Fort Union might be perceived as an edge environment between Mountains and plains, so, too, might the cultural landscape be perceived as a type of edge condition, as a point of confluence of Native American, Hispanic and Anglo American cultures.<sup>6</sup> The confluence of these cultures is manifest in the ways in which humans engaged in and shaped the natural landscape; again, reinforcing the notion that there is no distinct point where nature and culture can be divided.

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<sup>4</sup>Superintendent Myers has generated a significant amount of correspondence related to the propagation of native grasses with both the Soil Conservation Service and local native plant vendors in order to arrive at an appropriate procedure for re-seeding with native grasses; (Fort Union Archives and Records, Watrous, NM.)

<sup>5</sup>William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England.*, New York: Hill and Wang, 1983, pg. vii.

<sup>6</sup>Jennifer Knuth, University of Pennsylvania, Philadelphia, PA, March 1994.



Nonetheless, this study employs the convention definition of cultural landscape in order to work within the existing National Park Service framework.

Perhaps the most effective way to analyze the Fort Union cultural landscape is as a progressive series of scales, suggesting a regional, local, and site specific significance of Fort Union. Further, each of these scales might to be explored chronologically to arrive at a continuum of human settlement in the region from prehistory through the army occupation of Fort Union.

### **The Santa Fe Trail**

Clearly, Fort Union is related to other National Park Service resources associated with the Santa Fe Trail including the Santa Fe National Historic Trail and Bent's Old Fort National Historic Site located in Colorado. The recent Comprehensive Management and Use Plan for the Santa Fe National Historic Trail presents the challenge of conceiving, managing, and interpreting the Santa Fe Trail as "a single, integrated resource" across federal, state, local and private interests.<sup>7</sup> Fort Union is identified as one of the many resources which link this 1,200 mile national resource trail system.

The Fort Union cultural landscape is also associated with other Park Service cultural resources including Pecos National Historical Park, not only for their mutual reference to the Santa Fe Trail but also for as yet undocumented use of the Fort Union valley as a campsite and access point for Native American and European explorers en route between Pecos and the Great Plains.

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<sup>7</sup>"Santa Fe National Historic Trail Comprehensive Management and Use Plan," United States Department of the Interior, National Park Service, May 1990.



## **Mora County and Northeastern New Mexico**

Mora Country is a remarkable artifact of New Mexico: its diverse ecology, advantageous location, and unfortunate poverty have combined to preserve a cultural resource, evident in its relative abundance of state and nationally registered historical sites.

Because of its function as both a military post and commercial center, Fort Union is associated with several of these northeastern New Mexico and Mora Valley historic resources.<sup>8</sup> In addition, the Fort Union Archives notes over thirty "Forage Agencies" or supply points throughout central and northeastern New Mexico and Southern Colorado which may have provided provisions to soldiers while campaigning away from Fort Union. Although many of these sites are currently not registered by either the state or federal government, and further research would be required to document each site's specific association with Fort Union, there is no question that the presence of the Santa Fe Trail and Fort Union substantially altered the region, changing a previously subsistence economy to a market economy.

In the immediate Fort Union vicinity, the communities which sprung up in response to the Santa Fe Trail and Fort Union, including Watrous (historic La Junta), Tiptonville, and Loma Parda, are largely ghost towns, though Watrous continues to maintain a small population. These related resources are recognized in the General Management Plan and greatly expand the understanding of Fort Union as a cultural landscape, though they are virtually unknown to Fort Union visitors.

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<sup>8</sup> These sites include National Historic Places: Cassidy Mill, Daniel Cassidy and Sons General Merchandise Store in Cleveland; La Cueva Historic District, La Cueva; St. Vrain's Mill, Mora; J.P. Strong Store and Narciso House, Ocate; Wagon Mound, and Watrous. National Register nominations include the multiple property nomination of Upland Valleys of Western Mora County and various sites related to the Santa Fe Trail. The New Mexico State Historic Preservation Office has designated several additional sites including the Valdez House in Cleveland; Olguin Barn and Corral Complex, El Alto; the Ledoux Historical District; Cassidy, Garcia and Doherty Houses; the Gordon-Sanchez Mill, as well as the entire Mora Historic District, Mora; North Carmen Historical District; Santa Clara Hotel, Wagon Mound; the Krönig Ranch Complex; La Junta Grist Mill; the entire town of Loma Parda; and, located in Watrous: the Lyman Ranch House, the Tipton Ranch House, the Watrous Ranch, and the Wildenstein's "Glenwood" Ranch House. (Figs. 23, 24)





*Figure 29: Loma Parda Ruins (Photo by Author)*

### **Loma Parda: A Lost Landscape of Fort Union's Cultural History**

Loma Parda, a town which boasted a population of approximately 400 during the historical period is a particularly fine example of the relevance of this medium range scale of the Fort Union cultural landscape. (Fig. 29) Historically eschewed as a mere whore town for the men at Fort Union, it is clear from both the ruins and the poorly documented histories that Loma Parda had far greater significance to the cultural history of the Fort and region even if its greatest market was entertainment. Located eight miles away from the Fort Union National Monument boundaries, access to Loma Parda from the Park site presents clear obstacles to management and interpretation even though their histories are directly linked and enriched by one another.

Because many of the Loma Parda structures were partly constructed of stone, even without receiving stabilization, the town remains a remarkably legible ruin. Loma Parda's greater state of preservation might also be attributable to the fact that at least one resident





has remained, and access is restricted to the now private property. Had efforts been extended even fifteen years ago, it is possible that Loma Parda would be a more intact ruin than Fort Union is today. Although Loma Parda is on the State Register of Historic Places, it has received no professional attention as an historic resource worthy of preservation and is therefore in complete ruin. Although at one time guided visits to Loma Parda by outside concession were advertised at the Monument, access today is virtually impossible due to issues of trespassing, the discontinuation of the guided tours, and the highly deteriorated state of the access route into Loma Parda. Thus, this portion of the Fort Union cultural landscape has virtually disappeared due to neglect and the economics of ghost towns which left not only Loma Parda but also Fort Union in ruin.

### **Fort Union as a Cultural Artifact**

Fort Union contains vestiges of the rich and complex history of cultural traditions of northern New Mexico and the southwest as the region where Native American, Hispanic, and Anglo cultures converged.

As noted, when the Army established posts in the West, it did so under strict financial constraints. These constraints forced Lt. Col. Sumner to turn to his troops to construct the First Fort Union rather than local civilian employees who might have provided appropriate technologies. Using techniques and methods from the east, specifically West Point, the First Fort Union was hastily constructed out of unhewn logs cut from the nearby mesa. Almost immediately, these constructions began to deteriorate.<sup>9</sup> The Second Fort Union was not terribly successful either. Despite the historical success of the star-shaped fort in both America and Europe, the earthwork was not only poorly engineered and constructed but also unsuited to the unstable Fort Union soils. Thus, on

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<sup>9</sup>Ivey, pg. 75.



the eve of the final Fort Union construction it was abundantly clear to the American Army that some adoption of the cultural building traditions of northeastern New Mexico would be necessary if their structures were to succeed.

The ruins of the Third Fort Union still portray the skeletal form of the Territorial style. As noted, by the time Third Fort was designed, the Army had finally grown familiar with local construction techniques including the use of adobe as a structural system. Likewise, the army imported many significant construction innovations to the region. Architectural historian Agnesa Lufkin Reeve writes that Fort Union's "...Greek Revival Style and extensive use of technological innovation such as nails and window glass had a powerful influence on domestic architecture in northern New Mexico...The construction method was local, but the style had come over the trail."<sup>10</sup> Thus, although Fort Union imported some materials and techniques to execute the Territorial style, they learned to rely upon local techniques of adobe production and construction. Upon the Fort's abandonment, many of the actual architectural details of the Fort were scavenged for their re-application to structures in nearby towns, thus reinforcing the extent to which Fort Union exists as a cultural artifact within the Park boundaries and beyond.

### **Fort Union as a Cultural Landscape**

The Fort Union landscape recalls the design, setting, materials, and workmanship of the historic period in an extremely evocative and respectful way, albeit different from reconstructed sites more common within the National Park Service. Inevitably, any intervention in the Fort Union landscape would have altered it in a modern way. Unlike reconstruction, permitting Fort Union to remain and continue in ruin honestly conveys the passage of time and provides an engagement of the visitor's imagination. In its unique status as a genuine American ruin, Fort Union might rate highest in integrity and

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<sup>10</sup>Reeve, pg. 53 & 54.



authenticity amongst the National Park Service landscapes. Indeed, as one visitor so succinctly expressed the Fort Union experience: "Great place...So very much history to feel."<sup>11</sup>

The Fort Union cultural landscape is the confluence of place and people. The ruins require the juxtaposition of the vast plain which would lack scale and meaning were it not for the series of human events which succeeded upon it. Substantially altering either the landscape or the ruins would render the monument substantially less than it now stands. Thus, despite the seemingly futile efforts to stabilize adobe, the drastic measures of covering the ruins with an enormous roof or back-filling the entire site would eliminate the context which gave them meaning. The landscape, without a cultural narrative, with no scale, no meaning, renders no attachment. To the extent that the Park's neighbors perceive no common history, their relative disinterest in Fort Union affirms this statement. The need for a broader cultural narrative at Fort Union cannot be under emphasized.

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<sup>11</sup>Excerpt from Visitor Log Book, 8/22/93, Fort Union National Monument, Watrous, NM.



## **Chapter 5**

### **RECOMMENDATIONS**

Many of the following recommendations necessitate the current National Park Service policy to reconsider its resources from the perspective of landscape. By considering the setting of a resource, patrimony gains dimension and context. These recommendations also suggest a blurring of the distinction between natural and cultural resources within the National Park Service as the term "cultural landscape" implies. Fort Union certainly could gain from such a combined categorization for it plainly displays the inextricable attachment of cultural resource its natural landscape.

#### **LANDSCAPE PRESERVATION**

##### **Vegetation**

At the very least, this study recommends the recommendations of previous studies be followed. Both the General Management Plan and Sandra Schackel's Historic Vegetation Study offer excellent suggestions for preserving and maintaining the Fort Union landscape, most of which have either been attempted or considered.

Sandra Schackel's landscape management recommendations include methods of improving the quality of the short grass prairie that surrounds the Fort. Schackel points out that the prairie should not be returned to the historical period (1851-1891) because it was so damaged by the army occupation at that time. Schackel suggests that the prairie be restored to its pre-disturbed state. The inevitable introduction of non-native species is not as serious a problem as the altered growth patterns of the prairie which included fire events. Certain species historically checked by an intolerance to fire are increasing while other species, which require fire in order to germinate, are decreasing. The use of





prescribed burns deserves reconsideration despite recent unsuccessful attempts. The wind and arid conditions at Fort Union perhaps require consultation with specialists in this field. Such efforts might well attract the attention of prairie vegetation specialists and might well present opportunities for interpretation. We are increasingly appreciative of the unique ecological qualities of the American prairie and find it increasingly difficult to find undisturbed areas of prairie vegetation to observe and study.

## **Views**

The General Management Plan for Fort Union prioritizes the need for securing view shed protection for Fort Union. On the one hand, the Plan points out the fact that due to the relative flatness of much of the surrounding land, enormous quantities of land must be secured to protect Fort Union's views. On the other hand, most of the adjacent lands are owned by a single concern, thus limiting the number of agreements which must be secured. As noted, despite the current relative uselessness of the adjacent lands for purposes other than grazing, such restrictions do not guarantee future preservation. Superintendent Myers has made advances toward the Union Land and Grazing Company which is unenthusiastic about any such agreement. Clearly, there must be greater incentives with which to arm the Fort Union negotiators. Perhaps some additional guidance and support might be lent by the efforts of the administrators of the National Historic Trails and the National Heritage Corridors. These issues of private land conservation and easements are larger legal battles which require the enabling of tax legislation and creative legal consultation. In any case, the recommendation is that the General Management Plan recommendations for view shed protection be re-emphasized as one of the most critical components of the Fort Union landscape.



## **Earthworks**

Since Andropogon Associates first contributed management guidelines for earthworks management, significant advances have been made in the treatment of earthen fortifications in the National Park Service. Because those guidelines were originally geared towards eastern United States resources, they are in the process of being amended and broadened for wider application. The "Earthworks Manual" suggests a program of management that reduces resource deterioration from visitor traffic and improves legibility by selective seeding.<sup>1</sup> Such specialized treatment should be applied to the Second Fort earthworks to improve their interpretation and management. Such subtle intervention would perhaps be more suitable to the Fort Union landscape than the intrusion of a viewing platform suggested in the General Management Plan. Further, the recommendations appropriate to the Second Fort earthworks might be considered when examining other earth-forms previously noted including trail ruts and the adobe field north of the fort.

## **Soils**

This study recommends the continued partnership between Fort Union National Monument and the Soil Conservation Service as well as other specialists in the fields of erosion and arroyo stabilization in order to develop softer, more restorative techniques for arroyo stabilization. Again, these techniques may be shared with the Santa Fe National Historic Trail which also manages extensive historic trail ruts which are prone to deterioration. As noted, the ruts in the Fort Union landscape are largely stable although generally with techniques that are visually jarring. The dramatic weather patterns in the Fort Union valley will always necessitate a need for erosion mitigation and Fort Union can provide leadership to the region by employing newer, better technologies.

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<sup>1</sup>*Earthworks Landscape Management Manual*, Andropogon Associates, National Park Service, Mid Atlantic Office, Philadelphia, PA, May 1987.



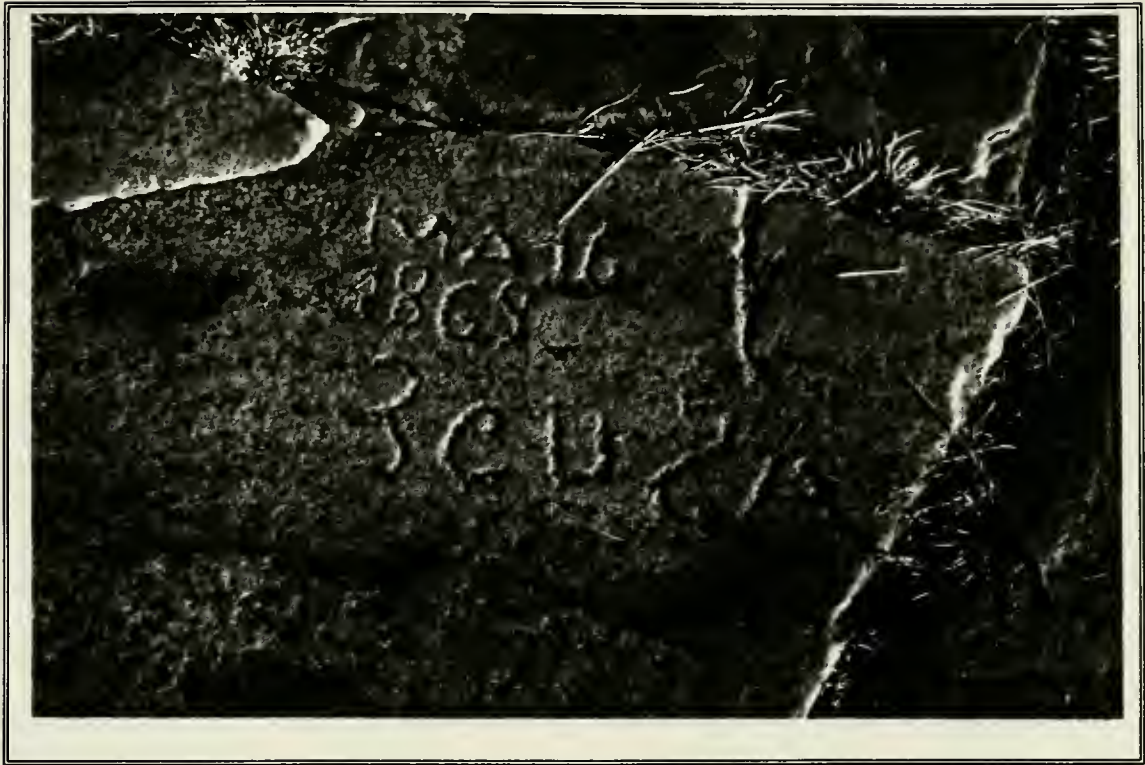


Figure 31: Flagstone Path Graffiti, Fort Union National Monument (Photo by Author)

## Circulation

In order to improve site accessibility, the recent Interpretation Plan for Fort Union National Monument suggests the restoration (indeed, arguably the *reconstruction*) of historic fort roads, paving them with stone-aggregate surfacing.<sup>2</sup> Although accessibility is a priority issue, before such an intervention is made careful study should be conducted including a Level III Inventory of site circulation details as issues of scale, materials and details – all of which are critical in the Fort Union landscape. Furthermore, detailed study might reveal that in the interests of vegetation and archaeological resource preservation and erosion prevention, the design of a modern trail would be more appropriate than the

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<sup>2</sup>Interpretive Plan, pg. 11.



restoration/reconstruction of historic roads. Although the distinction might appear subtle, the re-creation of a single site element in the Fort Union landscape is antithetical to the overall management scheme.

The existing historic flagstone paths provide the only tactile visitor experience at Fort Union. Complete with historic graffiti from the men who laid the stone in the 1860's (Fig. 31) the local flagstone effectively demonstrates the extent to which materials of the Fort describe both the ecological and cultural landscape of Fort Union. Although partially restored in the 1950's conservation campaigns, the flagstone paths, like the adobe structures they surround, are in ruin. Weathered and witness to foot traffic during both the historic and modern periods, the flagstone is not adversely affected by the relatively low visitation at Fort Union. Like the ruins, the flagstone paths authentically document materials, spatial relationships and grade elevations. The paths offer subtle clues to the Fort design as they change materials and form according to functions; for example, they signal significant entrances and exits with larger stones in specific alignment. As one of the most successful resources in the Fort Union landscape these paths should not be up-staged by the installation of additional circulation systems.

### **Resources beyond Park Boundaries**

The General Management Plan for Fort Union identifies several resources outside Park boundaries which merit Park sponsored preservation. Jake Ivey has located several additional resources including a possible bridge or ford crossing Coyote Creek. All resources outside park boundaries require basic, thorough documentation. Although resource specialists may determine that the preservation of some of these sites such as the lime kilns are best served by back-filling, it is critical to address these sites which inconveniently fell outside park boundaries.







*Figure 32: Lime Kiln Ruins Adjacent to Fort Union National Monument Boundaries (Photo by Author)*

## **Regional Preservation**

Far too little is known about the cultural context in which Fort Union was founded. Despite scattered efforts by archaeologists in the 1920's previously noted, little effort has been made to document the larger Fort Union cultural landscape. Local efforts have been made by Mora residents to document their town as "A Trail Era Community," although these efforts have not been met by the National Park Service. This study recommends that the National Park Service serve as a leader to local preservation interests throughout Mora Valley by initiating a cultural corridor designation.

Fort Union National Monument would be well complimented by the pursuit of Heritage Corridor legislation for the Mora Valley. With over 35 State and National Register sites within the sparsely populated area and strong local interest in cultural preservation, a partnership between local citizens and government could protect the rich natural and cultural resources threatened by sprawling development and land speculation



in north central New Mexico. The Heritage Corridors promoted elsewhere in the United States by the National Park Service offer an alternative to rigid preservation districting that could ignite historic distrust between *Nativo* and Anglo over land ownership and control.<sup>3</sup> By affording support to local planners and citizens to preserve their own community, the Heritage Corridor or Partnership program might well suit the Mora Valley. By assisting in the preservation of the region, the National Park Service stands to broaden the visibility and appeal of Fort Union National Monument.

## INTERPRETATION

Recommendations for interpreting the Fort Union cultural landscape occur at several scales. On the broadest scale, reading the larger landscape as a natural *and* cultural artifact is a worthwhile endeavor for both the National Park Service and general public. Perhaps by reading human history within the continuum of natural history, a greater compassion and understanding will result in improved stewardship of our environment and history.

At the smallest scale, the subtle manipulation of landscape elements such as vegetation and circulation paths can assist visitors in perceiving spaces and recognizing form in ways conventional signage and interpretation cannot. This scale of interpretation naturally occurs at Fort Union; for example, barely perceptible Santa Fe Trail ruts are naturally selected by the Annual Sunflower (*Helianthus annuus*) which indicate subtle changes in moisture. Thus, in late summer, trail ruts are sometimes called of by yellow paths through the prairie. This study suggests that, when applicable, a subtle level of

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<sup>3</sup>Local interest in cultural preservation is well documented in Mike Montoya's presentation: "Preservation of a Trail Era Community, Mora, New Mexico," August 11, 1990, courtesy of the Superintendent, Fort Union National Monument.



interpretation is more compatible with the low impact preservation techniques employed at Fort Union.

### **Regional Interpretation**

This study recommends that a longer and more inclusive story be interpreted at Fort Union, one which is suggested by the recent Interpretive Plan. Although the Plan states that one of five themes as follows: "Fort Union had important social and economic impacts on Indians, Hispanics and Anglos and other cultural groups of the American Southwest," there is no specific recommendation made to communicate that theme. This study suggests that the perception of Fort Union as a cultural landscape is the first step in incorporating this theme into the interpretation of Fort Union.

Today Fort Union is perceived as a physical and cultural island whereas historically it was the center of large regional network clearly documented in the landscape: centripetal ruts form of a large wheel with multiple spokes emanating from the center of Third Fort. Each spoke describes a relationship between Fort Union and a critical destination. The interpretation of Fort Union must include those critical destinations. If an 1868 military map of Fort Union included a detailed depiction of Loma Parda, why is it not a part of the National Park Service's depiction of the historic period, 1851-1891?

Ideally, the park service would have gained control of Loma Parda prior to its current state of ruin. Perhaps this would have been the case had a more respectful and less sensational history of the town been purported. Virtually all primary source material used to document life at Fort Union mentions or describes Loma Parda, providing proof of the town's relevance to Fort Union as a native settlement vitally linked to army presence. Yet, existing histories of Loma Parda play up the image of "Sodom on the Mora," sinking into the most base and least professional sort of historical depiction. Histories of native cultures and their vernacular landscapes must seek the same high standards of historical documentation as those required of sites such as Fort Union.



Research such as Myers' study of the founding of Loma Parda and Torre's study of the New Mexican volunteers begin to compliment the excellent history being written about the Fort by Oliva. Such regional study should thoroughly consider Native American and Hispanic settlement prior to the Army occupation. This regional history may begin to build relationships between the Fort and its neighbors who currently have little rapport with the Monument.

### **Interpreting the Fort Union Environs**

On a local level, this study recommends the interpretation of the Fort Union Cultural Landscape beyond park boundaries, thus complimenting the preservation recommendations of the General Management Plan. As noted, the resources on adjacent lands -- kilns, lumbering trails, a dam -- describe the ways in which the army adapted to the Mora Valley landscape. Many of these resources -- the post cemetery, race track -- added dimension to life at Fort Union during the historical period and would enhance our understanding of the cultural landscape today. Despite the General Management Plan's suggestions to preserve these resources, neither the GMP nor the recent Interpretation proposal make any recommendations for including them in the interpretation program.

### **Reconnecting Fort Union**

Although chronological or spatial divisions assist historians to intellectually dissect a site such as Fort Union into discreet, manageable historical bundles, it is the intent of cultural landscape studies to perceive the resource as a whole. The extent to which Fort Union has been temporally fragmented between First, Second and Third Forts is manifest in the physical and intellectual division of the site.

The General Management Plan begins to address issues of integration within and between Park boundaries by suggesting a right of way trail between the two Park Parcels. The recent Interpretation proposal suggests a shuttle bus take hourly trips to the First





Fort/Arsenal parcel on the exiting ranch road (accessible from route 477). These recommendations begin to address issues of accessibility but fall short of integrating the Fort Union landscape. Such integration might be achieved by the proposed presentation of a large scale site model, however it would appear that this task remains on the Fort Union interpretive agenda.<sup>4</sup>

The interpretation of the Fort Union cultural landscape would be strengthened by including all cultural resources on site base maps and models. As recommended by the recent Archaeological Study, the excavated and later back-filled foundations of the Good Templars Lodge should be interpreted as a significant structure and social organization during the historical period. As Jake Ivey's work on Sutler's Row has shown, a significant portion of Fort Union's cultural history is vested in these previously ignored resources.

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<sup>4</sup>Interpretive Plan, pg. 11.



## CONCLUSION

The National Parks Service Cultural Landscape Report utilizes a range of specialists to set specific guidelines for the management and interpretation of a resource. As a Cultural Landscape Study, this document does not offer report-level guidelines to park and regional staff seeking specific answers to specific questions at Fort Union National Monument. This study has sought to reassess staff and visitor perceptions of Fort Union as one piece of a very large and complex cultural and ecological puzzle. This study has argued the need to look at our National Parks as cultural *and* natural resources. People give scale and meaning to the landscape and the landscape directs and inspires the people who live in it. As its adobe structures erode back into the soils from which they were constructed, the line between nature and culture at Fort Union is particularly imperceptible. Fort Union must be managed and interpreted in an integrated way. Hopefully, this document is a first step toward a complete Cultural Landscape Report, providing in-depth, interdisciplinary study of the natural and cultural Fort Union landscape.

Relative to Canyon De Chelly, Mesa Verde and the other blockbuster "ethnographic" landscapes<sup>1</sup> of the southwest, Fort Union seems a modest site at which to explore the convergence of Native American, Hispanic, and Anglo American cultures. Yet, it is in these "common" American places that we learn about people. As John Stilgoe, author of *Common Landscape of America*, writes: "...*common* means not rude or vulgar but belonging to a people."<sup>2</sup> Because it is not a great holy place nor an extraordinary built work, Fort Union's modesty and simplicity speak volumes about the

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<sup>1</sup>Jill Crowley, "Canyon De Chelly – An Ethnographic Landscape," *CRM* vol. 14, no. 6, 1991.

<sup>2</sup>John R. Stilgoe, *Common American Landscape of America, 1580 -1845*, New Haven, CT: Yale University, 1982



way humans adapt to and are adapted by the landscape. This might be the most fundamental and significant idea behind Fort Union National Monument.



## BIBLIOGRAPHY

### Physiography

- Arnberger, Leslie P. *Flowers of the Southwest Mountains*. Tucson, AZ: Southwest Parks and Monuments, 1982.
- Beall, Harley. "a Geological Profile of the Fort Union Vicinity and it's Influence on the Occupants." Fort Union National Monument Archives, July 30, 1991.
- Bowers, Janice Emily. *100 Roadside Wild Flowers of Southwest Woodlands*. Tucson, AZ: University of Arizona Press, 1987.
- Brown, Lauren. *Grasslands*. New York: Knopf, 1985.
- Chronic, Halka *Roadside Geology of New Mexico*. Missoula, M.T.: Mountain Press, 1987.
- Elmore, Francis H. *Shrubs and Trees of the Southwest Uplands*. Tucson, AZ: University of Arizona Press, 1976.
- Hitchcock, A.S. *Manual of the Grasses of the United States, 2nd ed.* 2 vols., New York: Dover Publications, 1971.
- Keen, Richard A. *Skywatch: The Western Weather Guide*. Golden, CO: Fulcrum Inc., 1987.
- Matlack, Peggy "Late Summer and Autumn Flowers at Fort Union National Monument." Fort Union Archives, Fort Union National Monument, Fort Union, N.M., 1983.
- McPhee, John *Basin and Range*. New York: Farrar, Strauss, Giroux, 1980.
- "Soil and Water Conservation Plan." Fort Union, Cooperator, United States Department of Agriculture, Soil Conservation Service, Albuquerque, N.M., 1975.
- "Soil Associations and Land Classification for Irrigation, Mora County." Agriculture Experiment Station Research Report 205, New Mexico State University, n.d..
- Soil Survey of Mora County Area, New Mexico*. United States Department of Agriculture, Soil Conservation Service, 1984.
- Tierney, Gail D. and Phyllis Hughes *Roadside Plants of Northern New Mexico*. Santa Fe, N.M.: Lightning Tree, 1983.





Williams, Jerry L., ed. *New Mexico in Maps, 2nd ed.*. Albuquerque, N.M.: University of New Mexico Press, 1986.

Winograd, I.J., "Occurrence and Quality of Ground Water in the Fort Union Area, Mora County, New Mexico." United States Department of the Interior Geological Survey, Albuquerque, N.M., 1956.

New Mexico Highway Geological Map, New Mexico Geological Society, 1982.

USGS Fort Union Quadrangle, Geological Survey.

## **Fort Union**

### Primary Sources:

Billings, John S. *Circular No. 4 Report on Barracks and Hospitals with Descriptions of Military Posts*. Reprinted, New York, Sol Lewis, 1974.

Bowen, Catherine and Isaac, "' My Dear Mother': The Letters Home from Catherine and Isaac Bowen, 1851-1853, from Fort Union, New Mexico Territory." Fort Union National Monument Archives, Fort Union National Monument, Fort Union, N.M..

Correspondence, various documents, Fort Union Archives, Fort Union National Monument, Fort Union, N.M..

Correspondence, various documents, National Archives, Alexandria, VA.

Document File / Fact File excerpts, Fort Union Archives, Fort Union National Monument, Fort Union, N.M..

Evans, A.W. Bvt. Lt. Col. USA Major, 3d Cav. A.A.I.G. "Inspection Report of the Quartermaster depot, Fort Union." May 31st and June 1st, 1868 Fort Union Archives, Fort Union National Monument, Fort Union, N.M..

Frazier, Robert W. ed., *Mansfield on the Condition of the Western Forts, 1853-1854*. Norman, O.K.: University of Oklahoma Press.

### Primary Illustrations and Maps

Heger, Joseph "Fort Union, N.M. 1851, 1863," sketch, Arizona Pioneers Historical Society, Tucson, AZ.

Reserve Map, (and revision) Lt. Ludington, National Archives, 1868.



Timber Reserve for Fort Union, National Archives, Washington, D.C., 1868.

### Secondary Sources

"Draft Preservation Plan for Fort Union National Monument." National Park Service, Southwest Regional Office, Santa Fe, N.M., May 1988.

"Fort Union National Monument, New Mexico, General Management Plan." National Park Service, Southwest Regional Office, Santa Fe, N.M., 1985.

"Fort Union National Monument Interpretive Plan (Draft)." National Park Service, Harpers Ferry, W.V., 1992.

"Fort Union National Monument Statement for Management." National Parks Service, Southwest Regional Office, Santa Fe, N.M., n.d..

"Fire Management Plan Fort Union National Monument." National Park Service, Southwest Regional Office, Santa Fe, N.M., 1993.

Levine, Frances Phd. and William Westbury with contributions by Lisa Nordstrum "A History of Archeological Investigations at Fort Union National Monument." Southwest Cultural Resources Center Professional Papers no. 44, Division of History, Southwest Region National Park Service, Santa Fe, N.M., 1992.

Morrison, Charles Randall "A Historical Multiple Burial at Fort Union, N.M.: An Exercise in Forensic Archaeology." Fort Union Archives, Fort Union National Monument, Fort Union, N.M., n.d..

Oliva, Leo E., "Fort Union and The Frontier Army in the Southwest" (draft). National Park Service, Southwest Regional Office, Santa Fe, N.M., 1992.

"Park Boundary / Historic Scene Evaluation Report for Fort Union National Monument." Southwest Cultural Resource Center, Southwest Region National Park Service, Santa Fe, N.M., 1982.

Pitcaithley, Dwight T. and Jerome A. Green "Historic Structure Report Historical Data Section the Third Fort Union, 1863-1891, Fort Union National Monument, N.M.." Denver Service Center, National Park Service, 1982.

Schackel, Sandra "Historic Vegetation at Fort Union National Monument, 1851-1983," National Park Service, Southwest Regional Office, Santa Fe, N.M., 1983.

Soullieré Harrison, Laura and James E. Ivey, *Of Temporary Character: A Historic*



*Structure Report of First Fort, Second Fort, and the Arsenal and Historical Base Map, Fort Union National Monument, Fort Union, New Mexico.* National Park Service Southwest Regional Office, Division of History, Santa Fe, N.M., 1993.

Stapp, William "Chapman Lodge No. 2 A.F.& A.: The 1st One Hundred Years" Fort Union Archives, Fort Union National Monument, Fort Union, N.M., n.d..

Ruwet, Wayne "Fort Union: It's History and it's Value to Archaeology" unpublished thesis, UCLA, Fort Union Archives, Fort Union National Monument, Fort Union, N.M., n.d..

Utley, Robert M. *Fort Union National Monument Historical Handbook #35*, National Park Service, United States Department of the Interior, Washington D.C., 1962.

Zhu, Liping "Fort Union National Monument and Administrative History" Southwest Cultural Resources Center, National Park Service, Southwest Regional Office, Santa Fe, N.M., 1992.

## **Cultural Geography**

### Santa Fe Trail - Primary Sources

Brayer, Garnet M., ed. *Land of Enchantment: Memoirs of Marian Russell Along the Santa Fe Trail.* Albuquerque, N.M.: University of New Mexico Press, 1981.

Drumm, Stella, ed. *Down the Santa Fe Trail and into Mexico: The Diary of Susan Shelby Magoffin, 1840-1847.* New Haven: Yale University Press, 1926.

### Santa Fe Trail - Secondary Sources

Brown, William E. *The Santa Fe Trail.* St. Louis, MO: The Patrice Press, 1988.

Duffus, R.L. *The Santa Fe Trail.* Albuquerque, N.M.: University of New Mexico Press, 1930.

Findley, Rowe "Road to Santa Fe: The West's Longest-lived Trail Still Beckons to Adventure." *The National Geographic*, March 1991, vol. 179, no.3.

Gregg, Josiah *Commerce of the Prairies.* Max L. Moorhead, Norman, O.K.: University of Oklahoma Press, 1954.

"The Gateway Plains and the Santa Fe Trail" symposium Lecture Reader and Field Guide, Southwest Institute, University of New Mexico, 1991.

Myers, Joan and Marc Simmons *Along the Santa Fe Trail.* Albuquerque, N.M.:



University of New Mexico Press, 1986.

"Santa Fe National Historic Trail Comprehensive Management and Use Plan and Map Supplement." National Park Service, May 1990.

*Wagon Tracks: Santa Fe Trail Association Quarterly.* Various editions.

Mora County / Fort Union Vicinity

Bryant, Keith L. Jr. *History of the Atchison, Topeka and Santa Fe Railway.* New York: Macmillan, 1974.

Chavez, Thomas E. *Quest for Quivira: Spanish Explorers on the Great Plains, 1540-1821.* Tucson, AZ.: Southwest Parks and Monuments Association, 1992.

de Buys, William *Enchantment and Exploitation: The Life and Hard Times of a New Mexico Mountain Range.* Albuquerque, N.M.: University of New Mexico Press, 1985.

Ebright, Malcolm, ed. *Spanish and Mexican Land Grants and the Law.* Manhattan, K.S.: Sunflower University Press, 1989.

Forrest, Suzanne *The Preservation of the Village: New Mexico's Hispanics and the New Deal.* Albuquerque, N.M.: University of New Mexico Press, 1989.

Foster, Morris W. *Being Comanche: A Social History of a North American Indian Community.* Tucson, A.Z.: University of Arizona Press, 1991

Gunnerson, James H. "Apache Archaeology in Northeastern New Mexico." *American Antiquity*, vol. 34, no. 1, (January 1969).

Gunnerson, James H. "Archaeological Survey in Northeastern New Mexico." *El Palacio*, School of American Research, the Museum of New Mexico Archaeological Society of New Mexico and the Laboratory of Anthropology, Santa Fe, N.M., vol. 66, no. 5. (October 1959).

Gunnerson, James H. and Dolores A. "Apachean Culture: A Study in Unity and Diversity." In *Apachean Cultural History and Ethnology*, edited by Keith H Basso and Morris E. Opler. Tucson, AZ.: University of Arizona Press, 1971.

Gunnerson, James H. and Dolores A. "Ethnohistory of the High Plains." Cultural Resources Series #26, Bureau of Land Management, Colorado, 1988.

Hall, Thomas D.. *Social Change in the Southwest, 1350-1880.* Lawrence, K.S.: University of Kansas Press, 1989.





- Hammond, George P. *The Adventures of Alexander Barclay Mountain Man*. Denver, C. O.: Old West Publishing Company, 1926.
- Jackson, J.B. *The Essential Landscape*. New Mexico: Museum of Fine Arts, Museum of New Mexico, 1985.
- Kessel, John L., *Kiva, Cross and Crown: The Pecos Indians and New Mexico, 1540-1840*. Washington, D.C.: National Park Service, United States Department of the Interior, 1979.
- Limerick, Patricia Nelson *The Legacy of Conquest: The UnbrO.K.en Past of the American West*. New York: W.W. Norton Co., 1987.
- Lister, Robert H. "Notes on the Archaeology of the Fort Union Valley, New Mexico." *El Palacio*, School of American Research, the Museum of New Mexico Archaeological Society of New Mexico and the Laboratory of Anthropology, Santa Fe, N.M., vol. 55, Feb. 1948, pgs. 35-41.
- Montoya, Mike, "Preservation of a Trail Era Community, Mora, New Mexico." Fort Union Archives, Fort Union National Monument, Fort Union, N.M., 1990.
- Murphy, Lawrence, *Lucien Bonaparte Maxwell: Napoleon of the Southwest*. Norman, O.K.: University of Oklahoma Press, 1983.
- Myers, Harry C. "The Founding of Loma Parada, N.M." Fort Union Archives, Fort Union National Monument, Fort Union, N.M., n.d..
- Myers, Lee "Post at Hache's Ranch." Fort Union Archives, Fort Union National Monument, Fort Union, N.M., n.d..
- Myres, Sandra L., ed. *Cavalry Wife: The Diary of Eveline M. Alexander, 1866-1867*. College Station, TX: Texas A&M University Press., n.d..
- Pearce, T.M., ed., *New Mexico Place Names: A Geographical Dictionary*. Albuquerque, N.M.:University of New Mexico Press, 1965.
- "Report on the Historical Acequia Systems of the Upper Rio Mora." State Historic Preservation Office, Santa Fe, N.M., 1993.
- Stallard, Patricia Y., *Glittering Misery: Dependents of the Indian Fighting Army*. Norman O.K.: University of Oklahoma Press, 1978.
- State Historic Preservation Office, various nominations for San Miguel and Mora Counties, N.M., Santa Fe, N.M..



- Taylor, Morris F. *The First Mail West: Stagecoach Lines on the Santa Fe Trail*. Albuquerque, N.M.: University of New Mexico Press.
- Tiller, Veronica E. Velarde *The Jicarilla Apache Tribe: A History, rev. ed.*. Lincoln, NE: University of Nebraska Press, 1983.
- Torres, Frank J. "New Mexico Volunteers and the Civil War in the Southwest" Fort Union Archives, Fort Union National Monument, Fort Union, N.M., 1990.
- VanNess, John R. and Christine M., eds. *Spanish and Mexican Land Grants in New Mexico and Colorado*. Colorado: National Endowment for the Humanities, 1980.
- Wallace, Ernst and E. Adamson Hoebel *The Comanches: Lords of the South Plains*. Norman, O.K.: University of Oklahoma Press, 1952.
- Warren, Nancy Hunter *Villages of Hispanic New Mexico*. Santa Fe, N.M.: School of American Research Press, 1987.
- Weber, David J. *Myth and the History of the Hispanic Southwest*. Albuquerque, N.M., 1988.
- Westphall, Victor *Thomas Benton Catron and His Era*. Tucson, AZ: University of Arizona Press, 1973.
- Zeleny, Carolyn *Relations Between the Spanish-Americans and Anglo Americans in New Mexico*. New York: Arno Press, 1974.

### Maps

- Martinez Map, 1602, Fort Union National Monument File, Fort Union, N.M..
- Miera Y Pacheco -- Eighteenth Century Spanish map, Tucson, AZ: Southwest Parks and Monuments.
- Wheeler Survey, 1877, Tucson, AZ: Southwest Parks and Monuments.

### Remote Sensing

- 1944-1946 SCS 1:20,000
- 1984 USGS 1:12,000
- 1988 NPS 1:6000



## Other References

- Earthworks Landscape Management Manual*, Andropogon Associates for the National Park Service Mid Atlantic Regional Office, Philadelphia, PA., May 1987.
- Ferris, Robert G., ed. *Founders and Frontiersmen: Historic Places Commemorating Early Nationhood and the Westward Movement*. Washington, D.C.: United States Department of the Interior, National Park Service, 1967.
- Ferris, Robert G., ed. *Soldier and Brave: Historic Places Associated with the Indian Wars in the Trans-Mississippi West*. Washington, D.C.: United States Department of the Interior, National Park Service, 1971.
- Hanson, Lee and Dick Ping Hsu *Casements and Cannonballs: Archeological Investigations at Fort Stanwix, Rome, NY* Publications in Archaeology 14, Washington, D.C.: United States Department of the Interior, National Park Service, 1975.
- Linenthal, Edward Tabor *Sacred Ground: Americans and Their Battlefields*. Chicago, IL: University of Illinois Press, 1991.
- Luzader, Joan F. and Louis Torres and Orville W. Carroll "Fort Stanwix: History, Historical Furnishings and Historical Structures Reports" Office of Park Historic Preservation, National Park Service, Washington, D.C., 1976.
- Mahan, D.H. *Field Fortifications* New York: William Osborn, 1836.
- Rabenhorst, Thomas D. and Paul D. McDermott, *Applied Cartography: Introduction to Remote Sensing*. Columbus, OH: Merrill Publishing Company, 1989.
- Savory, Allan *Holistic Resource Management* Washington, D.C.: Island Press, 1988.
- Spears, Beverly *American Adobe: Rural Houses of Northern New Mexico*. Albuquerque, N.M.: University of New Mexico Press.
- Tilden, Freeman *Interpreting Our Heritage: Principles and Practices for Visitor Services in Parks, Museums, and Historic Places*. Chapel Hill, NC: University of North Carolina Press.











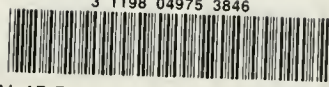
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