

**United States Department of the Interior  
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES  
MULTIPLE PROPERTY DOCUMENTATION FORM**

JAN 25 2002

CCUON

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in How to Complete the Multiple Property Documentation Form (National Register Bulletin 10B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

New Submission  Amended Submission

**A. Name of Multiple Property Listing**

Cattle Ranching in Arizona, 1540-1950

**B. Associated Historic Contexts**

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

1. Cattle in the Arizona Economy: An Overview.
2. The Spanish Colonial and Mexican Periods, 1521-1848.
3. The Early American Period, 1848-1880.
4. The Boom Period, 1880-1893.
5. The Foundation of the Modern Cattle Industry, 1893-1950.
6. Indian Cattle Raising: Case Studies of the San Carlos and Tohono O'odham Reservations, 1920-1950.
7. Southern Arizona Ranch House Architectural Context
8. Northern Arizona Vernacular Log Buildings Architectural Context
9. Windmills Design Architectural Context
10. Barbed Wire Fencing and Cattle Guard Design Architectural Context
11. Pre-Inventory of Cattle Ranches in Northern Arizona

**C. Form Prepared by**

name/title William S. Collins, Ph.D.  
 street & number 1300 W. Washington telephone (602) 542-7159  
 city or town Phoenix state AZ zip code 85007

**D. Certification**

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. ( See continuation sheet for additional comments.)

James W. Samari AZSHP 1/24/02  
 Signature and title of certifying official Date

ARIZONA STATE PARKS  
 State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Avraha D. Pope 3/11/02  
 Signature of the Keeper Date

(4)

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Table of Contents for Written Narrative

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Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets in How to Complete the Multiple Property Documentation Form (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

- E.1 Cattle in the Arizona Economy: An Overview
- E.6 The Spanish Colonial and Mexican Periods, 1521-1848
- E.16 The Early American Period, 1848-1880
- E.30. The Boom Period, 1880-1893
- E.39 The Foundation of the Modern Cattle Industry, 1893-1950
- E.65 Indian Cattle Raising: Case Studies of the San Carlos and Tohono O'odham Reservations, 1920-1950
- E.72 Southern Arizona Ranch House Architectural Context
- E.74 Northern Arizona Vernacular Log Buildings Architectural Context
- E.76 Windmills Design Architectural Context
- E.79 Barbed Wire Fencing and Cattle Guard Design Architectural Context
- App. Pre-Inventory of Cattle Ranches in Northern Arizona

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E. Statement of Historic Contexts (Document historic contexts on one or more continuation sheets. If more than one historic context is documented, present them in sequential order.)

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See continuation sheets.

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F. Associated Property Types (Provide description, significance, and registration requirements on one or more continuation sheets.)

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See continuation sheets

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**G. Geographical Data**

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**Acreage of Property** \_\_\_\_\_

**UTM References** (Place additional UTM references on a continuation sheet)

Zone	Easting	Northing	Zone	Easting	Northing
1	_____	_____	3	_____	_____
2	_____	_____	4	_____	_____

\_\_\_\_\_ See continuation sheet.

**Verbal Boundary Description** (Describe the boundaries of the property on a continuation sheet.)

**Boundary Justification** (Explain why the boundaries were selected on a continuation sheet.)

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**H. Summary of Identification and Evaluation Methods** (Discuss the methods used in developing the multiple property listing on one or more continuation sheets.)

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See continuation sheets

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**I. Major Bibliographical References** (List major written works and primary location of additional documentation: State Historic Preservation Office, other State agency, Federal agency, local government, university, or other, specifying repository.)

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**Bibliography** (Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

**Previous documentation on file (NPS)**

- \_\_\_\_\_ preliminary determination of individual listing (36 CFR 67) has been requested.
- \_\_\_\_\_ previously listed in the National Register
- \_\_\_\_\_ previously determined eligible by the National Register
- \_\_\_\_\_ designated a National Historic Landmark
- \_\_\_\_\_ recorded by Historic American Buildings Survey # \_\_\_\_\_
- \_\_\_\_\_ recorded by Historic American Engineering Record # \_\_\_\_\_

**Primary Location of Additional Data:**

- State Historic Preservation Office
- Other State agency
- \_\_\_\_\_ Federal agency
- \_\_\_\_\_ Local government
- \_\_\_\_\_ University
- \_\_\_\_\_ Other

Name of repository Arizona State Department of Library, Archives, and Public Records

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Branding a calf. Arizona State Library, Archives and Public Records, History and Archives Division.

**CATTLE IN THE ARIZONA ECONOMY: AN OVERVIEW**

In 1992, the federal agricultural census counted nearly 930,000 head of cattle in Arizona. These animals are a highly visible presence on the rural landscape. Though widely dispersed, they are found in all parts of the state. There are few places in Arizona so arid that no cattle graze on them. Where they are lacking it is usually because of legal barriers restricting land use, and there is a long and loud political debate over conflicting efforts to strengthen those barriers by some and weaken them by others. Of the state's 72,688,000 acres, about 40 percent, or 29,642,000 acres, is classified as pastureland and rangeland. This land crosses all jurisdictions—private, state, federal, and Indian trust. Cattle are some of the most significant land users in Arizona.

Most Arizonans are urban dwellers. The two largest cities, Phoenix and Tucson, contain more than 75 percent of the total population and are booming at an almost inconceivable pace. Most of the rest of the state, though growing in population overall, is far more modest in the absolute growth in numbers. There are even parts of the

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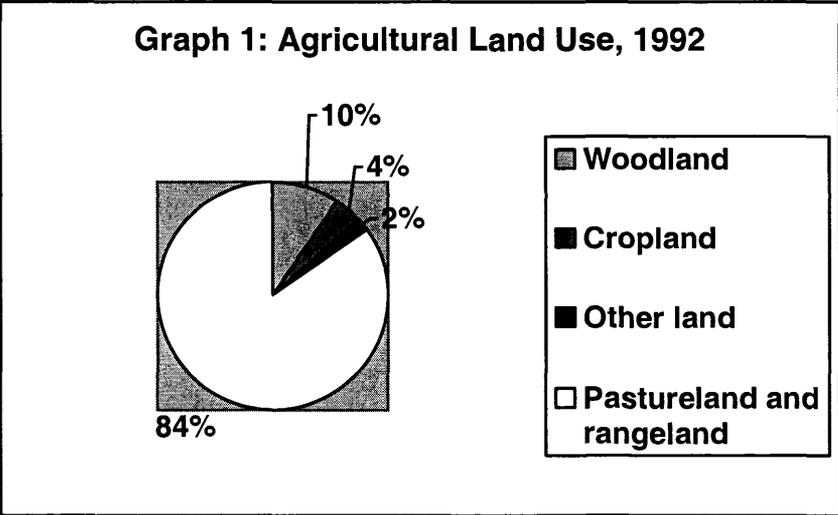
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state, Greenlee County, for instance, that have experienced population decline as major industries such as copper mining decline. There is likely to remain plenty of space to run cattle by the hundreds of thousands for many years to come. City dwellers, when they venture beyond the pale of mass development, will be forgiven if they believe that outside of Phoenix and Tucson, in the open deserts or the high forest country, they have entered Nature's world. It is easy to assume that where you cannot see a house or other building for miles around you are in a wilderness. Such a belief would be naive though. Cattle scattered far and wide are a sign of human presence. The land is being used and has been used for decades, if not for centuries. The great spaces we see along the interstate highways are as much human landscapes as Nature's terrain. Only the way it is used differentiates it from any other human landscape.

In an arid region, the availability of water determines how land is used. In Phoenix, for example, the development of irrigated agriculture in the late nineteenth and early twentieth centuries opened the lower Salt River Valley for settlement. It has only been a matter of time for higher value residential and industrial uses to replace agricultural activities. Water is limited, however, and there are large areas of the state that will never have enough water to support either farms or towns. Where the rainfall is too scarce for people to become concentrated, there is often enough to grow grass. Cattle in the arid West are a land-intensive source of wealth. Land used for agriculture, as shown in Graph 1, is dominated by pasture and rangeland.<sup>1</sup> There were 35,037,618 acres dedicated to agricultural uses in 1992, of which about 29,430,000 acres were used for livestock. Given the inventory of 928,783 head of cattle, this gives a ratio of almost thirty-two acres per head. In fact, it takes a far greater number of acres of open rangeland to support a single head. Irrigated land producing alfalfa allows the state to support more cattle than an open range system could over time.



Market statistics for cattle place the industry's overall economic value in relation to the greater livestock industry, agriculture in general, and the total state production. Of the total \$616,141,000 of livestock and poultry sold in 1992, all but 5.8 percent was related to cattle. Sale of fattened cattle accounted for approximately \$195,317,000, sale of calves and other cattle \$189,155,000, and dairy products another \$195,933,000 for the state's economy. All classes of sheep, hogs, and poultry combined produced only \$35,736,000. Of the agricultural sector, cattle represented 38 percent of the state's total market value of products sold of just over \$1.5 billion in 1992.

Before World War II the cattle industry was one of the most important contributors to the Arizona economy. From 1940 to today, the urban industrial and service sectors have advanced at a stunning rate. The nearly \$520 million in total cattle-related production in 1992 compares, revealingly, with a value added by manufacturing of just over

<sup>1</sup> U.S. Bureau of the Census. 1992 Census of Agriculture. Volume 1, Geographic Area Series. Part 3, Arizona State and County Data. U.S. Government Printing Office. Washington, D.C. 1994. 6.

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\$15 billion. Back in 1950, the value of cattle sold live alone was about \$49,816,000 while the value added by manufacturing was only \$127,946,000. Clearly, the modern urban economy has far outstripped the agricultural sector in its relative contribution to the state's economy.

The units of production, the factories of beef and dairy products, are the many farms and ranches scattered across the state. Data gathered in the 1992 census of agriculture provides a glimpse of some of the features of these farms and ranches. In 1992 there were 6,773 farms in the state, of which, 3,064 reported having cattle. Well over half of this number, 58 percent, had less than 49 head of cattle each. These 1,790 farms held 27,743 head. This compares to the twenty-one largest farms holding over 5,000 head each with a total of 367,829 head. Less than one percent of Arizona's farms held 39.6 percent of the total inventory of cattle in the state. The vast majority of farmers with cattle hold only a modest number, providing a modest income. Only a very few earn any great wealth from the cattle industry. Not all of the 3,064 farms with cattle actually sold any during that census year. Sales of cattle and calves for 1992 amounted to 732,472 head from 2,677 farms. The total value of these sales was \$379,207,000. The majority of these farms, the 1,404 holding less than 49 head, sold 16,542 head worth \$6.47 million. This averages to about \$4,600 per farm. On the other hand, the twenty-one farms with over 5,000 head sold 400,778 head worth \$234,834,000. This averages to about \$11,182,500 per farm.

For the sake of consistent terminology, we shall refer to those farms with over 500 head as the "large or big ranches." Those with less than 100 will be "small ranches" and those between the "medium-size ranches." We can portray the spread of modern ranching (calling every farm that owns a cow a ranch) as highly skewed. There were 2,145 small ranchers, holding 52,295 head of cattle, who had total sales of \$11,800,000 in 1992. The 602 medium-sized ranchers, holding 139,420 head, had total sales of \$32,182,000. The 317 large ranches held 737,068 head and had sales of \$335,225,000.

The reason for looking at this skew is that we must consider the different ways that the cattle industry is significant. For the largest number of people involved in raising cattle, sales of cattle represent only a small competence or a supplement to other income. The typical ranch is a small operation. On the other hand, in terms of economic contribution to the state, it is only the largest ranches that are really noticeable. Other data can provide greater depth to this broad portrait of Arizona ranchers.

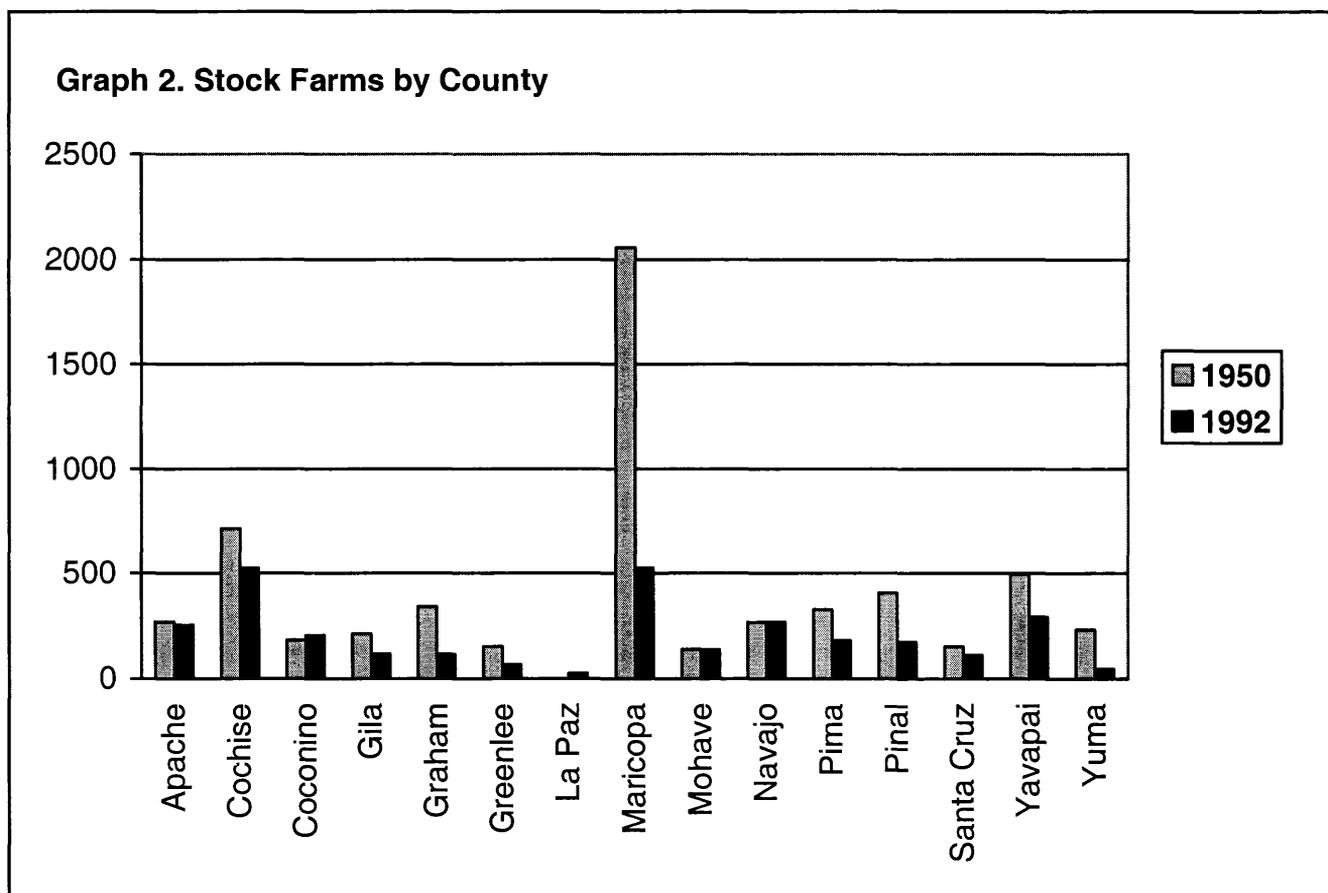
The size of the ranch can also be matched with information on type of ownership. Of the 3,064 farms with cattle, about three-fourths (2,265) are individually or family held, another 381 ranches (i.e. farms with cattle) are partnerships, and 244 are corporations (with a residual 174 in other forms of ownership). Of course, corporations are just a legal form and can also be family or individually owned. If we combine family-held corporations with other family ranches we get a total of 2,479 family or individually held ranches, 381 partnerships, and 30 non-family-held ranches. Looking at ownership by ranch size, we find that for small ranches, 1,868 were individually or family-held, 167 were partnerships, and twelve were non-family-held corporations. For medium-size ranches, 430 were individual or family-held, 130 were partnerships, and eleven were non-family-held corporations. For large ranches, 397 were individually or family-held, 84 were partnerships, and seven were non-family-held corporations. Family-held corporate ranches constitute the largest percentage of cattle sales of any ownership group (59 percent or \$227,272). Also, ten or few stockholders (203 out of 210) held almost all of the family-held, corporate ranches selling cattle and calves in 1992.

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Next, we can examine the distribution of modern stock farms and cattle to determine which areas of the state are most affected by the industry. Graph 2 shows the distribution of ranches, by county, in 1950 and 1992.<sup>2</sup> In both years, Maricopa and Cochise counties contained the most stock farms. Comparing the 1992 data with 1950, we see that the biggest change is in the dominance of Maricopa County. In 1950, Maricopa County held 38 percent of the state's 6,487 farms with cattle; today, it holds about seventeen percent. The actual number of farms dropped from 2,496 to just 524. We may draw one conclusion at this point. Maricopa County once contained the largest portion of ranches in the historic period, i.e., over fifty years ago. With the tremendous spread of the Phoenix metropolitan area, land once used to graze cattle and raise alfalfa has increasingly changed to urban uses, crowding the cattlemen out. We can be certain that the threat is high for any historic ranching properties in Maricopa County.

<sup>2</sup> Ibid. 190-1. U.S. Bureau of the Census. U.S. Census of Agriculture: 1954. Volume I, Counties and State Economic Areas, Part 30. U.S. Government Printing Office, Washington, D.C., 1957. 199-200. La Paz county was created in 1983 by a division of Yuma County.

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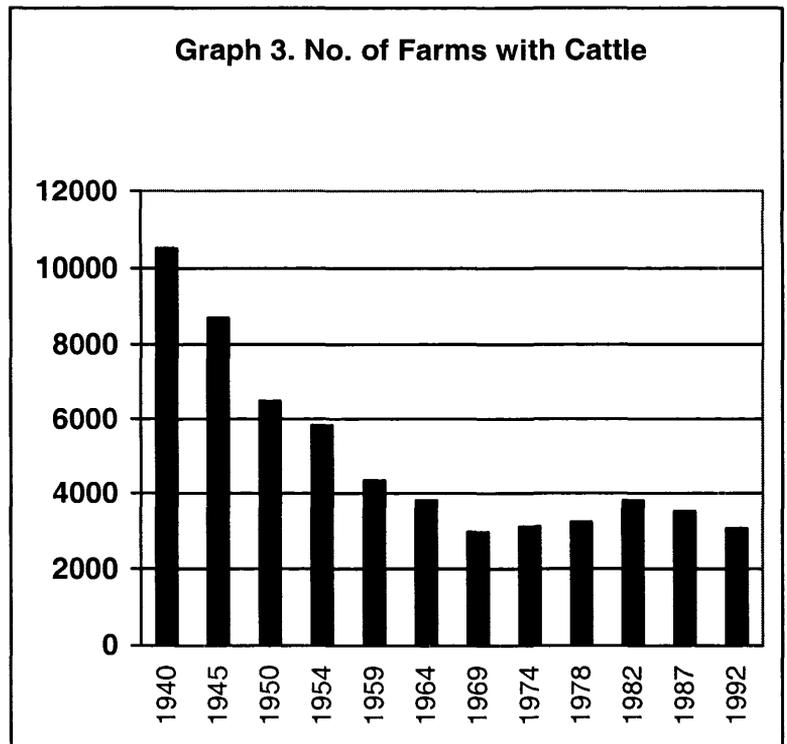
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The second-most important county for stockmen is Cochise. In 1950, Cochise County contained 713 stock farms, or eleven percent of the state's total. In 1992, it contained 522 or seventeen percent (almost exactly the same as in Maricopa County). Stockmen in the southeastern corner of Arizona not only are increasingly their relative significance, but are also showing a high degree of stability. With far less development pressure there, we can hope to find fewer threats to historic properties.

To give a better sense of recent trends, Graph 3 charts the number of stock farms since 1950.<sup>3</sup> While the number of ranches today is about half of what it was fifty years ago, the number has been relatively steady over the past twenty-five years. There was a temporary rise in the early 1980s, investigation of which lies outside the boundaries of this study. In 1950 there were 6,487 farms with cattle; in 1992, there were 3,064—a decline of about 53 percent. Maricopa County alone lost 1,972 farms and accounted for about 58 percent of the decline over 42 years.

This broad overview of the modern cattle industry in Arizona provides us with a number of conclusions. First, as an industry cattle are, and as we shall see always have been, an important source of wealth for the state. Most of that wealth is produced by a small number of large ranches, controlled primarily by family groups. In terms of the number of ranches, by far most are small and produce only a small, supplementary income for their owners. The economic significance of small cattle operations is fairly weak. An important topic to consider as we move to an examination of historic ranching in Arizona is whether this modern dominance by a few large ranches is long-standing or a modern development. We also saw important regional information, in particular the declining place of cattle raising in Maricopa County. This is the beginning of what we shall see as an important feature in historic cattle raising. Regionalism will be one of the most important features to be defined in the historic era.



<sup>3</sup> 1954 Census of Agriculture. 174; 1992 Census of Agriculture. 8.

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**SPANISH COLONIAL AND MEXICAN PERIOD, 1521-1848**

*The Arrival of Cattle in the New World<sup>4</sup>*

Domesticated cattle and the practices of raising livestock have their origin in the Old World from nearly the dawn of history. Early peoples from Europe, Asia, and Africa doubtless hunted wild bovine animals for countless eons for their meat and hides. At some point, captured ruminants such as cattle, buffalo, sheep, and goats were kept for their milk and to serve as draft animals. Across the ocean in the New World, the native Indian peoples had not yet domesticated many animals. In the Andean region of South America, the tamed llama served many of the same purposes as cattle in Eurasia. The peoples of North America had no such servant animals and continued to hunt animals like the wild bison.

Remarkably little is known of early Old World cattle. While they became basic to the economy of Eurasian civilizations, few writers found much to record about these mundane beasts. One thing that can be said with certainty is that by the early modern era, European cattle, while of one species, had attained a great variety of regional variation. Both natural and artificial selection created great differences in size, appearance, milking capacity, and adaptability. Isolation and difficulties of transport insulated cattle raising practices as well. Whether an animal was raised in close quarters or allowed to roam, whether it provided milk or was used mainly for its hide and tallow depended on the mix of local traditions and conditions. True "breeds" of cattle as we think of them today are the product of highly selective breeding practices tailored to produce an animal with maximum marketability. European conquerors, missionaries, and settlers brought the first cattle to the New World. Since the Spanish and English were most successful in transplanting their culture to the Americas it was their cattle types and practices that most influenced New World cattle raising. In Arizona, these two influences met and blended in a particular historical pattern. While not unique—Arizona shares in a Mexican borderlands heritage with several states—the combination of an extraordinary environment and its own historical timing has left modern Arizona with its own story of cattle development and a distinct cultural heritage.

Christopher Columbus discovered the New World under the sponsorship of the Spanish crown, leaving Spain with a tremendous lead in exploration, conquest, and settlement. Since Arizona fell within the expanding realm of Spain's world empire we will look briefly at the type of cattle and the cattle raising practices they brought with them. It is to the Spanish, adapting to conditions of the New World, that we owe much of the character of ranching in the American West. Events over the centuries have left a tangle of continuities and discontinuities so that ranching in Arizona today is directed to serve the modern American market, yet is shaped physically and culturally by artifacts and traditions brought by those first settlers.

Ranching, as opposed to simple cattle raising, can be traced to the cowpens of medieval Castille. Castille was one of the strongest of the Christian kingdoms on the Iberian peninsula. At the height of the Moorish conquest in Spain the Castellians were pushed to the highlands of the north-central part of the peninsula. Sheep were the most important of their domestic animals, cattle usually being held in close confinement to serve as draft animals. Mutton rather than beef was the common meat for both Christians and Muslims. By the mid-13<sup>th</sup> century, as the Castellians slowly pushed the Moors south, they found themselves in control of much of Andalusia, a low lying portion of southern Spain where lower rainfall makes the land more useful for grazing than for farming. Increasingly, cattle were let loose to graze on the hillsides and left to reproduce and fend for themselves. It was in Andalusia that such practices as tending cattle on horseback and organizing round-ups to cull the herds

<sup>4</sup> Most of the information in this section on Spanish cattle is derived from John E. Rouse. *The Criollo: Spanish Cattle in the Americas*. (Norman: University of Oklahoma Press, 1977).

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originated. Spanish cattlemen formed local associations, called *mestas*, to regulate their round-ups, settle disputes, control theft, and otherwise serve their common interests.<sup>5</sup>

With our limited knowledge of cattle before the British began to keep herdbooks in the later 18<sup>th</sup> century, it is difficult to be precise about the characteristics of Andalusian cattle. John Rouse, studying modern cattle in Spain, found four broad types with apparently minimal foreign influence. The *Retinto* is a red- to tan-colored animal sometimes shading towards brown. The Black Andalusian is a solid black. The *Berrenda* is white with black markings while the *Cacereño* is solid white. The *Carcereño* is actually native to Estremadura, which borders Andalusia on the northwest. All of these types have large, widespread, upturned horns and their hair is short, fine, and typically solid in color. Rouse compared these with some of the cattle he found in Latin America. While late 19<sup>th</sup> and 20<sup>th</sup> century cattle raising has seen intensive and highly selective cattle breeding, Rouse could still find animals that had been allowed to reproduce with relatively little mixing with modern breeds. These he called *criollo*, the "cattle of the country."

*Criollo* cattle, where they can still be found, exhibit a very narrow range of basic characteristics. They are generally tan with short, fine hair and carry long, upturned horns. Most are solid colored though some black-and-white occur. They vary in other characteristics such as size and milking capacity due to both artificial and natural selection. For example, the Florida "scrub" is a type of *criollo* conditioned by generations of feeding on poorly nutritious grass to grow rather small. Rouse posits that all of the *criollo* cattle in the New World are descended from a very small number of Andalusian cattle brought by the earliest Spanish explorers and settlers. The similarity between *criollo* in the Americas with those found in Andalusia indicates that only particular types were brought over. There is, he suggests, little reason to believe that the *cacereño* ever made the crossing.<sup>6</sup> The near uniformity of several basic characteristics is one reason to believe that only a few types of cattle were brought over from Spain. The historical record also notes cattle in the manifests of the earliest voyages to the New World, but practically none later. This makes sense if we consider the cargo capacity of the small ships of the time, the size of cattle, and the length of the voyage (average of sixty days). Once herds became established in the Americas there was no reason to carry them across the Atlantic.<sup>7</sup>

After the Spanish conquered the Canary Islands in 1479, they stocked them with cattle. Since Cádiz was Spain's primary Atlantic port it was natural that any cattle taken on board ship would be gathered from the immediate hinterland, which is Andalusia. Ships traveling to America would take on a few head of cattle either from Andalusia or from the Canary Islands, which were only recently imported from the same region. It was Columbus, on his second voyage, who carried the first cattle to the New World. This large colonizing expedition on seventeen ships carried 1,200 crew and colonists with a cargo of cattle, horses, hogs, sheep, plants, and seeds, to the Caribbean island of Hispaniola in November 1493. The records indicate that Columbus picked up cattle from both Cádiz and the Canary Islands. While the exact number is not known it could not have been very many.<sup>8</sup>

These early colonizing efforts were difficult; most of the first colonists eventually returned to Spain. While gold in the streams of Hispaniola provided the lure to keep up the effort, it was cattle that provided the necessary sustenance. In search of gold, a high ranking Spaniard and his retainers would build a villa near an Indian village whose inhabitants could be forced to work the placer mines. They obtained pasture rights to the surrounding land

<sup>5</sup> Rouse. 9-11.

<sup>6</sup> Ibid. 18-19.

<sup>7</sup> Ibid. 25, 33.

<sup>8</sup> Ibid. 21-24.

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and let their herd graze on the open range. When the gold was gone, the villa became a cattle ranch. By 1512 Hispaniola had a surplus of cattle and its primary port, Santo Domingo, became the base for further settlement of the Caribbean. Colonizers carried cattle to Puerto Rico, Cuba, Jamaica, and then onto the mainland. The *conquistador* Hernan Cortez in the 1510s established a sizable herd in Cuba, later selling it to finance his conquest of the Aztecs. With sizable breeding herds in the New World, the practice of carrying cattle from Spain practically ceased. In all, the total number of cattle carried from Spain and the Canary islands probably was no more than a few hundred. The first herd established on the mainland was in 1510 on the Isthmus of Panama. Cortez carried no cattle on his conquest; the first herd in Mexico arrived in 1521 with Gregorio de Villalobos. His first small herd may have numbered only seven heifers and a bull—a small start to the tremendous cattle industry in North America.<sup>9</sup> While Villalobos landed on the banks of the Pánuco River near the site of Tampico, most cattle later arrived at Vera Cruz from either Cuba or Hispaniola. The first permanent herd in what is now the United States was in Florida starting in 1565. Colonists in New Mexico trailed cattle there in 1598. The first domesticated herd arrived in Texas in 1717, preceded by wild cattle some years earlier. Cattle arrived in California in 1769.<sup>10</sup>

Although no permanent herd was established at the time, it was through Arizona that the Spanish first introduced cattle into what is now the United States. In 1540, the would-be conqueror Francisco Vasquez de Coronado led an expedition of about 300 Spaniards, upwards of 1,000 Indian allies, 1,500 horses and mules, 5,000 sheep, and 150 cattle towards the farthest reaches of the then-known New world to conquer the Seven Cities of Cíbola.<sup>11</sup> These legendary cities of gold were reported by Father Marcos de Niza the year before and excited the Spaniards to their first foray into Arizona. Coronado intended to eat all his livestock, but the story is told that in a particularly rough area of Sinaloa, Coronado was forced to abandon some cattle and that these began to reproduce and form a wild herd. Within a few decades, great herds numbering in the tens of thousands in northern Mexico could trace descent from these wandering strays from Coronado.<sup>12</sup> By the time Coronado crossed southeastern Arizona he had few cattle remaining. When he left the Gila River he may have had none left. There is no evidence that any of his cattle escaped and bred in Arizona. The expedition was a conspicuous failure and when the Spaniards realized that there were no golden cities to conquer, Arizona was largely left to its native inhabitants for the next 150 years.

Whether any of Coronado's cattle survived to form a wild herd is problematic. However, the Spanish tradition of open range ranching, brought over from Andalusia, inevitably allowed straying to occur. Wild herds typically spread beyond the settled areas. Within Mexico, the central valleys and coastal plains filled first and then ranchers moved to the high plateau region to the north. They were established as far north as the plains around Guanajuato by the 1530s. By the time of Coronado's expedition wild cattle had already reached the Rio Grande valley.<sup>13</sup>

The institutions of cattle ranching developed quickly in Mexico. A brand book was established in 1529. This was necessary in an open range system where cattle roamed with minimal tending. Following the tradition of the *mestas* of Andalusia, a livestock association encompassing all of New Spain was founded in 1537. The Spanish government knew that by encouraging cattle raising its New World colonies would have a strong economic

<sup>9</sup> Jay J. Wagoner. *History of the Cattle Industry in Southern Arizona, 1540-1940*. (Tucson: University of Arizona, 1952). 5.

<sup>10</sup> Rouse. 46

<sup>11</sup> Wagoner. 7.

<sup>12</sup> Rouse (p. 54) believes it is highly unlikely that strays from Coronado's expedition established a wild herd. Certainly no such herd was established in Arizona.

<sup>13</sup> Rouse. 54.

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support. In 1533 it granted free pastures to both Spaniards and Indians to encourage the rapid propagation of livestock. The *haciendas* of Mexico, typically, were established on royal land grants for mining. Cattle were brought in and raised to supply the miners with food, clothing, and work animals. But what started as a supplement for subsistence quickly became the mainstay of the *hacienda* economy.<sup>14</sup> This followed the pattern set earlier in Hispaniola. By 1600, *criollo* cattle in the New World numbered in the hundreds of thousands.

*Spanish Cattle in Arizona*

The era of the conquistadors ended soon after the failed Coronado expedition and expansion of the Spanish empire was left largely to missionaries. In 1591, missionaries of the Society of Jesus, the Jesuits, began their slow efforts at Christianizing the Indians in New Spain's northwestern frontier. The Jesuits founded missions and extended the frontier 1,000 miles from southern Sinaloa to northern Sonora. The most famous missionary in Arizona history was Father Francisco Eusebio Kino. Father Kino brought cattle in large numbers to his Arizona missions. They supported the mission economies and were a major attraction for Indian converts. To the mission at San Xavier del Bac, for instance, he brought about 700 head. These cattle were largely left to fend for themselves, foraging on the open range, and they soon began breeding in large numbers. The herds that Kino began expanded successfully well into the nineteenth century. Kino's significance in Arizona history is well known, but his leading role in establishing cattle in Arizona in the Spanish period is so important that it deserves special notice here.

Kino was a well-educated man, born in 1645 in the mountainous region between Austria and Italy. Nearly struck down by illness, he dedicated his life to missionary work and in 1681 he immigrated to Mexico. Transferring in 1687 to *Pimería Alta* (present day Sonora and Arizona) he began to establish a chain of successful missions. From his headquarters at the mission Nuestra Señora de los Dolores in Sonora, Mexico he made a series of visits down the Santa Cruz and San Pedro river valleys. He set up numerous *visitas* in northern Sonora and Arizona, including Tumacácori, Guevavi, and San Xavier del Bac. His strategy for Christianizing the native Pimas and Tohono O'odham was to provide them with the means for a settled existence centering at the missions. There they would learn to live in a European manner. From his stock ranch at Dolores, Kino brought horses, mules, cattle, and sheep and taught his converts how to care for their herds so they would expand and provide a permanent source of livelihood. By this time, cattle raising was well established in Sonora with perhaps 100,000 head of stock ranging at Terrenate south of the Huachuca Mountains, at Batepito on the Rio de Bavispe, at San Bernardino south of the Perilla Mountains, and at Janos.<sup>15</sup>

Gifts of cattle made Kino welcome throughout northern Sonora. Traveling into Arizona in 1696-97, he gave "a few cattle and a small drove of mares" to the eastern Sobaipuri Indians at San Pablo de Quiburi and about one hundred head to those at nearby Santa Cruz de Gaybanipitea on the San Pedro River.<sup>16</sup> He also left cattle at San Xavier del Bac and established a ranch at San Luis del Bacoanco. Kino intended these gifts to not only make missionaries welcome, but also to establish an alliance between the Spanish and the tribes. For the Sobaipuries, their new cattle were a mixed blessing. Sobaipuri cattle provided a tempting target for Apache raids. Within eighteen months of receiving the cattle, they left the San Pedro valley and moved closer to the missions for protection. By the 1760s they had either moved farther west or fallen to the Apaches.<sup>17</sup> Since Kino's travels were

<sup>14</sup> Wagoner. 8, 23.

<sup>15</sup> Odie B. Faulk. *Arizona: A Short History*. (Norman: University of Oklahoma Press, 1970). 19-21.

<sup>16</sup> Larry D. Christiansen. "The Extinction of Wild Cattle in Southern Arizona." *Journal of Arizona History*. 29, Spring 1988. 89.

<sup>17</sup> *Ibid.* 89-90.

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usually restricted to the Santa Cruz valley, he gave cattle frequently to the Tohono O'odham. He probably gave few or no cattle to the Pimas.<sup>18</sup>

In a 1702 letter to the Father Visitor, Antonio Leal, Kino explained something of his use of cattle.

There are already many cattle, sheep, and goats, and horses. . . for, although in the past year I have given more than 700 cattle to the four fathers who entered this Pimeria, I have for the new conversions and missions, which by the favor desired to established, more than 3,500 more cattle; and some of them are already far inland, 90 leagues from here (those at Sonoita, for example) and by divine grace they can pass with ease to the Californias, Upper and Lower. . .<sup>19</sup>

Following Kino's death in 1711, the Arizona missions suffered decades of relative neglect. In 1736 and 1737, Father Ignacio Javier Keller made two trips to the Pima villages on the Gila River. He found that many of the *rancherías* established by Kino had fallen apart. A revolt by the Pimas in 1751 resulted in the death of several missionaries and many of their native supporters. This short-lived rebellion had two important effects. First, the Jesuit order would never again have any real influence over the Indians (an effect completed when the order was expelled from Spanish territory in 1767). Second, in its efforts to reestablish control, the Spaniards established the *presidio* of Tubac (where a small farm and stock ranch for the Guevavi mission had existed since the 1730s).

Located in the valley of the Santa Cruz River at an altitude of 3,000 feet, Tubac sat at the bottom of a basin formed by the Tumacacori Mountains to the west and the larger Santa Rita range to the east. An engineer, Nicolás de Lafora, inspecting the region in 1766 reported "It is well-wooded by cottonwoods on its banks and the rest of the plain has many mesquites and other trees. The surrounding hills are quite bare."<sup>20</sup> The terrain set the limits of the extent of Spanish colonial cattle raising. While cattle occasionally wandered and went wild, especially in the nineteenth century, they could never stray far from a reliable water source. A register of 1769 provides a good indicator of the nature of Spanish colonial settlement in this region at this time. It listed eight missions and sixteen pueblos with 2,018 Indians and, in addition to the small number of soldiers and their families 178 *gente de razon* (Europeans) in Pimeria Alta.<sup>21</sup>



Ruins at Calabazas, SHPO photo collection

<sup>18</sup> Wagoner. 14.

<sup>19</sup> Ibid. 14-15. Quote is taken from Bolton's *Kino's Memoirs*. I. 357-8.

<sup>20</sup> From Lawrence Kinnaird. *The Frontiers of New Spain, Nicolas De LaFora's Description 1766-1768*. (Berkeley: The Quivira Society, 1958), 108 [quoted in Lynnette O. Shenk and George A. Teague. *Excavations at the Tubac Presidio*. (Tucson: Arizona State Museum, Archaeological Series No. 85, 1975). 2.]

<sup>21</sup> Wagoner. 19.

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Tubac's most important commander was Captain Juan Bautista de Anza. With his limited resources—the presidio had only about fifty soldiers—Anza fought for years against hostile Apaches. From 1760 to 1770 he recounted engaging in fourteen major campaigns and several smaller ones that resulted in the deaths of 115 hostiles, 109 captives, and the recovery of more than 2,500 stolen cattle.<sup>22</sup> This last reference brings out several points. By the late-eighteenth century, cattle were well established in Arizona and basic to the sustenance of both Spanish colonists and their Indian allies. At the same time, hostile tribes like the Apache took advantage of the cattle for their own needs. Probably most Apache raids on the Spanish were aimed at their livestock and the Spaniards considered the recovery of livestock a notable achievement.

In 1769, Russian trading and trapping posts coming down the Pacific coast towards California threatened Spain's relatively lax control over its northwestern territories. To counter the Russians, the Spanish established several missions and presidios. However, their supply link to Mexico by sea was tenuous. Franciscan missionary Francisco Tomás Garcés and Captain Anza conceived a plan to create an overland supply route to funnel colonists, livestock, and other supplies to California. Sixty-five cattle provided food on the hoof for the first expedition along the *Camino del Diablo*, or Devil's Highway, the almost waterless track across southern Arizona. The second expedition included some 240 people, 695 horses and mules, and 355 cattle. This group made the long march to northern California and founded San Francisco. To secure the new route, Garcés began a settlement at the confluence of the Gila and Colorado rivers. The route seemed promising until tensions between the Yuma Indians and the Spaniards flared out in 1781. The massacre of all the Spaniards, including Father Garcés, by the Yumas ended Arizona's brief role as the primary route to California.

Hard-pressed to maintain control over its northern provinces with an economy of resources, the viceroy of New Spain, Bernardo de Gálvez, in 1786 issued his *Instructions for the Governing of the Interior Provinces of New Spain*. This plan offered benefits and threatened punishments to the Apaches. For example, a company of Pimas was raised to supplement the few Spanish troops. At first, these allies were to be stationed at a former ranch site known as the *estancia de San Rafael de Buenavista*, but were placed first at San Ignacio in Sonora and later at Tubac.<sup>23</sup> While it called for vigorous war against hostile tribes, its most important feature was a plan to corrupt the Indians and make them dependent on Spanish supplies. Those Indians who made peace or were captured were to be settled at *establecimientos de paz* (establishments of peace) where they would be given a steady supply of alcohol, food, and inferior firearms. Tucson was one such supply point. Many Apaches did take advantage of this new policy and a new era of relative peace began. From the 1790s to the 1820s was a virtual golden age for Spanish colonists in Arizona. The number of settlers grew, as did the number of farms, mines, ranches, and the number of cattle. The commander of the Tucson presidio, Captain José de Zúñiga, reported that there were 37 Spanish civilians, 200 Indians, 4,000 cattle, 2,600 sheep, and 1,200 horses in the Tucson area. Another 1,000 head of cattle were reported at Tubac.<sup>24</sup> Some 5,600 head of cattle were said to be around Tucson by 1819. A census taken at Tumacácori mission in 1796 found 103 people (only four of whom were Spanish). Of Tumacácori, the missionary, Father Bordoy, said "The resources which the mission at present has. . . are quite small. Since it scarcely has lands in which to sow, not because there are lacking, for there are lands, but because

<sup>22</sup> Faulk. 30.

<sup>23</sup> Jack S. Williams. *Archaeological Investigations at the Captain's House at the Presidio of Tubac*. (Tubac, Arizona: Center for Spanish Colonial Archaeology, 1992), 18.

<sup>24</sup> Faulk. 44-7.

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the water is lacking with which to irrigate them. . . Cattle are not worth much, since they have increased in these lands.”<sup>25</sup>

This brief mention of cattle is both informative and frustrating. The written records from this era are not extensive and there are unanswered questions in almost every area. From this excerpt we see the natural limits of farming and how naturally cattle took to the land. Individually, cattle were “not worth much,” yet they supported the colonial economy. Selling cattle was about the only way missionaries could raise funds to build the churches at Tumacácori and San Xavier. The record reveals the importance of cattle raising, but chroniclers paid little attention to the details of this mundane activity.

Cattle ranching dominated other activities such as farming or mining in the Spanish colonial economy of this era. To take advantage of the new peace, ranchers expanded their herds and petitioned the crown for grants of land. Large land grants helped establish the Elias, Ortiz, Herreras, and other Hispanic families permanently in Arizona. Most land grants in Arizona date from the last years of Spanish rule and the first ten years of Mexican dominion (1821-1831). After 1831, with the Mexican government unable to continue the policy of subsidized peace, the golden era ended. The bribery policy had worked to some extent, but the Apaches had not been corrupted into forgetting their old ways. When the stream of supplies ran short, the Apaches quickly took up raiding again. No new petitions for grants in Arizona were filed after 1831.<sup>26</sup>

Tomas and Ignacio Ortiz received a large land grant at Canoa along the Santa Cruz River in 1821. The governor of the Provinces of Sinaloa and Sonora granted this land for the purpose of raising “large cattle” and horses. The Ortiz brothers acquired another grant at Arivaca, also on the Santa Cruz River, in 1833. This land was gained on the basis of an 1812 grant to their father, Augustin Ortiz, of two *sitios* for stock raising (a *sitio* was approximately one square league, or 4,338 acres.) The largest land grant was situated away from the Santa Cruz and San Pedro valleys, where most Spanish colonial activity centered, in the San Bernardino Valley. Lieutenant Ignacio Pérez, who acquired the San Bernardino Ranch in 1822, reportedly ran as many as 100,000 head of cattle on a range of nearly 75,000 acres. This tremendous ranch spanned both sides of the present international border. Pérez’s headquarters occupied the site of a presidio (which was never built) on the Mexican side. Other ranchers found good grassland in the Sonoita and Sulpher Springs valleys.

The Tuveras family’s Buenavista ranch (also known as the María Santísima del Carmén grant) was located along the present international border near Nogales. Sold to the father-in-law of Jose Tuvera, Don Josefa Morales, by the Treasurer-General of the West in September 1831, the land was occupied by Tuvera and his heirs until 1851, when it was purchased by Hilario Gabilondo and later by Jose Maria Quiroga in 1872 for \$500.

The Tumacácori land grant encompassed over 52,000 acres. A petition filed in 1807 for new papers confirming the grant claimed “The stock cattle and horses are increasing each day under the direction of the present minister, Fray Narciso Gutierrez; where fore the whole land is necessary for the preservation of said livestock.”<sup>27</sup> Under the Law of the West (which encompassed Sinaloa, Sonora, and southern Arizona), a grant of four *sitios* (17,350 acres

<sup>25</sup> Earl Jackson. “Tumacacori’s Yesterdays,” *Southwestern Monuments Association Popular Series*, No. 6, 1951. 40-41 [quoted in Lynette O. Shenk. *San José de Tumacacori: An Archaeological Synthesis and Research Design*. (Tucson: Arizona State Museum, Archaeological Series No. 94, 1976). 17].

<sup>26</sup> Wagoner. 27.

<sup>27</sup> Ray H. Mattison. “The Tangled Web: The Controversy Over the Tumacácori and Baca Land Grants.” *Journal of Arizona History*. 8. Summer 1967. 73.

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or 27 square miles<sup>28</sup>) could be given for cattle ranching purposes. The grantee was required to immediately place livestock on the land. These extensive lands could only be marked by simple stone markers that caused later disputes over wandering cattle, water rights, and legal boundaries.<sup>29</sup>

The San José de Sonoita grant was granted at the behest of Don Leon Herreras. Herreras was a prosperous *ranchero* living in Tubac who needed new land for his expanding herd. He petitioned for a grant of two *sitios* of land around an abandoned mission in the Sonoita valley. The mission site dated back to the days of Kino, but had since fallen victim to Apache raids. The grant was approved that year with final title following in 1825. As was typical of these grants, this one called for the grantee to mark the land with monuments of stone and mortar. The Sonoita grant also contained the unusual provision that if the owner abandoned the lands for one or more years, it would revert to the Mexican public domain.

As large as these grants were, more land was needed to raise large numbers of cattle. Mexican cattlemen could add to their grant lands by paying the cost of survey and the prevailing land price at the time of the grant. Later American ranchers would quickly learn the necessity of having a large range in an arid environment. In this way, Spanish and Mexican law better recognized the requirements for large-scale cattle raising in Arizona than did American law.

By this time, the friendly Pima and Tohono O'odham Indians had adopted cattle raising into their culture and because Spanish law recognized their rights, they too could take advantage of this era of land grants. Father Gutierrez thought that with the Hispanic population and their herds increasing, his Pima converts needed legal title to their land to avoid conflict. The Pima Indian governor at Tumacácori, Juan Letgarra, petitioned the governor in 1806 to give his people clear title to the land of the abandoned mission of Guevavi and the old *visita* of Calabazas. His petition expressed their desire for four leagues of land "to augment their means of raising cattle by an increase of pasturage." In 1807, the governor confirmed a grant of 6,770 acres plus an unknown number of acres that had been earlier purchased by the Jesuits. The governor ordered the commander at Tubac to measure and mark off the four square leagues plus two *sitios* of grazing lands previously occupied by the pueblo of Calabazas before the Pima were driven away by the Apaches in 1786.

The early years of the Mexican Republic saw turmoil throughout the country. Tucson had the only significant colonial population in Arizona, with about sixty civilians plus soldiers. Politically, it was a part of the state of Sonora (after 1831). The mission system, the backbone of Spanish colonial efforts was ended. For several years there was no resident missionary at San Xavier del Bac. At Tumacácori, Father Ramón Liberós raised funds to continue his work by selling 4,000 of the mission's cattle in 1822. He was removed in 1828 after all foreign missionaries were ordered out of the country. The mission lands were nationalized in 1834 but largely abandoned to the Indians until the American period. Apaches fought the Pima *vaqueros* at the mission rancho of Calabazas in 1830 after which the Pima abandoned the land they had gained in 1807.<sup>30</sup>

With not enough money to continue the subsidized peace and with no missionaries to try to Christianize the Indians, officials in Sonora ratcheted up the level of violence by instituting a scalp bounty system. War continued

<sup>28</sup> Henry P. Walker and Don Bufkin. *Historical Atlas of Arizona*. (Norman: University of Oklahoma press, 2<sup>nd</sup> Ed. 1986). 15.

<sup>29</sup> Janet Ann Stewart. *Arizona Ranch Houses: Southern Territorial Styles, 1867-1900*. (Tucson: University of Arizona and Arizona Historical Society, 1987). 106.

<sup>30</sup> Mark R. Barnes. San Cayetano de Calabazas National Register of Historic Places Registration Form. 1990. 7:15.

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to the point that by the 1840s most Mexican ranches in Arizona were abandoned and the few remaining settlers were huddled about the presidio at Tucson. The giant San Bernardino ranch was abandoned sometime around 1831-33. Petitions were filed in 1831 for the Tres Alamos on the San Pedro River, but with increasing hostilities, nothing became of this last effort to expand ranching. Cattle raising as an industry ended and the animals left to the wild. Previous experience showed that the hardy cattle could do very well for themselves in the wild. Early American travelers through Arizona in the 1840s reported vast herds of wild cattle and range conditions were noted as excellent. However, by the 1850s, wild cattle were exterminated from the Arizona range. The cause was simply the continuous slaughter of wild cattle by Apaches, American soldiers and gold-seekers crossing Arizona, and Mexican hunters supplying meat to Fronteras and Santa Cruz in the 1850s that overwhelmed the animals' natural ability to reproduce. Chroniclers with the Mormon Battalion in 1846 reported stories about the abandonment of the San Bernardino Ranch. Thomas Dunn reported that the Apaches took "most" of the cattle from the ranch after driving the ranchers away. Another soldier, Robert Bliss, estimated that the Apaches took 7,000 head of cattle from the San Bernardino. Enough survived, though, to form a large herd of wild cattle. It was this wild herd that fought with the Mormon Battalion in their famous "Battle of the Bulls" on December 11, 1846. At a point where bluffs restrict the San Pedro River on both sides, enraged wild bulls injured several Mormon soldiers and many cattle and mules.<sup>31</sup>



Boundary marker at San Bernardino Ranch. Arizona State Library, Archives and Public Records, History and Archives Division.

William H. Emory, whose journal recorded the passage of the Army of the West, which preceded the Mormon Battalion, noted that the Pima Indians had few cattle and what they had were all steers used for tilling. The American soldiers observed fresh cattle and horse tracks, which, they were told, were made by Apache raiding parties carrying off livestock from Sonora.<sup>32</sup> The Mormon Battalion's encounter with wild bulls was not unique. In 1851, Boundary Commissioner John R. Bartlett, surveying the U.S.-Mexico border established by the Treaty of Guadalupe Hidalgo in 1850, recorded a couple of encounters where wild bulls chased his men.<sup>33</sup>

The wild herds never got the opportunity to expand far beyond the area of initial Spanish and Mexican settlement; most were restricted to the length of the Santa Cruz and San Pedro river valleys. Commissioner Bartlett found them halfway between Agua Prieta and Fronteras, south of the junction of the San Pedro River and Babocomari Creek. Other overland travelers, however, did not report cattle in Guadalupe Canyon or even within a few miles north of the old San Bernardino Ranch. It is impossible to estimate the exact number of wild cattle, but reports

<sup>31</sup> Christiansen. 89, 92.

<sup>32</sup> Wagoner. 27.

<sup>33</sup> Christiansen. 94.

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from the Mormon Battalion and later gold-seeker indicated that they numbered in the thousands, at least for a short time.<sup>34</sup>

Larry Christiansen, in his study of the extinction of wild cattle in southern Arizona, noted that only two out of more than eighty journals of Americans crossing Arizona in the 1840s and 1850s reported any female cattle. This suggests one reason for the failure of the wild herds to survive. The Apaches apparently had a preference for cow meat over bull meat. Colonel Cooke, the commander of the Mormon Battalion noted the occasion when three Apaches left a trading party at the San Bernardino Ranch and passed over an abundance of bull meat in order to kill a cow or calf. This selecting out of the cows may have crucially limited the herd's ability to reproduce. The wild herds were probably all but gone by 1854. In that year chroniclers with two trail drives from Texas to California reported no signs of any wild cattle.<sup>35</sup>

The Spanish and Mexican land grants left a tangled legal mess to be resolved under American rule. Under the Treaty of Guadalupe Hidalgo ending the Mexican-American War in 1848, owners of Spanish and Mexican land grants could secure continued title if they could find evidence in Mexican archives of the legality of the grants. The Territorial Surveyor General would then investigate the claim and report to the Secretary of the Interior. The U.S. Congress then had to take final action to approve the grant. By 1888, the Secretary of the Interior referred fifteen claims to Congress with thirteen recommended for approval and two for rejection, but Congress refused to take up the issue. Rather than deal with the complex issues itself, Congress established the Court of Private Land Claims to review the claims. Working between 1891 and 1904, the Court acted on 850,100 acres of land grant claims, confirming 116,414 acres.<sup>36</sup>

Complicating matters in Arizona, the Baca family of New Mexico won a settlement over a large land grant to Las Vegas, New Mexico in which it was allowed to select five tracts of almost 100,000 acres each elsewhere. The family chose two tracts in Arizona Territory. A tract of 94,289 acres, known as the Baca Float Number 3 lay along the Santa Cruz River and overlapped much of the Tumacácori, Calabazas, and San José de Sonoita grants. This Float was relocated in 1866 about five miles to the northeast. Only in 1914 did the Supreme Court resolve continuing legal difficulties from this Float. The second tract in Arizona, the 99,000 acre Baca Float Number Five, was located around Francis Creek in Yavapai County.<sup>37</sup>

<sup>34</sup> Ibid. 94-95.

<sup>35</sup> Ibid. 96-98.

<sup>36</sup> Walker and Bufkin. 15.

<sup>37</sup> Ibid. 15.

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**THE EARLY AMERICAN PERIOD, 1848-1880**

To facilitate our understanding of the history of the cattle industry, we shall develop guidelines to define significant periods. We have already explored the first major period, the era when the Spanish missionaries first introduced cattle into Arizona and great land grant ranches operated. Not least in the significance of this period is the profound effect that the introduction of cattle made on the native Indian economy. Of course, cattle were only part of the larger mission and presidio system imposed on these people by the Spanish, but as Father Kino knew, cattle were a necessary resource on which missionizing and colonizing rested.

There are two important points to develop as we move deeper into the history of Arizona's cattle industry. The first, as mentioned, is periodization. The second is regionalization. Up to now, we have examined only the limited area over which the Spanish and Mexicans colonized. Southern Arizona was the first area where cattle raising took root and as we saw in the introduction, this region is once again becoming the dominant place for cattle in the state. Most historical work on cattle ranching in Arizona has been limited to examining particular regions of the state. For example, Jay J. Wagoner's important work, *History of the Cattle Industry in Southern Arizona, 1540-1940* (1952), looked at the broadest possible extent of time while focusing on a limited place. Other authors have also tended to limit themselves spatially, looking at particular areas such as eastern Arizona, the Arizona Strip, particular jurisdictions such as individual counties or places like Organ Pipe National Monument. There is also much written on individual ranches and ranchers, which has to be synthesized into a broader perspective.

While this study encompasses the entire state, it has not abandoned regionalization as a major theme. As we shall see in more detail below, cattle raising in one part of the state operates with little reference to what is going on in another part. Northern Arizona ranchers are more affected by national economic trends than by what their fellows in southern Arizona are doing. Not that Arizona's ranchers are without any common features; there is the common legal framework of state laws that affects all livestock and there are important groups like the Arizona Cattle Growers Association that facilitate their common interests. Still, there are enough differences in economic orientation and physical attributes to justify separate analysis of different areas of the state. Regionalization in this study is based primarily on the economic factor of transportation. In this regard there are three broad regions. The first is southern Arizona, defined as that area where interstate transport of cattle centers on the Union Pacific (formerly Southern Pacific) Railroad. Similarly, northern Arizona is the region around the Burlington Northern Santa Fe (formerly the Atchison, Topeka and Santa Fe) Railroad. Existing entirely separate from these two major regions is the Arizona Strip, which has no rail line, but developed its own cattle industry oriented towards the population center of southern Utah. Within these three regions are many subregions as we shall explore later.

Not forgotten are the many ranching activities that have existed with a local orientation. Many small ranches, particularly those where cattle raising was only an auxiliary function, provided meat for a limited area. Because this is only a limited study and there are many such small operations, they will only be studied within the broader regional overviews.

As part of the decennial census, the federal government gathered data on the number of livestock in Arizona Territory. Up to 1880 the number of cattle was fairly low. Only 135,757 head roamed the entire extent of Arizona, up greatly from practically zero in the 1850s when the area came under American control, but far less than the number that would be permanently established. The 1880s saw a tremendous growth in the industry, leaping to 927,880 in 1890. From 1848 to 1880 will be called the pioneer period in this study. In this era only a few ranchers set up permanent cattle raising operations. The Civil War and Indian warfare greatly hindered American occupation in the Southwest. By 1880, Indian warfare was all but ended except for the famous campaign of Geronimo in southern Arizona. With the Southern Pacific transcontinental railroad route crossing southern Arizona in 1880 and the Atlantic and Pacific (later Santa Fe) route opening northern Arizona in 1883, a great boom

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period began. This continued until 1893 when a great drought devastated the industry. The census recorded a drop to 742,635 head in 1900. This boom and bust is the next major period.

A period of transition followed the drought of the 1890s. The number of cattle remained fairly stable (average of 796,494 head from 1900 to 1920) while the industry developed a more secure foundation. Towards the end of this period, the industry was so firmly established that it again boomed in the 1920s, reaching a historic peak of over one million head. The Great Depression of the 1930s forced another contraction in the industry. This fourth and last era from 1930 to 1950 was also fairly stable, though at a lower level of activity, with an average of 701,812 head across the state. The modern period after 1950 saw another boom, but examination of this era is beyond the scope of this study.

*The Pioneer Period in Southern Arizona*

Apache warfare against the Mexicans beginning in the 1830s was successful enough in Arizona to effectively separate the Spanish and Mexican cattle industry from the later American period. The Mexican cattle were either killed or scattered to run wild, eventually vanishing by the 1850s. Victory for the United States in the Mexican-American War led to the acquisition in 1848 of most of what is now its Southwest, including Texas, New Mexico, most of Arizona, and California. Under the terms of the 1853 Gadsden Purchase (ratified in 1854), the U.S. acquired those parts of Arizona and New Mexico south of the Gila River. The arid lands of Arizona (politically part of New Mexico Territory until 1863) were one of the harshest frontiers facing American settlement. Not only was there the challenge of the terrain which made traditional farming difficult, there was also the business of subduing the Indians if the newly acquired lands were to be Americanized. Violent conflict between the U.S. military, American settlers, and the various Indian groups, particularly the Apache tribes, continued sporadically until the final surrender of Geronimo in 1886.

Brief mention has already been made of the first few contacts between incoming Americans and the remnants of the great Mexican herds. Those who followed the Army of the West and the Mormon Battalion contributed to the extinction of the remaining wild cattle. Through the 1850s, Arizona was little more than a passageway for gold seekers and emigrants traveling to California. The southern route, which generally followed the Gila River, was one of the major transportation routes in the West. In the late 1850s the Butterfield Overland Stage Company opened regular service across the desert Southwest, followed in 1881 by the completion of the Southern Pacific transcontinental railroad line. Today, Interstates 8 and 10 carry heavy traffic along this same general route. People trailed their cattle and oxen (steers) along with them. The cattle trails did not follow a uniform path. From Texas and New Mexico to Tucson there were several possible routes. One trail left the Pecos River near Roswell, New Mexico and headed west through Tularosa, Santa Rita, and Silver City. It then followed the San Francisco River to the Gila, which it followed across Arizona. A second trail followed a portion of the future Goodnight-Loving Trail from the Pecos into El Paso, followed the Rio Grande north to about Las Cruces, then headed west to Deming and Lordsburg. In Arizona it passed the Chiricahua Mountains through Apache Pass, around the north side of the Dragoon Mountains to the San Pedro River, then between the Whetstone and Rincon Mountains to the Santa Cruz River and Tucson. This was the route later used by the San Diego & San Antonio stage line and the Butterfield. Yet another variation followed the path of the Mormon Battalion through Guadalupe Canyon, the San Bernardino Valley, and then up the San Pedro before crossing over to Tucson. A fourth trail came up north from Sonora straight up the San Pedro. Beyond Tucson the trail pretty much followed the Gila River except for cutting short the big bend by going straight from Sacaton to Gila Bend.<sup>38</sup>

<sup>38</sup> Noel M. Loomis. "Early Cattle Trails in Southern Arizona." *Arizona: The Journal of Arizona History*. III. Winter, 1962. 21.

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A Texan by the name of T.J. Trimnier may have driven a herd of 500 head to California in 1848, although this has not been proven. A herd following the Army of the West trail, driven by R.B. Moore from Texas is more certain as one of the earliest crossings of American cattle through Arizona. When a drought in Texas and New Mexico in 1851 combined with market prices in California of up to \$100 a head, Texas longhorns began being driven in large numbers to feed the gold-seekers. Herds were usually not that great, 800 to 1,000 head being a manageable size.<sup>39</sup> Through the 1850s and up to the start of the Civil War, herds of Texas longhorns passed annually across southern Arizona on their way to feed the hungry miners in California. With little population of its own except for the Indians, these Texas trail drivers found little incentive to establish ranches in Arizona. Many noted the abundant forage available and its potential was clear, but it was only a potential as long as hostile Indians made the area dangerous and there was practically no local market. A popular writer, J. Ross Browne, traveled across Arizona in 1864 and commented that the Gádara or Calabasas ranch was

One of the finest in the country. It consists of rich bottom lands and rolling hills, extending six leagues up and down the Santa Cruz River by one league in width, embracing excellent pasturage and rich arable lands on both sides. . . At present, however, and until there is military protection in the country, it is utterly worthless, owing to the incursions of the Apaches.<sup>40</sup>

Not only did Arizona contain practically virgin grasslands for livestock, cattle raising practices in this pioneer period made its capital investment needs low. The cattle themselves could forage on the open range and not only reproduced, but also provided their own transportation. Stockmen required little capital and not a lot of labor to maintain sizable herds. The industry was extremely land intensive though, and in the arid environment, a reliable supply of water was a necessity. Fortunately for the stockmen, ownership of the land they needed was never a requirement. The typical pattern was to acquire just enough patented land to secure good watering places. Then by controlling the available water, the surrounding open range was theirs for the taking. In this era there was no problem with government grazing permits or fees. Of course, the stockman's range was vulnerable to possession by latecomers, be they other stockmen, farmers, or other settlers. This led to conflict as the first on the range believed they should have perpetual rights to it.

Federal land laws encouraged the rapid privatization of public lands. Railroads acquired tens of millions of acres as subsidies for expanding the nation's rail net; mineral laws all but gave away tremendously valuable ore bodies. Perhaps most well known was the 1862 Homestead Act passed to provide the means for free labor and yeoman farmers to acquire a competence in land. Though its exact terms were amended over the years, the Homestead Act promised 160 acres of free land to anyone who would settle on and work it.

Arizona stockmen quickly used the Homestead Act to their advantage. The 160 acres they claimed encompassed water sources that automatically gave them control, although not ownership, of the surrounding range. With a small homestead, a stockman could control a ranch of several thousand acres. Some stockmen were not above bending the law to take control of more land. Through fraudulent and dummy entries, for example, by having their employees file homestead entries and then purchasing them cheaply after they were patented, some major land holdings were pieced together.

Trailing Texas cattle across to California accounted for most the industry's activities during the 1850s. One of the first to establish a permanent ranch in Arizona was Pete Kitchen. Born in Kentucky about 1822, Kitchen served in

<sup>39</sup> Ibid. 20-1.

<sup>40</sup> Quoted in Ray H. Mattison. "The Tangled Web: The Controversy Over the Tumacácori and Baca Land Grants." *The Journal of Arizona History*. 8. Summer, 1967. 80.

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the army during the Mexican-American War and then proceeded to California. He arrived in Tucson in 1853 or 1854. Realizing the potential of the grasslands along the Santa Cruz River, Kitchen decided to try ranching, taking a number of well-armed Opata and Mexican workers to a promising site along Potrero Creek, which empties into the Santa Cruz just north of Nogales. The adobe headquarters he built was practically a small fortress and defense against hostile Apaches proved a great challenge. When federal troops were withdrawn from the territory at the beginning of the Civil War, Kitchen, almost uniquely, managed to hold onto his ranch.

In this era, an isolated rancher could not survive just by specializing in cattle raising. These pioneers had to attain a high degree of self-sufficiency, producing all their food and many of the materials necessary for themselves and their workers. Pete Kitchen's ranch supplied all manner of agricultural goods to Tucson, the army, miners, and others passing through or attempting to settle in southern Arizona. In addition to cattle, Kitchen raised sheep, chickens, hogs, and horses. His fields produced fruits, vegetables, and grain. As the most reliable source of supply in the region, Kitchen's ranch played a crucial part in the early settlement of southern Arizona. But as Indian conflicts decreased through the 1870s and especially after the opening of the Southern Pacific Railroad, Kitchen's ranch no longer mattered so much, relatively speaking. After nearly twenty years of frontier cattle raising, he sold out in 1883, reportedly for \$36,000, and moved to Tucson where he remained a well-respected citizen until his death in 1895.

Henry Clay Hooker was one of the most successful ranchers in the pioneer period. Beginning with a 160-acre homestead, Hooker expanded his Sierra Bonita Ranch into a personal barony measuring twenty miles west to east, and almost thirty miles north to south. His life demonstrated the height of success that was rare, though possible to achieve in the cattle industry of this era. Born in Hinsdale, New Hampshire in 1828, Hooker moved to California in 1853, wisely choosing the merchant business over the vicissitudes of mining. He arrived in Arizona in 1866 and got his start in the cattle industry, as did many stockmen, by getting a contract to furnish beef to the army. He first tried to run his cattle in the Williamson Valley northwest of Prescott, but suffered high losses from Indians. He moved to the Babocomari Creek where he could supply beef to Ft. Crittenden, but again suffered high losses. Moving in 1870 to the Baboquivari Valley southwest of Tucson, he found his Indian problems somewhat relieved. Within a few years he was an important stockman in that part of the territory.<sup>41</sup>

In southeastern Arizona, between the Pinaleno, Dos Cabezas, and Chiricahua mountains on the east, and the Winchester and Dragoon mountains in the west, lies a broad, nearly level plain known as Sulphur Springs Valley. While tracking some stampeded cattle in 1872, Hooker came upon the valley and discovered its abundant water and lush grass. The next year he formed a partnership with James M. Barney, a Yuma businessman, and William B. Hooper of San Francisco who held extensive government supply contracts, and established the Sierra Bonita Ranch.



Henry Clay Hooker. From Gertrude Hill. "Henry Clay Hooker: King of the Sierra Bonita." *Arizoniana: The Journal of Arizona History*. II. Winter 1961. 12.

<sup>41</sup> Gertrude Hill. "Henry Clay Hooker: King of the Sierra Bonita." *Arizoniana: The Journal of Arizona History*. II. Winter 1961. 12-13.

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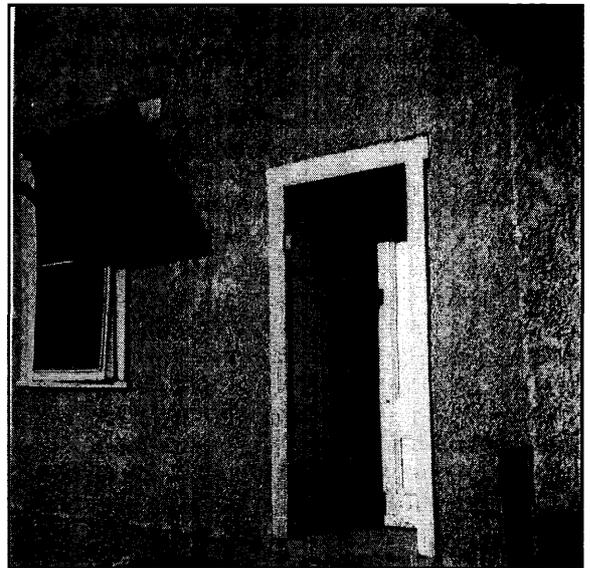
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Within a couple of years of its founding, the Sierra Bonita Ranch held several thousand head of cattle along with a large herd of horses. Hooker supplied beef to the Apache reservations and to army posts. After 1879, the Sierra Bonita could operate on the natural increase of its herd and Hooker no longer imported cattle apart from improved breeding stock. By 1884, Hooker estimated that he had supplied more than 100,000 head of beef and stock cattle since coming to Arizona.<sup>42</sup> On his patented lands were some 500 acres under fence with irrigated gardens and a dairy herd, making the ranch largely self-sufficient in food. Hooker even stocked carp in two large ponds and maintained a kennel for greyhounds. The *hacienda* house that was Hooker's headquarters reflected the wealth and importance of the Sierra Bonita Ranch.<sup>43</sup>

Between the Santa Rita and Whetstone Mountains is a broad expanse of rolling hills. Good grass and permanent water attracted cattlemen and sheepmen early. Men of the name Sanford, Kane, Gardiner, and Nye started some of the first small ranches there. The Cienega Ranch in 1880 ran 1,000 cattle and 23,000 sheep. Big money and big ambitions moved into this area in 1876 when Walter Vail, in partnership with two Englishmen, bought the 160-acre Empire Ranch from Edward Nye. One of the Englishmen, Herbert R. Hislop understood the economic reality of profitable cattle ranching in Arizona. "At present," he wrote, "we must do all in our power to get all the land we can as I easily see a stock ranch cannot be carried on in a limited space, but needs any amount of land. . . it is not a country for a poor man."<sup>44</sup> To make more than subsistence, to become wealthy in cattle, a rancher needed land and lots of it. Hislop came to the American West to make his fortune in ranching. He, Vail, and John Harvey started with the purchase of Nye's ranch, then bought up surrounding ranches until their spread lived up to its name. They immediately purchased an adjacent sheep ranch and by 1881 absorbed the nearby Sanford, Kane, and Gardiner ranches. It was, along with the San Bernardino Ranch, one of the largest in southern Arizona. In its early years, the adobe house served as a refuge from Indian fighting.



Door in the adobe wall of the Empire Ranch house. SHPO photo collection.

For a time a military unit camped on the ranch before establishing Fort Huachuca a few miles away. Hislop left the partnership in 1878 and Harvey sold out in 1881, leaving Vail the sole owner of what was becoming a true ranching empire. Five thousand cattle grazed on the Empire in 1880 and at its height, Vail controlled nearly a thousand square miles of range stretching from the Mexican border to the Rincon Mountains. Vail understood that to get a good return in western ranching, one had to make a sizable investment in land, cattle, and improvements. Very early, he brought in 40 head of Durham bulls to improve the stock line. Such an investment was rare in the years before the railroad was built. Most ranchers were content to raise Mexican *criollos* and Texas longhorns,

<sup>42</sup> Secondary sources on the number of cattle running on the Sierra Bonita's range vary considerably. Stewart mentions 20,000 by the mid-1880s. Hill says the number was as high as 10,000.

<sup>43</sup> Hill. 13-14. Stewart. 9-11, 38.

<sup>44</sup> Stewart. 49.

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suitable for sale to soldiers and Indians. The original Nye ranch house was a simple, four-room *zaguan* plan with a central hall dividing two rooms from the other two. Its adobe walls were eighteen inches thick. Stylistically, it followed Mexican traditions of building material and layout. Vail expanded the house with five new rooms, and then in 1884, after bringing a new bride to the Empire Ranch, attached another large adobe house to the original. The new addition boasted a large stone fireplace and a half-hexagon bay window, a Gothic Revival detail that spoke for the imported tastes of newcomers to Arizona.<sup>45</sup>

To the southwest of Cienega Creek is the drainage of Sonoita Creek. This land had long been used for cattle raising. Father Kino had a *visita* there in the late seventeenth century and there Don Leon Herreras received his San José de Sonoita grant. In 1874 Denton Sanford homesteaded on Sonoita Creek about six miles northeast of Calabasas. The large adobe ranch house he built that year was, after Hooker's Sierra Bonita, one of the most refined homes in southern Arizona for many years. Sanford later lost most of his property when the old San José de Sonoita land grant was confirmed by the U.S. Supreme Court in 1898. The remainder was eventually bought by Lee Zinsmeister in 1925 who turned it into the Circle Z dude ranch. The old Sanford house later fell into ruins.<sup>46</sup>

Another of the great cattlemen of southern Arizona was Colin Cameron. The Camerons were an important family from Pennsylvania. They made a fortune in banking and railroading and achieved high positions in the U.S. Senate and the presidential cabinet. Colin Cameron was born in 1849 and came west to Arizona in 1882. He and a brother started ranching in Arizona in a big way, purchasing the San Rafael land grant. At that time the grant was still undefined and squatters challenged Cameron to protect their claims on the land. However, over 17,000 acres were eventually confirmed.



San Rafael Ranch House. Stewart. ii.

Two adobe houses stood on the San Rafael when Cameron arrived. He enlarged them as he needed for several years, then built a large Colonial Revival house in 1892. This house burned in 1899, the victim of arson set by some settlers angry with Cameron for pursuing the land grant claim. Cameron was undeterred and built an even more splendid house the next year. Including its basement, this grand house stood three stories and its surrounding veranda bespoke of the French Colonial tradition. Its some thirty rooms were a veritable palace on the range and from it Cameron ruled over a ranch that dominated 600,000 acres.

Like Hooker and Vail, Colin Cameron had the foresight and money to improve his herd in the boom years of the 1880s. He became a noted authority on Hereford cattle and served for a time as president of the American Hereford Breeders' Association. He was also a prominent member of the National Live Stock Association. In Arizona he played an important role in the development of territorial livestock laws. After being appointed

<sup>45</sup> Stewart. 51-2. This house still stands and is being preserved by the Bureau of Land Management, which now owns the ranch.

<sup>46</sup> Ibid. 89-90.

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chairman of the Arizona Cattle Sanitary Board, he had drafted at his own expense, a set of stock laws derived from the best sections of stock laws from around the West. He then used all his influence to see it successfully passed through the legislature. Cameron sold the San Rafael in 1909 to William C. Greene of the Cananea Company and retired to Tucson where he died in 1911.

It is important to note that the arrival of Anglo-American ranchers into Arizona did not end the importance of Hispanics in the ranching business. With the decline of Indian warfare, the Otero, Pacheco, Elías, Ruelas, León, Ortiz, Ramírez, Amado, and other old families returned to ranching. Newcomers coming up from Mexico included the Carrillo, Aquirre, Robles, and Samaniego families.<sup>47</sup> Many others earned livings working on ranches all across Arizona. Historian James Officer commented on another important contribution of Hispanics to cattle ranching:

The cowboy lexicon includes many terms borrowed from the lingo (lengua) of the buckaroo (vaquero). Among the most common are ranch (rancho), bronco (bronco—rough or coarse), mustang (mestafío—stray or wild), lariat (la reata—rope for tying horses), lasso (lazo—loop), quirt (cuerda—cord or rope), stampede (estampida), cinch (cincha), and calaboose (calabozo—dungeon).<sup>48</sup>

*The Pioneer Period in Northern Arizona*

Cattle raising in northern Arizona followed developments in the south by several years. The region had only the slightest connection to the Spanish and Mexican colonial realm. Cattle acquired by the pueblo Indians through New Mexico may have reached Arizona, but would be of only marginal significance. Since soldiers of the Mexican-American War passed through southern Arizona, blazing a westward trail, that region became more familiar to cattlemen further east. Trail development in the north followed more slowly in the 1850s, first with the construction of Beale's wagon trail and with later transcontinental railroad surveys. Texas cattlemen did not use this northern route to California until well after the Civil War.

The major stock raising area of northern Arizona lies between Ash Fork and the New Mexico border and from the Mogollon Rim to the Grand Canyon. The first known cattle in this area were brought by James Stinson who set up a small ranch at the site of present-day Snowflake. Stinson soon sold out to a group of Mormon pioneers and moved to Pleasant Valley. A few years later in 1877, John Wood brought some 78 head of cattle from New Mexico and grazed them on a range in the Mogollon Mountains. Small-scale stockmen trickled into the region in the late 1870s and early 1880s. These included Dr. D.J. Brannen who, in addition to his medical practice, was a partner in the Brannen, Finney, and Brannen cattle partnership, a Flagstaff merchant, and one-time territorial legislator. A lawyer by the name of W.G. Stewart also arrived in Flagstaff in 1882 where he invested in cattle and also served in the legislature. Several years previous, in 1873, William Henry Ashurst moved into the Bill Williams Mountain area with a flock of sheep. In 1882 he sold his sheep, bought 400 head of cattle, and relocated to the area southeast of Flagstaff. Ashurst also became involved in politics and his son, Henry Fountain Ashurst, became a U.S. Senator. Further to the east, southeast of Holbrook, Will C. Barnes set about ranching in 1883. Starting with a herd of sore-footed Texas cattle bought from passing trail herds, Barnes ran up to 7,000 head of cattle in his seventeen years in the business. He served for a number of years (1887-92, 1894-1900) on the Arizona Live Stock Sanitary Board. In later years Barnes worked as a grazing inspector for the Forest Service and wrote several books about Arizona and the West. Other pioneer cattlemen of northern Arizona included D.F. Hart, William Munds, F.M. and W.B. Vanderlip, William Fain, W.D. Black, and C.H. Shulz.

<sup>47</sup> James E. Officer. *Hispanic Arizona, 1536-1856*. (Tucson: University of Arizona Press, 1987). 15.

<sup>48</sup> *Ibid.* 14.

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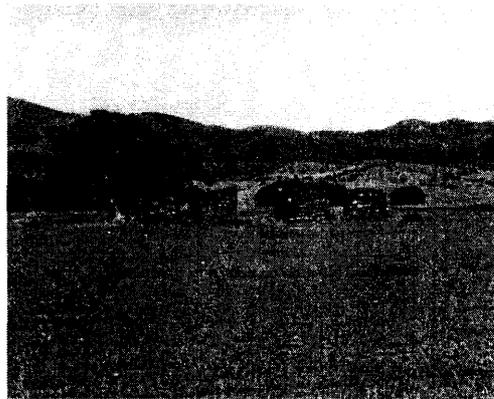
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The area along the upper Agua Fria River valley, near what is today the community of Dewey, was an area of early cattle raising. King S. Woolsey was a young pioneer, coming to Arizona in 1860 at the age of about twenty-nine. Already experienced in the ways of gold prospecting, having first sought his fortune in California, he joined the Joseph Walker party prospecting in the Prescott vicinity. Wisely, Woolsey decided that his economic outlook was brighter if he took up the job of raising supplies to sell to others who gambled on striking it rich. While he kept his hand in the mining realm by holding several claims, he also started a ranch on the Agua Fria. Despite the presence of troops at Fort Whipple, the region around Prescott and northeast over to the upper Verde River Valley was quite dangerous, with Indians fighting to preserve their lands from encroachment. Several times, Indian raiders made off with Woolsey's stock. The stone walls of his ranch house were built for defense, but Woolsey was a man who would take the fight to his enemy. At least three expeditions against hostile Indians were launched by civilians from the Woolsey ranch. In one particularly infamous incident, Woolsey led a group of thirty Americans plus Indian allies to the Fish Creek Canyon vicinity where he met in council with a group of Apaches. Treacherously, the Americans fired on the Apaches, contributing to distrust and more years of hostilities. After suffering some losses from his mining holdings, Woolsey sold his ranch in 1867 to the Bower brothers, who later filed a homestead claim on the surrounding land. Woolsey then moved south to the new community of Phoenix where he pursued a political career. He died in 1878. Woolsey was a man whose character fit strictly his time and place. Few today would approve of his methods of fighting, but in 1860s Arizona, there were few who criticized him. His later service in the Territorial Legislature indicates the respect that his fellow pioneers held for him.



Historic photo of the Woolsey Ranch house and its current ruinous state. SHPO photo collection.

The opening of the territory's second transcontinental railroad line, the Atlantic & Pacific Railroad (now Santa Fe), completely altered the nature of the livestock business. Up to 1882 northern Arizona ranchers were small-scale operators, but as happened in southern Arizona with the Southern Pacific, the new rail line opened up the area to the national market.

The Mormons understood how to benefit from the construction of the transcontinental railroad. John W. Young, a son of Church leader Brigham Young, came down to Arizona to do contract work for the Atlantic & Pacific. In 1881, the area around the San Francisco Peaks was little touched by stockmen. The earliest arrival there was one T.F. McMillan who built a log cabin and corral at a spring in the forest just north of the site of Flagstaff in 1876. John Young decided to take advantage of this relatively little used range and introduced cattle in large numbers. His Moroni Cattle Company set up headquarters in a valley about nine miles north of Flagstaff. Young built a fort

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to protect against Indian raids. The fort, named Fort Moroni, was constructed of double-length railroad ties with a one-story log building serving as the fourth wall. This fort no longer exists, but the valley in which it stood, Fort Valley, preserves its memory. Another Mormon, Lot Smith, established a ranch and dairy called the Circle S at Mormon Lake.

Further to the west in northern Arizona is Mohave County, created by the First Territorial Legislature in 1864. The county's first seat was at Mohave City on the military reservation of Fort Mohave. It moved to Hardyville in 1865 where it stayed until 1873 when it moved to Cerbat. The seat moved again to the booming mining community of Mineral Park in 1877. Finally, in 1887 an election decided the permanent home of the county seat at the railroad town of Kingman. The county lost territory to Nevada in 1865, then settled its present northeastern boundary along Kanab Creek in 1883 (The history of ranching in northern Mohave County will be considered later as part of the Arizona Strip.) It contains almost eight and a half million acres of land, making it the second largest county in the state.

Ignoring the Arizona Strip portion for the moment, Mohave County's dominant landforms, running down its center primarily north-south, are the Cerbat and Hualapai Mountains. The high point is Hualapai Peak at just over 8,400 feet. To the east of these mountains are the Hualapai and Big Sandy River Valleys, bordered on the east by the Grand Wash Cliffs and Aquarius Mountains. To the west are the Detrital and Sacramento Valleys and Dutch Flat, separated on their west from the Colorado River by the Black Mountains. Hualapai Peak holds a small, snow-level forest of pine and fir and is immediately surrounded by piñon-juniper vegetation characteristic of the uppermost Sonoran life zone. Most of the remainder is desert grasslands receiving less than ten inches of rain per year and some less than five inches.

Ranching in this region of Arizona followed a very different pattern from that farther east. While it shared the same transcontinental rail line, it maintained a pattern of small-scale ranching, unlike the large cattle empires that developed further east during the boom period of the 1880s. It is a witness to human tenacity that we find even here, in one of the most desolate and dry portions of the state, efforts at cattle ranching. What ranching did develop centered largely around the Big Sandy River, the area's most reliable water source. Highway 89 from the I-40 junction to Burro Creek Bridge drives straight up the valley; only little Wickieup is much of a stop for fifty miles in either direction. Drivers trying to pass through this area as quickly as possible see now only an intermittent flow in the Big Sandy. Flash floods following seasonal rains provide its only irregular surface flow. Like many streams in Arizona, the pioneers of the nineteenth century found the Big Sandy filled with a steady, reliable flow of water. The valley attracted farmers and ranchers and prospectors crawled over the surrounding mountain ranges.

The Hualapai Indians lived on this land long before the arrival of Americans. They survived in the desert by moving between their small settlements at the different watering places. As Americans moved in, they took over many of these watering sources and forced the Hualapais to give up their nomadic character. A small Hualapai reservation was established in 1880 in Cataract Canyon, a branch of western Grand Canyon, but it contained only a small strip of arable land. Their reservation was expanded in 1883 to include some 1,551 square miles on the south rim of the Grand Canyon. The Hualapais found work in the mines of Mohave County, they cut wood and hay for sale, and they became cowboys and ranch workers. Most live today in the vicinity of Peach Springs, the largest community on the reservation. Cattle raising provides an important source of employment on the reservation.

One man, Charles Spencer, supported the creation of the Hualapai reservation to serve his own interests. Spencer, a former army scout, freighter, and prospector, ran cattle for a while at Mud and Thorn springs in the Sacramento Valley. Other cattlemen and sheepmen crowded him off this range so he moved to the mountainous mesa near Music Mountain. He pushed for expansion of the Hualapai reservation which would keep other

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cattlemen out and give him protected status because he had a Hualapai wife. He built a stone cabin and on some irrigated ground grew vegetables and peaches. The place became known as "Indian Gardens" because several Hualapais lived there. Spencer later moved to Milkweed Canyon building a house and outbuildings, corrals, and a small dam. He was later killed in a fight with a former business partner.<sup>49</sup>

The earliest county tax records from 1866 list two ranches in Mohave County. The two are the Martin Spencer ranch and the Jackson and Armstrong ranch.<sup>50</sup> The first herd of notable size was trailed in by a Texan known as "Bud" Grounds. Grounds arrived in Arizona in 1872 or 1873 trailing about a thousand cattle to California. He decided, however, to stay in the region near Hackberry. By the early 1870s, ranchers were spread thinly across most of the county. At Truxton Spring developed Crozier Ranch, one of the more important in this part of the territory. It was originally founded by Bud Grounds, the brothers John and Jim Cureton, and John Hewlett in 1873. Hewlett left after a couple of years to pursue ranching near Peach Springs, then Grounds left for Mineral Park. Samuel Crozier purchased it in 1880 and operated it for the next thirty years. The Curetons went on to ranch near Hackberry while Crozier made improvements year after year. Tax records list many of the improvements Crozier built—a house and outbuildings, corrals, windmills, livestock, and water storage works.<sup>51</sup> The ranch eventually boasted a two-story colonial style house, and a garden and orchard. Crozier also owned a butcher shop in Hackberry and later in Kingman.

A small number of farmers and stock raisers settled in the Big Sandy Valley in the 1870s. The county census of 1874 counted 27 people comprising one family and 19 single men. Most scratched out irrigated gardens and some raised a few cows. By 1877 the largest property owner on the Big Sandy was H.R. McClure. He owned a 160-acre homestead on the Big Sandy in addition to a ranch called Cherry Springs. His tax assessment of \$6,680 was several times that of most other settlers in the area.

The *Arizona Republic* published a short overview of ranching in the Big Sandy Valley in 1952. One family, the Neals, illustrated a not unfamiliar story of Arizona ranching. William Neal came to the valley after first trying to ranch in Walnut Creek northwest of Prescott. He is credited with bringing the first Herefords to the valley. In 1871, William Neal married Florence Harris, daughter of another early cattleman. Their son, John, was born in 1881 and he continued as a cattleman all his life. John started his own ranch on Burro Creek and married Amy Cornwall, daughter of rancher Adamson Cornwall who served several terms in the state legislature, serving as speaker of the house during the 18<sup>th</sup> session. After John's death, his two sons, Leonard and Claude continued in the ranching business.<sup>52</sup>

In 1880, the county tax rolls recorded 48 ranches with 4,756 head of cattle, valued at \$47,870. These numbers jumped in 1890 to 101 ranches with 21,085 head, worth \$210,850. Four ranchers, Samuel Crozier, T.L. Bacon, John K. Mackenzie, and the Ship brothers shipped out more than a thousand head that year. Several others held cattle in the hundreds while the rest were primarily agricultural ranches with small numbers of cattle. The boom following construction of the Atlantic & Pacific Railroad, which reached Kingman in March 1883, fueled this great leap.

<sup>49</sup> Roman Malach. *Peach Springs in Mohave County*. (New York: Graphicopy, 1975). 43-45.

<sup>50</sup> Roman Malach. *Early Ranching in Mohave County*. (Kingman, Arizona: Mohave Graphics, 1978). 3.

<sup>51</sup> Malach. *Early Ranching*. 12-20.

<sup>52</sup> Roman Malach. *Big Sandy Country*. (New York: Graphicopy, 1975). 43-44.

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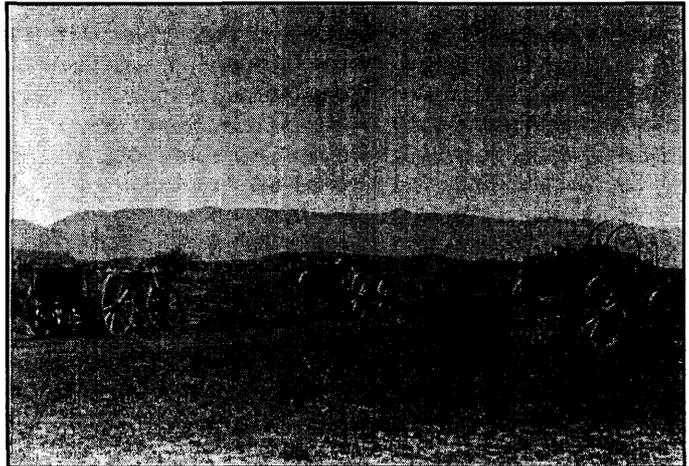
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The backbone of ranching across northern Arizona was the Atlantic & Pacific Railroad. Only a few ranches managed to survive prior to the early 1880s, supplying the small number of military posts and Indian agencies. There were few American communities to speak of. Mohave County took an early lead in ranching only because of its greater mining activities. When the transcontinental line opened the national market, the previously isolated rangelands from Ash Fork to Holbrook quickly filled with livestock to their carrying capacity and beyond. The major shipping points were Flagstaff and Holbrook. The railroad built stockyards and loading chutes in both towns, with Holbrook also getting cattle scales with a 50,000 pounds capacity. Kingman and Hackberry also rated as smaller, though locally important loading points.

Ranchers took advantage of rates charged by the railroad and altered their marketing to attain the greatest advantage. One year, cattle might be shipped mostly to Kansas City, while the next year it went to Los Angeles. Arizona cattlemen were businessmen, dealing with a national market and always seeking to maximize profit. Their associations tried to pressure the railroad into providing better services and charging lower freight rates. In 1889, G.W. Lang protested high freight rates by trailing a thousand head of cattle to Los Angeles. While he apparently saved a few dollars, the gesture was largely symbolic and anachronistic. The day of trail drives was over. For interstate transport of tens of thousands of cattle, only the railroads could provide reliable and relatively cheap transportation. As an example of how the railroad changed the magnitude of Arizona ranching, when the Aztec Land and Cattle Company began operations, it shipped in 33,000 head of cattle from Texas to Holbrook. The trail drives of previous decades paled in comparison. While pre-railroad ranches are historically significant for pioneering in northern Arizona, the railroad turned ranching into an industry that could help drive the economic development of the territory and set it on a firm economic base as it moved towards statehood.



Gathering bones. Arizona State Library, Archives and Public Records, History and Archives Division.

*The Pioneer Period in the Arizona Strip*

The broad area north of the Grand Canyon called the Arizona Strip is geographically separate from the rest of the state. Like the rest of the state, the Strip too has an extensive cattle raising history, but its economic focus is distinct from that found in the southern and northern sections of the state. The two transcontinental railroad lines define those two areas. The Arizona Strip is distinguished by the lack of such a connection to the rest of the country. This means that the cattle industry there developed on the periphery of the national meat market.

There is a great diversity in the terrain of the Arizona Strip. Most of it is arid and only the Virgin River is perennial. Its elevations rise from 1,150 feet at Grand Wash to over 9,000 feet on the Kaibab Plateau. A few other high peaks dot the horizon of the southwestern portion of the Strip. The highest of these is Mt. Trumbull at just over 8,000 feet. To the west of the Virgin River Gorge is a true desert area that extends into Nevada. Atop the Kaibab Plateau is an extensive pine forest where considerable snow falls in the winter. Most of the Strip, though, consists of a series of lower lying plateaus, in the range of 5,000 feet and are predominantly piñon-juniper grasslands.

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In 1846, when the United States went to war with Mexico, leading to the takeover of most of what is now Arizona, Brigham Young led the disciples of the Church of Jesus Christ of Latter-Day Saints to the far West to escape persecution. He thought, at first, that they were leaving the United States, but with the Treaty of Guadalupe Hidalgo, they found their place of refuge near the Great Salt Lake to be conquered territory. Hoping that distance alone would give this sect, known as the Mormons, protection, Young formed a plan for a great Mormon state, which if it could not be an independent nation, would at least be a state where they could practice their beliefs in peace. Called Deseret, this proposed state was gargantuan, encompassing all of present-day Utah and Nevada, most of Arizona, and large portions of Colorado, Wyoming, and southern California.

Congress, however, swept these plans away when it passed a bill, signed by President Fillmore in 1850 creating the Territory of Utah. Utah and the Territory of New Mexico were divided at the thirty-seventh parallel rather than along any natural boundary. While their imperial hopes for a grand state of Deseret were dashed, the Mormons decided to pursue an aggressive colonizing campaign that, they hoped, would lead to Mormon domination of most of the West between the Rockies and the Sierras. From Salt Lake City, Mormons spread out in all directions, establishing towns and spreading their faith. In southwestern Utah, the town of St. George became a major settlement and base for further colonizing efforts. The first Mormons explored the Arizona Strip region in the 1850s and began the colonizing efforts that made it virtually a cultural extension of Utah. Relatively isolated even today, through the nineteenth and early twentieth centuries, the Strip had few contacts with the rest of Arizona. It was not until 1929 that the Navajo highway bridge replaced Lee's Ferry, the only crossing of the Colorado River in the region. Politically it is divided within itself as part of two counties. Those living west of Kanab Creek are in Mohave County, and those east are in Coconino County. In the early historic period, traveling to the county seats was a trip of several days. Also, with St. George the seat of an important Mormon Temple, it is no wonder that the people of the Strip felt a greater connection to Utah than to Arizona.

The Arizona Strip can be divided into six subregions. Moving east to west, the first is the House Rock area containing Lee's Ferry and Marble Canyon. The high ground of the Kaibab Plateau contains a large forest area and the north rim of the Grand Canyon. The expansive Kanab Plateau is a lower lying grassland cut by Kanab Creek. Most of the Strip's permanent population lives on the Kanab Plateau in Fredonia, Pipe Spring, Colorado City, Cane Beds, and Kanab. West of the Hurricane Cliffs is the Shivwits Plateau and Main Street Valley. Grand Wash is a large valley draining into upper Lake Mead. This subregion has two major ranches, Pakoon and Tasi. In the extreme northwest corner of the state are the Virgin River and the community of Littlefield.

Jacob Hamblin led the first Mormon expedition across the Arizona Strip in 1856. They camped briefly at a place they called Pipe Spring. A few years later, in 1863, Dr. James M. Whitmore traveled from St. George to Pipe Spring with some cattle and sheep and built a dugout—the first settlement in the region. Whitmore was a Mormon, but was not sent to the area by the church. Almost immediately, Whitmore had difficulties with Navajo Indians stealing his stock. This continued until 1869. The Navajos generally retreated east of the Colorado River after the federal government allowed their fellow tribesmen held at Bosque Redondo to return to their native land and receive support. Other early Mormon pioneer ranchers in the mid-1860s included the Berry Brothers and others who pushed into Long Valley. At Moccasin Spring was a water source used by the Rhodes and Alexander ranches.

Indians killed Whitmore a year after arriving and Brigham Young purchased the estate. Young appointed Anson P. Winsor to collect livestock and move into the Strip region in 1869. He organized the Winsor Castle Stock Growing Co. in 1873 with a capital subscription of \$17,350. The Mormon Church subscribed \$10,000 and Young himself subscribed another \$2,300 with the rest coming from Winsor. In 1871 Winsor built the fortification at the spring that is today Pipe Spring National Monument.

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Before Winsor came upon the scene, between 300 and 400 cattle, mostly milk cows, grazed near Pipe Spring. Winsor expanded the herd so that he could install a cheese factory in the Pipe Spring fort. Soon, Winsor was producing between sixty and seventy pounds a day. By September 1873, The Winsor Castle Stock Growing Co. recorded 679 head of cattle, a significant increase due to both spring calving and tithing collections. This expansion continued for several years. After Winsor's company was bought out by the Canaan Cooperative Stock Co. of St. George in 1879, the cattle inventory at Pipe Spring was 2,269 head worth \$44,601.

In response to anti-polygamy reformers in the eastern states, Congress passed the Edmunds-Tucker Act in 1887. This law was the culmination of growing anti-Mormon sentiment. Not only did it greatly increase the punishment for polygamy, it disincorporated the Mormon Church, ended woman suffrage in Utah Territory, and took over church property. Pipe Spring would have become federal property but was transferred into nominally private hands. After some dispute with a federal marshal from Salt Lake City, the herd was removed from Pipe Spring after which time, the church never again had a property interest in cattle raising there. Finally, church interest in the area ended in 1895, when Benjamin F. Saunders bought the property.

Near Colorado City is Cane Beds, a small valley formed by the Vermilion Cliffs. Spring water there attracted the Bar 'Z' Cattle Company. The Company built a rock house and a long cedar post fence to regulate its range. Other improvements included a water pipeline, a corral, and two large reservoirs.<sup>53</sup>

In its most idealistic days, many Mormon settlements were established on communal lines. Though it had no direct connection to the church, the United Order became an important part of the spread of Mormonism. The United Order established a dairy and ranch on the Strip in 1879 managed by Albert Foremaster. The community at Orderville in southern Utah used the meadows of Buckskin Mountain for a summer range at least by 1877 and wintered their herd in House Rock Valley. After Orderville's United Order dissolved in 1885, individuals divided its livestock and continued using the same ranges.

Mormon were not the only ones to see the grazing potential of the Arizona Strip, though they regarded the land as their own and did not want to see an influx of gentiles (as they called non-Mormons). One such rancher, Preston Nutter, arrived in the Strip in the fall of 1893 with a large herd and precipitated the "Arizona Strip War." Nutter was a successful cattleman with ranches in central Utah. That year he had arranged to drive some 5,000 head of cattle purchased in the Kingman area to Utah, but when early snows blocked his path, he decided to winter his herd in the Strip. Impressed with the region, Nutter decided to make a permanent investment there. This "war" did not see any actual fighting, but Nutter's considerable resources allowed him to take over a large expanse of land. He bought out several small Mormon ranches and soon held the largest stock range in the Strip. He purchased Wolf Hole in 1897 and range rights across the Shivwits Plateau area. He also controlled parts of Grand Wash and Mount Trumbull. Legally, when Nutter bought out older Mormon ranches and water holes he was merely acquiring their squatter's claims, not an actual legal title to the land. To keep later intruders from invading his territory, he needed a way to gain legal title to the critical water resources.

In 1879 the Congress passed the Lieu Selection Act that empowered the General Land Office to issue certificates known as "scrip." Such scrip was intended for displaced Indians and settlers who had perfected homesteads in areas proposed for Forest Reserves. They could use the scrip to purchase unsurveyed, unoccupied, non-mineral public lands in lieu of what the government had taken back. One provision of the Act allowed this scrip to be bought and sold and soon there was a thriving trade in these certificates. Since the Arizona Strip was unsurveyed,

<sup>53</sup> Malach. *Early Ranching*. 28. Malach wrote that this sort of fence was referred to as "rip-gut" for what it might do to an animal trying to jump or break through it.

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non-mineral, and generally unoccupied with legal claims, it was a perfect place to use scrip. Beginning in 1900, Nutter began buying scrip and acquiring legal title to waterholes across the region.

To the west of Nutter, another cattleman, Benjamin Franklin Saunders, also achieved dominance over a large portion of the strip. Saunders purchased the Parashont Ranch from the Canaan Cooperative Stock Company in 1883. He continued to expand until by 1895 he controlled Canaan, Cane Beds, Pipe Spring, and Big Spring. In 1899 he purchased range rights to practically the entire area from Kanab Canyon to Soap Creek, from the rim of the Grand Canyon to the Utah border. His methods included filing mineral lode claims and millsite claims at major springs, including seasonal ponds like Jacob and Lamb Lakes. Saunders had the capital to have more corrals and fences built, more buildings raised or improved, roads blazed, and water developed than any previous rancher in the Strip. Saunders sold out in 1907 to E.J. Marshal whose Grand Canyon Cattle Company also acquired the Lee's Ferry and ranch. Marshal controlled the entire range north of the Colorado River from Echo Cliffs to the crest of Buckskin Mountain.



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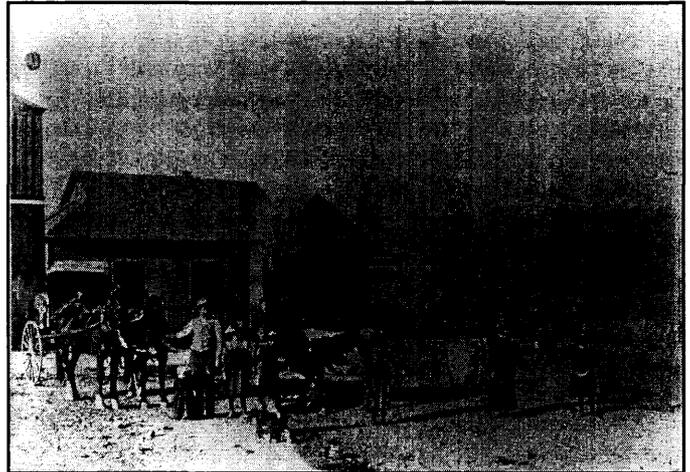
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**THE BOOM PERIOD, 1880-1893**

*Southern Arizona*

The pioneer period cattle industry had depended upon government contracts to supply beef to soldiers and the reservations. For this purpose, it sufficed to import sturdy Texas Longhorns and Mexican *criollos*. These animals survived well in the harsh environment and could be trailed across hundreds of arid miles. Their meat, however, had limited market appeal. The opening of transcontinental rail service in Arizona with the completion of the Southern Pacific in 1881 rearranged the parameters of the livestock industry. Foremost was the opportunity to begin supplying meat to a national market. To meet this challenge, ranchers had to shift from longhorns to more marketable Shorthorn and Hereford breeds. In the Sulphur Springs Valley, for example, the rail town of Willcox shifted the direction of local cattle marketing. Henry Hooker, for one, moved quickly to adapt his Sierra Bonita operation to the dictates of this expanded market. In 1884 he brought in Shorthorn and Herefords breeding stock. He paid \$30,000 at one point to bring in 200 bull calves from Illinois.



Hayes Ranch. Arizona State Library, Archives and Public Records, History and Archives Division.

Changing the breed of cattle required altering the method of cattle raising. These improved breeds were both more valuable and less able to fend for themselves on the open range. One method used to protect them was to exterminate natural predators like the wolf. Capital improvements on the ranch were also necessary. Henry Hooker was again an innovator when he put up twenty miles of fence on each side of his ranch to restrict strays. The boom period was the high point for the open range system, but it also stretched the capacity of the range beyond its natural limits.

Early arrivals in southern Arizona uniformly noted its abundant grasses along the major streams. The Mexican cattle period apparently placed no great strain on the region's grassland, or at least there was sufficient time in the decades from the 1830s to the 1870s for it to recover. However, by the 1870s, cattle herds had already reached optimal numbers. Further increases only tended to decrease the land's ability to regrow abundant forage year after year. In addition to cattle, there was also a thriving industry in harvesting wild hay to sell to the army posts and settlements. Ranchers themselves cut wild grasses for hay to sustain their herds in off seasons. Surveyors for the Public Land Survey often noted hay roads and hay corrals, especially in Cochise County. Typically, it was Mexicans and Indians using sickles, knives, and hoes who did this labor, seeking out grama, galleta, sacaton, and other good hay grasses.

Wild hay harvesting occurred over several decades, declining after about 1910. In years of good rain, yields per acre could be from 0.86 to 0.92 tons. In some riparian areas yields of up to two tons per acre were reported. This business was highly regional with Cochise County accounting for nearly half of the total hay harvest in the territory. Although not entirely a cattle-related activity, ranchers took advantage of the availability of wild grass for hay, and it

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provided an important support for the industry. Unfortunately, while it provided an important means of supplying food for cattle over the whole year, wild hay harvesting could also exacerbate the overgrazing problem that was growing ever more serious through the 1880s, especially when cut by poor methods. The Tucson *Star* noted the seriousness of the situation when it found

. . . the vast plain of grama grass west of Tucson is being dug out by the roots, thus totally destroying the hope of the grass starting where it has been cut out. . . The grama grass of Arizona is the finest pasturage known, and is a source of great wealth in the growth of stock. . . This grass can be cut without killing the roots, and to this there cannot be urged any objection. . . Unless something is done, the grama grass will soon be a thing of the past in Arizona.

The wild hay business declined as changing land conditions made the supply increasingly uncertain. Mesquite, acacias, and other woody shrubs invaded the grasslands, permanently reducing their forage potential. Grasses still grew, but it was only during wet years that enough grew to warrant commercial cutting. Ranchers after the boom period moved increasingly towards their own supply of irrigated crops to supply hay.

In 1881, the San Bernardino Valley was an area of vast potential. Abandoned since the 1830s, the former Mexican land grant ranch of almost 100,000 acres remained in the hands of Ignacio Pérez' descendants. John Slaughter acquired the ranch in 1881 and built two adobe houses for his family and workers. Much of the time he and his family lived in a house in Tombstone, the county seat of Cochise County. He began a notable career as sheriff of Cochise County beginning in 1886. Slaughter, like many other Arizona ranchers, ran into difficulties after drought first struck in 1885 and good rain years remained sporadic for many years afterward. The tax records of his cattle inventory show great variability over the years from 1887 to 1903 from a low of 800 head up to 17,000. In its earliest years, the San Bernardino Ranch suffered from attacks by Apaches, including Geronimo. Cattle thieves also took their toll over the years. Following an earthquake in 1887 that destroyed the two original buildings, Slaughter built a new three-room adobe house, which after a later fire and reconstruction, became a school and then a two-room house. About 1893, construction of a new house, this time a much larger adobe building began. Slaughter continued to add new buildings up to 1915. The ranch complex included a board-and-batten bunkhouse, commissary, icehouse, washhouse, granary, and even an automobile shed. Small buildings scattered across the vast San Bernardino Ranch housed ranch employees with families. Following Slaughter's death in 1922, the ranch continued to operate as a family-held corporation until 1937. In that year, the ranch, which included land in Mexico, was divided at the international border and the American portion purchased by the Williams family.

In the boom economy, speculative cattlemen moved to fill every corner of the territory, taking advantage of any open range available. One of these corners was the desert piedmont range north and west of Wickenburg. As early as 1863, J.R. Frink located a ranch on Martinez Creek, a small stream that feeds into the Hassayampa just north of Wickenburg. Frink stayed in the area for many years and his Martinez Ranch had about 1,200 head in 1885. Improvements at the Martinez included a ranch house, barn, stable, sheds, and a corral. A small V-flume for carrying water to a reservoir below the house provided water for the stock, a garden, a small peach orchard, and a field of alfalfa. General Crook and some associates also got involved in ranching in the area, starting a ranch adjacent to the Martinez on the west.

To take advantage of the boom in the Wickenburg area, the Walnut Grove Water Storage Company built a dam on the upper Hassayampa River. Even before it was completed in 1888, promoters advertised the benefits of this new water source. Pamphlets spread the word of the good forage available. With reliable water and pipelines to carry it over the desert, ranchers would be able to greatly expand their herds. So successful was the dam that the Company planned another dam fourteen miles downstream of the first.

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The winter of 1889-90 was unusually wet in this part of the territory and soon the Walnut Grove Dam reservoir was filled beyond capacity. Complicating matters, the wooden gates of the spillway swelled and jammed. Floating debris further filled the spillway so that there was nothing anyone could do to open them. Finally, on February 22, 1890, the dam collapsed and a huge wall of water raced downstream. At the construction site of the second dam was a camp of Chinese and Mexican laborers. Both the camp and the dam were washed away. At least eighty-four people were known to have died in this disaster. Investigators later determined the original dam suffered from a faulty design and poor construction. Those who died were victims of a speculative frenzy that attempted to take advantage of the booming economy and cared little about any long-term impacts.

The boom of the 1880s created a mentality that refused to recognize any negativity. In his annual report of 1883, Territorial Governor F.A. Tritttle claimed that Arizona Territory had 34 million acres of grasslands—enough to carry 7,680,000 cattle. In fact, Arizona could never graze anywhere near that number. When the number of cattle went significantly over one million (and there was a significant number of sheep in addition) the conditions for a rangeland disaster were at hand. The boom period began to falter in 1885 when the first drought struck. When low rainfall combined with a record number of cattle on the range, the land simply could not support the size of the herds. In addition, the effect of the bust was nationwide, with cattle prices falling from \$30 to \$35 per head to \$10 or less in 1885. What fattened cattle there were in Arizona were shipped off to get what price they could. Still, losses were exceedingly high. There was hope in the irrigated fields of the Salt River Valley, but with freight rates high, some alfalfa was left rotting in the field. The Southern Pacific had recently completed a branch from Maricopa to Phoenix and many ranchers thought they could ship their cattle there for fattening.

*Northern Arizona*

Unlike the Southern Pacific, the Atlantic & Pacific took advantage of a massive federal land grant to subsidize its construction. Since the railroad was willing to sell land in large quantities at prices far below the cost of the public domain, eastern investors believed they could make a fortune by creating tremendous ranching operations. This economic factor alone accounts for a major difference between the northern Arizona cattle industry and the southern. In the south, although there were many large operations, there never developed anything on the scale of the three big companies that eventually arose to try their luck on the northern range.

The first of these cattle companies was the Arizona Cattle Company, organized in 1883 by eastern capitalists in association with John Young. More often referred to as the A1 Bar after its brand, the Arizona Cattle Company purchased 132,000 acres from the railroad at fifty cents an acre. This railroad land was in alternate sections with public domain in between. Since there were no fences, this effectively doubled the potential grazing area. The A1 Bar set up its headquarters at Young's fort, renamed Ft. Rickerson. The company's initial investment in land, livestock, and improvements was said to be over \$1 million. At Ft. Rickerson, improvements included a new log bunkhouse, commissary, a large stables structure, and an office.

This great investment made the A1 an instant cattle empire, dwarfing the operations of most other stockmen. Nor did it stop with this initial investment. Under the aggressive management of B.B. Bullwinkle, the company beginning in 1886 embarked on a number of water improvement projects. These ranged from simply piping water from springs to troughs to the construction of a large dam at LeRoux Spring, near Ft. Rickerson. The A1 Bar also extended its range. One such extension was the Cedar Ranch on the Coconino Plateau, which became the A1's best-known winter camp. Scrub cattle were of little value on the national market and the A1 Bar invested in improved stock. In 1885 it bought sixty Angus and Galloway bulls and the next year acquired eighty two-year-old Shorthorns from Kentucky.

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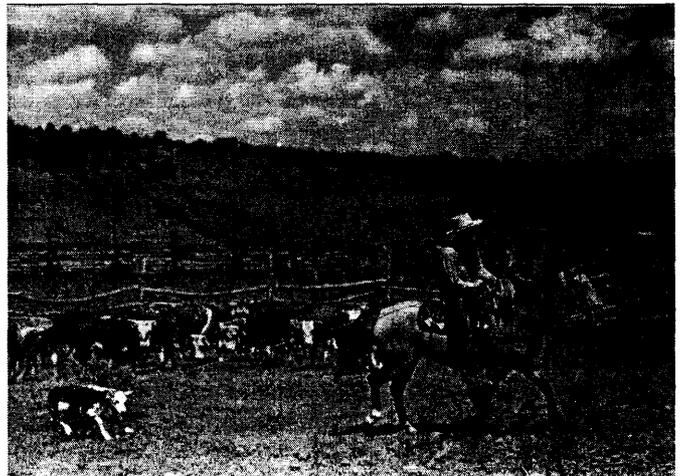
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The year 1887 saw the Company earn a profit of only \$36,000, a small return on its very large investment. The following years saw no improvement. Drought and a declining market in the 1890s convinced the owners to liquidate the Company in 1899. In the great sell-off of the A1's assets in the summer of 1899, over 10,000 head of cattle were shipped out of Flagstaff, a record for the largest shipment of cattle at one time.

Shortly after the founding of the A1 ranch, eastern cattle speculators formed the Aztec Land and Cattle Company in 1884. Like the A1 Bar, this company became more widely known for its brand—the Hashknife. Also like the A1 Bar, the Hashknife began as an instant cattle empire. The Aztec Land and Cattle Company purchased a million acres of land from the Atlantic & Pacific Railroad for \$500,000 and quickly placed about 33,000 head of cattle. The Hashknife was the largest ranch in Arizona, some 3,125 square miles, if one counts the public domain it grazed on. At its high point, up to 60,000 head of cattle grazed on this vast expanse from Mormon Lake to Holbrook. A great deal of cowboy lore came out of the Hashknife, but as an economic enterprise it was no more successful than the A1 Bar. The combination of high overhead and the problems of the 1890s brought the Hashknife down at the turn of the century.

The great cattle outfits of nineteenth century northern Arizona appeared to be economic failures. In an unstable market and with random climatic factors always threatening, no management appeared to be able to effectively control costs and maintain profitability. Rustling may have played an important role in increasing costs for these firms. More than one small ranch was said to have started from cattle stolen from the big outfits. Small ranches had a distinct advantage in terms of the owner's ability to watch over all aspects of their business. Small-time ranchers also did not have to worry about employing large numbers of cowboys to do the work.

But large-scale ranching could indeed prove viable when under the direction of competent managers. Five brothers from Cincinnati, Ohio by the name of Babbitt began in 1886 to put together their own cattle empire, one that would prosper and grow well into the twentieth century. Successful businessmen in Ohio, the Babbitts decided to seek their fortune by moving west and entering the cattle business. They began modestly by leasing 160 acres on the east slope of the San Francisco Mountains near Lockett Meadow. Their first herd numbered only 865 head. They called the ranch the CO Bar after their former hometown. Unlike the A1 Bar or the Hashknife, the CO Bar expanded slowly over the next few years. The first major addition was the purchase of the Clark Valley southwest of Lake Mary. When Navajos killed Mormon rancher Lot Smith in 1892, the Babbitts bought his Circle S ranch and dairy near Mormon Lake giving them a greatly expanded rangeland. By the time the A1 Bar and the Hashknife collapsed, the Babbitts had a profitable operation ready to pick up their pieces and create a new gigantic ranch. They aggressively bought up assets from the two former cattle empires until their range extended from Ash Fork to Holbrook and encompassed almost two million acres.



Cowboy with doggie. Arizona State Library, Archives and Public Records, History and Archives Division.

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The Babbitts began with no cattle experience and successfully built the greatest cattle company in Arizona history. Several factors contributed to their success. One was that the Babbitts were diversified and pursued several business interests in addition to cattle. Profits from other endeavors could be channeled into investments in cattle. By beginning small, the CO Bar did not have to immediately build expensive facilities for ranch hands or for range improvements. These could be purchased or built later as resources allowed. They also pursued a particular strategy when expanding their range. Rather than buying out other ranchers, they often bought controlling interests in other ranches and left the minor shareholders in charge of the operation. They avoided overstretching their managerial resources and also provided an incentive to the other operators to work efficiently. In 1904 they bought the controlling interest in the Apache Maid Ranch southeast of Flagstaff. Their strategy also allowed the Babbitts to invest in ranching in other parts of the country as well, including a ranch east of Los Angeles and in Kansas. Their business acumen allowed the Babbitt brothers to create the most important ranching operation in northern Arizona, and arguably the greatest ranch in all of Arizona.

Most ranches in northern Arizona were nothing like the great ranching empires represented by the A1, Hashbar, and CO Bar. The great majority of ranches were small and provided subsistence, but no great wealth for their owners. An example of this more typical operation is the Fern Mountain Ranch near Flagstaff. The founders of Fern Mountain Ranch were August Dillman Freudenberger and his wife Lena. Freudenberger (who dropped his last name during World War I and became simply Gus Dillman) settled in Flagstaff in the 1880s where for a time he owned a brewery. In about 1890 he decided to go into ranching, acquiring some land on the west slopes of the San Francisco Peaks overlooking Hart Prairie and facing Humphreys Peak. The land was forested with a variety of pine, aspen, fir, and spruce. The meadow at Hart Prairie had once been claimed by sheepman Frank Hart back in 1877. Hart had started building a log cabin but winter arrived before he could complete it, forcing him to leave the area. Hart never returned and the area was abandoned until the Freudenbergers arrived. They completed Hart's cabin and added several of their own to create a ranch complex. The work was difficult and only marginally successful. Freudenberger started a potato growing business with several other German families in the area, but it was his skills as a blacksmith that helped carry them through. Lena was left at the ranch to tend their few cows and the garden. Their lives began to improve after 1892 when the Santa Fe Railroad began operating a tri-weekly stage route for tourists from Flagstaff to the Grand Canyon. Fern Mountain Ranch became one of three relay stations where the stages could change horses. As many as 900 people per year passed through the ranch and many were greeted by Lena with sandwiches and cold buttermilk. Lena even had the pleasure to serve Theodore Roosevelt. The opening of a rail line to the Grand Canyon in 1901 put an end to the stage line and Fern Mountain Ranch returned to its former obscure status.<sup>54</sup>

*The Arizona Strip*

In the Arizona Strip, the first major livestock boom occurred in the early 1890s. Cattle and sheep moved in from Utah in numbers never seen before in this part of the territory. The boom was even shorter-lived than in the rest of Arizona, for an extended drought from 1896 to 1900 caused large losses in livestock. This was the first indication that although the Strip contained abundant and nutritious grasses, its environment was particularly delicate and could not permanently support large numbers of livestock. It was a lesson that would have to be taught again in the twentieth century before a rationalized system of limited grazing was accepted there.

<sup>54</sup> Marjorie Wilson, "Fern Mountain Ranch National Register of Historic Places Inventory-Nomination Form," 1977, Section 8, page 1. Dr. Harold Colton, founder of the Museum of Northern Arizona, bought the property in 1928 and sold it in 1932 to his sister and her husband, Mr. and Mrs. Robert T. Wilson. It was they who built a large lodge on the property and also began raising Arabian horses. The ranch was later given to their son, Richard, as a wedding present. It was Dick Wilson who discovered a botanical rarity on the property—a stand of Bebb's willows. Wilson donated 240 acres of the property to the Nature Conservancy which has maintained the buildings for its educational programs.

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The Strip attracted little permanent population and many stockmen who operated there were based in the communities of southern Utah. The largest ranchers, those running livestock by the thousands, included Smoots, Ballard, and Foremaster from St. George; Woolley, Lamb, and Riggs from Kanab; Carrol, Bowers, and Esplin from Orderville; and Bullock and Jones from Cedar City. Preston Nutter's outfit, however, remained dominant.

Pipe Spring remained an important center of Arizona Strip cattle raising from the time it left church hands in the 1890s to 1923 when it became a National Monument. It had both one of the most reliable sources of permanent water in the area and improvements such as corrals. The old fort and its surrounding acreage changed hands four times before becoming federal property. Its owners were Benjamin F. Saunders (1895), Bullock and Jones (1895-1897), A.D. Findley's Pipe Spring Cattle Company (1897-1908), and finally, Jonathen Heaton & Sons' Pipe Spring Land & Livestock Company (1908-1923). It was while under the ownership of the Heaton's that Pipe Spring—after recovering from the drought of the 1890s—saw its heyday as a cattle ranch. Activities there revolved around the semi-annual roundups. In the spring, newborn calves were gathered and branded while in the fall, steers were separated from the herd to be driven to the railroad at Lund, Utah.

*The Changing Terrain*

While there had been many relatively dry years from the 1860s through the 1880s, the great drought of the 1890s was particularly tragic and had a significant effect on the landscape. The number of cattle as well as other forms of livestock increased to record highs by 1890. Significantly, those numbers were also more concentrated in particular areas of the territory than in the later twentieth century. Many ranchers well understood that they were grazing beyond the land's capacity to recover. When overgrazing combined with drought the result was not only massive loss of livestock and financial ruin for many, but also change in the natural flora of the desert grazing lands.

Early descriptions of southeastern Arizona make it quite clear that the region was far more of a grassland than it is today. The decline of tall grasses and the increasing dominance of woody plants like mesquite, acadi, burroweed, and snakeweed is a direct result of human activities like fire suppression, wild hay harvesting, and livestock grazing. Natural fires act as a suppressant for these types of flora and favor quick growing plants like grasses whose primary energy storage is in their roots. Also, many streambeds that are dry today had much greater and regular flows of water and were surrounded by galeria forests of willow and cottonwoods. Large stands of mesquite and sacaton spread over large areas of bottomland. The greater abundance of water is evident from the many accounts of malaria that significantly affected the location of military posts.

While fire suppression, haying, and grazing placed increasing pressure on native grasses, new species of grass, more adaptable to new conditions, were introduced. Short species that spread by runners were increasingly favored over grasses that reproduced primarily by seed. Streambeds were often indefinitely defined, changing course easily across wide valleys. The trampling of cattle and the change in flora greatly increased the rate of erosion and caused severe gullying. This increased the damage due to intermittent flooding and contributed to the fall of many stream flows to below the surface. The arroyos that so characterize the deserts of southeastern Arizona today are, to a large degree, the result of human land use. Cienega Creek, near Pantano and home range of the Empire Ranch, is now dominated by mesquite. Edward L. Vail in 1880 described the area as a succession of meadows thickly covered with sacaton and salt grass. Mesquite then was limited to the gulches and checked erosion. The change was becoming apparent in the 1890s. Ten years after Governor Trittle's optimistic

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estimate that Arizona could support over seven million cattle, the governor's report of 1893 mentioned, "In nearly all districts, owing to overstocking, many weeds have taken the place of the best grasses."<sup>55</sup>

In 1901, D.A. Griffiths, chief botanist for the Arizona Experiment Station in Tucson, began a study of forage conditions in southern Arizona. Even after cattle numbers had been greatly reduced over the 1890s, the land still showed the effects of overgrazing. He characterized the southern Arizona rangeland as more degraded than any other he had seen in the western United States. And that was not just his opinion; Griffiths questioned many of the old-time stockmen and found that they agreed that the range was severely damaged and that cattle were the primary agents. Henry Hooker recalled that range conditions were "fully double" their current capacity. C.H. Bayless, who owned a large ranch near Oracle recalled that in the 1880s "ten animals were kept in good condition where one barely exists now. However, those ten animals were then rapidly destroying the vegetation, not making proper use of it." Hooker gave this extended description of the changed terrain:

The San Pedro Valley in 1870 had an abundance of willow, cottonwood, sycamore, and mesquite timber; also large beds of sacaton and grama grasses, sagebrush, and underbrush of many kinds. The river bed was shallow and grassy and its banks were beautiful with luxuriant growth of vegetation. Now the river is deep and its banks are washed out, the trees and underbrush are gone, the sacaton has been cut out by the plow and grub hoe, the mesa has been grazed by thousands of horses and cattle, and the valley has been farmed. Cattle and horses going to and from feed and water have made many trails or paths to the mountains. Browse on the hillsides has been eaten off. Fire has destroyed much of the shrubbery as well as the grass, giving the winds and rain full sweep to carry away the earth loosened by the feet of the animals. In this way many waterways have been cut from the hills to the river bed. There is now little or nothing to stop the great currents of water reaching the river bed with such force as to cut large channels and destroy much of the land under cultivation, leaving the river from 10 to 40 feet below its former banks. Thus it has caused much expense in brining the water to the cultivated lands, and necessitated much labor to dam up the channel and keep the irrigated ditches in repair.<sup>56</sup>

Bayless noted the increased gulying:

About twelve years ago the San Pedro Valley consisted of a narrow strip of subirrigated and very fertile lands. Beaver dams checked the flow of water and prevented the cutting of a channel. Trappers exterminated the beavers and less grass on the hillsides permitted greater erosion, so that within four or five years a channel varying in depth from 3 to 20 feet was cut almost the whole length of the river. Every year freshets are carrying away new portions of the bottom lands. At present this valley is a sandy waste from bluff to bluff, while the few fields remaining are protected from the river at large and continuous expense. Thus, in addition to curtailing the area of good land, the deep channel has drained the bottoms, leaving the native grass no chance to recover from the effects of close pasturing.

On the question of forage conditions, Bayless added:

Of the rich grama grasses that originally covered the country so little now remains that no account can be taken of them. In some parts of the foothills alfilaria furnishes limited but excellent pasture during the

<sup>55</sup> Robert D. Baker, Robert S. Maxwell, Victor H. Treat, and Henry C. Dethloff. *Timeless Heritage: A History of the Forest Service in the Southwest*. (College Station, Texas: Intaglio, Inc., 1988). 91.

<sup>56</sup> Conrad Joseph Bahre. *A Legacy of Change: Historic Human Impact on Vegetation of the Arizona Borderlands*. (Tucson: University of Arizona Press, 1991). 109-13.

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spring and early summer. Where stock water is far removed some remnants of perennial grasses can be found. Grasses that grow only from seed sprouted by summer rains are small and transitory value.

As to the cause of these environmental changes, Hooker believed the cause was due "principally to overstocking. In times of drought event the roots are eaten and destroyed by cattle, while if not fed down or eaten out the roots would grow again with winter moisture." At the height of the boom, Hooker estimated there were 50,000 cattle at the head of Sulphur Springs Valley and the valley of the Aravaipa. By 1900, he declared there was no more than half that number, and those doing poorly. Bayless agreed:

The present unproductive condition are due entirely to overstocking. . . Droughts are not more frequent more than in the past, but mother earth has been stripped of all grass covering. The very roots have been trampled out by the hungry herds constantly wandering to and fro in search of enough food. The bare surface of the ground affords no resistance to the rain that falls upon it and the precious water rushes away in destructive volumes, bearing with it all the lighter and richer particules [sic] of soil. That the sand and rocks left behind are able to support even the scantiest growth of pant life is a remarkable tribute to our marvelous climate. Vegetation does not thrive as it once did, not because of drought, but because the seed is gone, the roots are gone, and the soil is gone. This is all the direct result of overstocking and can not be prevented on our open range where the land is not subject to private control.<sup>57</sup>

Bayless' last point is significant. An important part of the problem was the nature of land ownership. For land in the public domain, a rancher had no long-term interest in maintaining its productivity. Where land could be entered at any time by homesteaders, miners, or other ranchers, it was actually in the rancher's short-term interest to take as much from the land as he could before someone else came along. The result was a landscape mined of its forage rather than conserved as a permanent resource. Bayless understood this economic imperative and its legacy:

Twelve years ago 40,000 cattle grew fat along a portion of the San Pedro Valley where not 3,000 can now find sufficient forage for proper growth and development. If instead of 40,000 head 10,000 had been kept on this range, it would in all probability be furnishing good pasture for the same number today. Very few of these cattle were sold or removed from the range. They were simply left there until the pasture was destroyed and the stock then perished by starvation.

After 1893 the number of cattle declined, but overgrazing remained a permanent problem. The census recorded a high of 927,880 head of cattle in 1890. The actual number was surely well over one million. For the period 1900 to 1920, the average number of cattle was 796,494 head. Sheep, however, more than made up for this decline, rising from 515,136 in 1890 to 1,226,733 in 1920. Sheep were more prominent in northern Arizona. Overall, the livestock industry, which was somewhat geographically concentrated in the pioneer and boom periods, spread more evenly across Arizona, mitigating the impact of the increasing numbers. The legacy of a permanently changed landscape remains an important problem today and is central to political debates over the role of livestock in the economic future of Arizona.

*Estimating the Cattle Inventory*

Several times we have referred to the number of cattle in Arizona based on information gathered in the U.S. census. Care should be taken in using these numbers literally. In the first place, since the agricultural census was

<sup>57</sup> Ibid., 112.

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taken only decennially from 1870 to 1920 we have only the roughest outline of the trend in cattle numbers. The number of cattle in the territory rose up to 1890, then fell in 1900, and did not change much in 1910 (824,929) or 1920 (821,918). What occurred between census counts is impossible to determine from this source. For example, we have no census information on the impact of World War I on the cattle industry, a potentially significant event. The situation improves somewhat beginning in 1925 when the Census Bureau began taking a special mid-decade agricultural census. The year of this special census was shifted again beginning in 1949.

Another source of data on Arizona's cattle inventory is county tax records. Tax records are valuable in that they provide a yearly count of livestock and, since they are at the county level, provide some geographically more specific information. The disadvantage is that stockmen had an incentive to hide the true number of cattle they held. County assessors could not go out on the range and actually count the number of cattle and ranchers themselves could only estimate how many head they owned at any moment. Assessors could calculate the inventory in a couple of ways. If they had good numbers on the annual calf drop, they could multiply the number of calves branded each year by three to get the number of grown stock. This assumed a calf crop of between thirty to forty percent. A second method was to multiply the number of steers sold by six, or even eight to get the total number. A stockman wanting to minimize his tax burden had an incentive to understate his sales and brandings.

In 1917, the United States Geological Survey undertook a major study of the livestock industry and grazing conditions in Arizona. The information was needed to administer the Stock-Raising Homestead Act which called for designating land suitable for stock raising. The report, published in 1918 is a wonderful snapshot of the livestock business in Arizona. In addition to the report are several large maps showing deeded and leased lands, irrigated land, Indian land, cattle and sheep companies, and extensive affidavits executed by cattle owners against the creation of a stock driveway from sheep. The researcher, Eugene C. LaRue, also compiled numbers for livestock from each county and also for each National Forest for the years 1883 through 1917.

The tax records provide significantly more detail on the trend in cattle numbers. They more precisely date the high point of the cattle boom as 1893. This corresponds to the beginning of the disastrous drought that fundamentally altered the character of the Arizona cattle industry. These records also show a much larger drop in numbers before the industry began to recover, from 839,061 in 1893 to 381,861 in 1900. Tax records also indicated the estimated value of cattle in Arizona. This data provides a much different perspective than that revealed just by the cattle inventory. During the bust of the 1890s, the taxable value of cattle declined almost in half from \$12,769,572 in 1893 to \$6,591,343 in 1900. What burden this drop placed on tax revenues and government budgets has not been determined.

While the period from 1910 to 1920 is invisible to the census records, tax records give some indication of the influence of the world situation. Beginning in 1910 the cattle inventory started a strong upward trend, from 651,000 to 945,000 head in 1917, or 45 percent. The value of cattle rose even faster in response to a very strong market and high prices. From \$13,156,800 in 1910, the taxable value jumped almost 200 percent to \$39,112,200 in 1917. The crisis in Europe was apparently very good to Arizona cattlemen.

The taxable value of cattle is only a weak proxy for estimating market value, but as it is directly related to taxation it is a number of real significance. Certainly tax records severely underestimate both the number and value of cattle. Census numbers are consistently higher than tax records. However, the basic trend lines are similar.

As part of his study, LaRue talked to many cattlemen across the state and many told him confidentially how many cattle they believed they had. LaRue calculated the percentage the tax record underestimate and came up with his own estimate of the number of cattle by county. He calculated an adjusted total of 1,434,000 head of cattle or about 57 percent more than what was on the tax rolls. The degree of accuracy of this estimate is impossible to

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determine, but it is reasonable to presume that the actual number of cattle was well above any official count. Neither should one presume that the estimated margin of error in LaRue's calculation can be applied to other years.

### The Foundation of the Modern Cattle Industry

The disastrous drought of 1891-93 forced ranchers wishing to stay in the business to reorganize and take a different approach to cattle raising. In the 1880s, ranchers tried to raise and feed the largest herds for sale to the beef markets of California and other parts of the nation. In the new cattle business, Arizona ranchers increasingly specialized in breeding superior beef animals and then shipping them to other states for fattening. On the range, a system of paying grazing fees for use of the public domain institutionalized the stockman's right to use the land. With his long-term use of the land assured, ranchers could make capital improvements by building water tanks and fences. By limiting the number of cattle and investing in the land, ranchers ultimately created the conditions for a gradual expansion of their herds in the decades ahead. The open range gave way to stock raising as a modern business enterprise.



Ranching in Sulphur Springs Valley. Arizona State Library, Archives and Public Records, History and Archives Division.

The cattle itself underwent more systematic improvement. In the early pioneer days, Arizona cattle derived from Mexican and Texan *criollos*. The Texas Longhorn was an Andalusian-derived *criollo* with a small influence of pre-register American (i.e. British-derived) cattle. These cattle were well suited to the harsh conditions of the frontier range. They were also adequate for the restricted market of military posts and Indian agencies. However, the larger market opened by the transcontinental railroads was now demanding a higher grade of beef. This was the result of the increasing dominance of recognized cattle breeds. Selective breeding of cattle began in England in the late eighteenth century. Different breeders bred towards different goals, some for heavier bodies and more meat, and others to greater milk production. This breeding spread to Europe and became formalized in the creation of breed societies and recorded herd books. By the early nineteenth century, there were a number of competing "breeds" of cattle such as Shorthorns, Herefords, and Angus in the beef category, and Jersey and Ayrshire in the dairy.<sup>58</sup>

<sup>58</sup> Rouse, 91-3. The term "Native American" is used to describe cattle of the English colonies deriving from various pre-breed English and other northern European cattle. Pioneers trailed these cattle into Louisiana and Texas where they mixed with the Spanish *criollo*. The Texas Longhorn reflected this increased genetic background with a greater variety of color. Rouse believes that the early Texas trail drives were mostly steers, bulls, and old cows, which left cow-dominated herds in Texas to spread to places like Arizona. This would allow the introduction of a few registered bulls and controlled breeding to removed almost all of the *criollo* influence within a few generations. Modern attempts to preserve the longhorns cannot but alter them. Horn size, for example, is especially selected for, making the animal fit its name, but leaving it with little relationship to its distant Andalusian ancestors.

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The Shorthorn gained early favor. The first Shorthorns to establish a recorded herd in the U.S. arrived from England in 1817, but it was only after the Civil War that systematic replacement of non-breed types began.<sup>59</sup> The Hereford soon followed and eventually dominated. Building on the precedent set by more thoughtful ranchers like Henry Hooker, ranchers throughout Arizona Territory slowly replaced their herds with Shorthorns and Herefords. The governor's report of 1889 claimed that the territory's herds were greatly improved. Only along the Mexican border and the Indian reservations did the old cattle find a continuing market. Cattle improvements only increased the need to invest in land improvements since these breeds could not survive as well on their own. The Hereford became, and remains, the dominant breed in Arizona. Of all the breed cattle, the Hereford proved the most adaptable to range conditions. While it probably could not survive in a wild state as its *criollo* cousins could, Herefords have long remained the favorite of western ranchers—a seemingly perfect balance of hardiness and marketability.

The business concentrated on marginal improvements to secure its niche position in the national cattle market. Ranchers found that by spaying cows the animals fattened quicker and the herds were quickly culled. They found that by retaining yearlings, they reduced the future calf crop and the size of the breeding herd that could be kept. As for the capacity of the range, the definition of carrying capacity changed to what could be carried through the poorest season—an important change in emphasis.

*The Public Domain*

The romantic image of the cowboy is a portrait of a free man on a horse driving his herd across the open range. The image, of course, has little connection with the reality of the cattle business in any era. In the Spanish and Mexican eras, land grants defined land ownership and were used to promote cattle raising and settlement. Many of these grants were later confirmed in the American period. Even in the frontier American period, ownership of waterholes and creeks was the crucial element in establishing a permanent ranch. Who could graze on the open range, that is, on the unfenced public domain, was largely determined by who controlled the nearby water. Ranchers could acquire land through a variety of methods. This section will explore the area of federal land law and establish the primary legal framework in which ranches in Arizona were created and operated. We will then examine two federal agencies—the Forest Service and the Bureau of Land Management—that oversee grazing use in much of the public domain.

The great expanse of land that we call the public domain is what remains of the 1.8 billion acres of land acquired by the United States in the eighteenth and nineteenth centuries. The first major acquisition came as several of the newly independent states ceded their claims to trans-Appalachian lands to the confederation and later the federal government. The lands were seen to provide a long-term source of revenue for the government to help pay its Revolutionary War debts. Land was also to be given to war veterans in compensation for their service. From the very beginning, the public domain was seen only as something to be disposed of. Through the first half of the nineteenth century—up to the acquisition of the future state of Arizona—debate revolved around the most advantageous method of disposing of land. The two primary competing views were between those who wanted to maximize revenue and those who wanted to promote settlement and development. Roughly speaking, easterners supported the former viewpoint while westerners supported the latter.<sup>60</sup>

<sup>59</sup> Ibid., 288-9.

<sup>60</sup> James Muhn and Hanson R. Stuart. *Opportunity and Challenge: The Story of BLM*. (Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management, 1988), 2.

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The Louisiana Purchase of 1803, the purchase of Florida from Spain in 1819, the British cessation of Oregon below the 19<sup>th</sup> Parallel, and then the acquisition of the Southwest in the Treaty of Guadalupe Hidalgo (1848) and the Gadsden Purchase (1853) rounded out most of the territory of the lower forty-eight states. In the early years, when the need for revenue was critical to the survival of the young federal government, the land laws tended to support the idea of orderly identification of lands and sale both in large and small plots. The landmark Land Ordinance of 1785 established the system of survey of public land into six-mile square townships and the further division of a township into thirty-six one-square-mile sections. Of the first townships surveyed in the Old Northwest—today's Midwest—one-seventh were to be reserved to satisfy military land warrants while the rest were to be auctioned off at no less than one dollar per acre. One section was to be reserved to provide revenue for public schools. The next major change in public land law came with the Land Law of 1796 that allowed the purchase of land for two dollars per acre in unlimited quantity, but also allowed the purchase of quarter sections and provided limited credit terms. Disappointment with this law led to the passage of the Land Law of 1800 that allowed more liberal credit and established local land offices to make sale easier.<sup>61</sup>

With the federal government handling thousands of land claims, Congress in 1812 centralized responsibility “to superintend, execute, and perform all such acts and things touching or respecting the public lands of the United States” to a new General Land Office (GLO). Land sales rose and fell over the next few decades in response to the general economic conditions of the county. There were booms immediately after the end of the War of 1812 followed by an economic depression in 1819, with a corresponding lag in land sales. Congress responded in 1820 by eliminating the credit aspects of previous land laws that, it believed, promoted speculation, and demanded immediate payment for land. At the same time it also lowered the price of land to \$1.25 an acre with tracts as small as eighty acres. Another boom rose up in the mid-1830s. So busy was the GLO that the phrase “doing a land-office business” arose. This boom ended quickly after President Jackson moved to restrict speculation by demanding payments in specie (gold and silver) for land.<sup>62</sup>

One important issue that arose and that affected Arizona in particular was how to treat preexisting land claims. The Treaty of Guadalupe Hidalgo and the Gadsden Purchase guaranteed the property rights vested in legitimate land grants from the former sovereignties. In Arizona the issue revolved around Spanish and Mexican land grants. Poor documentation and fraudulent claims complicated the situation so that many years passed before these claims were settled. Complicating the situation even more were the pioneers moving ahead of the slower moving surveyors and establishing farms and ranches. Legally, these people were squatters with no legal rights to the land. Occasionally, the federal government took action to remove squatters, but these people were not without their sympathizers and supporters, including powerful men in Congress like Senator Thomas Hart Benton of Missouri. After all, they claimed, they were only fulfilling the government's expressed desire to fill up the frontier as rapidly as possible. Several times in the first half of the nineteenth century Congress gave squatters prior claim, or the right of preemption, to public land and the base price. These laws expressed the declining concern over revenues from land sales and the increasing desire to promote development.

The first major land law enacted after Arizona became part of the United States was the Graduation Law of 1854. Supported by Senator Benton, this law lowered the price of land that had gone for years without a buyer. Under this law, land could be bought for as little as twelve and a half cents an acre. Land sales boomed again after graduated prices began, though as was often the case, speculators and fraudulent entries plagued the process.<sup>63</sup>

<sup>61</sup> Ibid., 4-8.  
<sup>62</sup> Ibid., 9-11.  
<sup>63</sup> Ibid., 13.

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The most serious debate in the 1850s revolved around the proposal to give away land free. Its supporters espoused the idea of the yeoman farmer and claimed that a homestead law would provide a safety valve for poorly paid urban workers. The homestead proposal became central to those arguing in favor of “free soil.” The issue became entangled in the larger debate over slavery and the southern states vetoed homestead proposals as threats to the further spread of the slave system. The newly formed Republican Party backed a homestead act and after Lincoln’s election in 1860 and the secession of the southern states, Congress easily passed the Homestead Act of 1862. Under this act, any head of household, widow, or single person over twenty-one years of age could apply for 160 acres of the public domain. The land would become private—be patented—after the claimant worked the land for five years.<sup>64</sup>

The Homestead Act of 1862 promised great things for American democracy. The ideas it embodied fulfilled the vision of Thomas Jefferson and relieved many people’s growing fears of an increasingly urban and industrial lifestyle in the East. The reality of implementation, however, tarnished these dreams. In the first place, fraud and speculation continued with no more than minimal oversight or even concern from Congress. In Arizona, cash-poor ranchers used the Homestead Act to claim springs and riversides, knowing that to control water in the desert was also to control the thousands of acres beyond. More affluent ranchers could get their employees to claim land and then purchase it cheaply after it was patented. This method contributed greatly to the amalgamation of large ranches.

The Civil War Republican Congress passed a number of other significant land laws. The Morrill Act of 1862 provided land to each state to fund agricultural and mechanical arts schools. Of even greater relevance to Arizona was the practice of giving tremendous grants of land to spur the construction of transcontinental railroads. The Central Pacific and Union Pacific Railroads received the first such grants. In Arizona a major grant went to the Atlantic & Pacific Railroad, but not the Southern Pacific. This land later became part of the Santa Fe Railroad. In theory, these railroads would sell their land to promote settlement and freight traffic along their lines.<sup>65</sup>

Land laws passed in the 1870s and later tried to fine-tune the law with the great variety of land and economic conditions in the West. Many people believed in their ability to alter the climate in which they settled. The idea that “rain followed the plow” gained widespread adherence. Years of good rain encouraged this belief and spread settlement well beyond the natural limits of wise agricultural use. The Timber Culture Law of 1873 offered 160 acres free to anyone planting trees on land otherwise without timber. Recognizing that in many arid parts of the West land had no potential for agricultural, timber, or mining uses, Congress passed the Desert Land Law of 1877 that offered full sections (640 acres). While the Desert Land Law did not require actual residence on the land, it did require irrigation be applied, something many found difficult or impossible. Fraud flourished under both of these acts.<sup>66</sup> One infamous trick was for a claimant to pour a barrel of water on his land then pay a witness to testify that they had seen it irrigated. Response to the Desert Land Act was quick in Arizona. The Surveyor-General of the territory reported that nearly a hundred claims were filed within the first few months. In southern Arizona, some of the early claimants included prominent men like A.P.K. Safford, Thomas and Samuel Hughes, E. N. Fish, Franklin and Don A. Sanford, and Sabino Otero.

Open range had limited appeal even to stockmen. Many put up fences on the public domain to control their own and other’s cattle. This raised the rancor of many homesteaders who did not like public lands being treated as private ranges. In February 1885, Congress responded to homesteaders’ complaints by declaring it unlawful to

<sup>64</sup> Ibid., 14-6.  
<sup>65</sup> Ibid., 20.  
<sup>66</sup> Ibid., 22-3.

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enclose any public lands. President Cleveland followed this with an executive order to remove all fences on the public domain. This federal policy did not change until the 1930s.

For years Congress ignored the many recommendations made by heads of the General Land Office and by special commissions on the need to reform the land laws to reduce fraud. Congress finally acted in 1891 by passing the General Public Lands Reform Act (also called the General Revision Act). Under this law individuals could not acquire more than 320 acres of public land, auctions of land under the 1820 act were ended, the Timber Culture and Preemption acts repealed (with some exceptions), and Desert Land entries reduced to 320 acres. This act also recognized a new force in the public land debate. With so many ways to acquire public land it was no surprise to find the public domain greatly diminishing at the end of the century. Seeing how many of the forests of the eastern states were stripped away, many people began to worry about the rapid depletion of western forests. A new ethic of conservation developed that challenged the age-old idea that the public domain must be given over to private hands for the country to develop. Conservationists believed that the permanent prosperity of the nation depended on the wise and controlled use of its resources. Forests, for example, or rangeland could grow timber and grass forever if managed in a way that did not encourage immediate short-term profits. The Act of 1891 contained a provision to set aside public forest in timber reserves. For the first time, the idea that some land should permanently reside in the public domain found a voice in the law.<sup>67</sup>

While Presidents Harrison and McKinley set aside some reserves, conservationists found their true hero in Theodore Roosevelt for whom conservation was a crusade. He wrote, "If we of this generation destroy the resources from which our children would otherwise derive their livelihood, we reduce the capacity of our land to support a population, and so either degrade the standard of living or deprive the coming generations of their right to life on this continent." Roosevelt's first concern was in desert reclamation, an area of special importance to Arizona. The Carey Land Act of 1894 had offered states and territories up to a million acres if private reclamation efforts could claim land for agriculture. Roosevelt early in his administration pushed through the Reclamation Act of 1902 that authorized the federal government to build irrigation projects. With the guidance of the U.S. Geological Survey, lands valuable for reclamation were to be withdrawn from homestead settlement. Both the Carey Act and the Reclamation Act bowed to the by-now ancient tradition of encouraging small-scale farms; both limited the beneficiaries of federal reclamation to 160-acre farms.<sup>68</sup>

In addition to the General Land Office, authority over the public domain now resided in several agencies. The Bureau of Reclamation controlled lands dedicated to irrigation projects. After 1907, the Forest Service managed the increasing number of forest reserves. In 1916, the National Park Service was created to oversee the increasing number of National Parks and Monuments that the President and Congress were setting aside for special use.

While the federal government became increasingly active in public land development and accepted the idea of a permanent public domain, the older homestead ideal did not die. The Reclamation Act maintained a statutory preference for small farmer and the Forest Homestead Act of 1906 again opened agricultural lands within the forest reserves to settlement. Responding again to the needs of the arid West, the Enlarged Homestead Act of 1909 increased to 320 acres the amount of non-irrigable land that could be claimed. In 1912 Congress reduced the time a claimant had to spend on their homestead to receive a patent to three years. These liberalized terms created the last public lands boom. More homestead claims were made after 1900 than before. This boom ended

<sup>67</sup> Ibid., 28-9.  
<sup>68</sup> Ibid., 29-31.

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in 1917 with American entry into World War I. After the war an agricultural depression destroyed many people's hopes of finding a living on a farm. In the 1920s, the old yeoman ideal began to fade away.<sup>69</sup>

In the 1920s there was also simply less good agricultural land left to claim. What remained of the public domain served ranchers more than others. Western ranchers depended on easy access to public lands for their economic survival. But competition became increasingly fierce with newcomers claiming their share of the public bounty. There were two major problems associated with the open range. First, there was no law that prevented any newcomer from grazing on the same land. Shepherders arriving on lands previously used only by cattlemen caused several famous conflicts in the history of the Old West. Many ranchers illegally fenced sections of the public domain to keep out intruders. Second, because they could not protect a long-term interest in the public domain, open range ranchers had every incentive to mine the and for as much forage as they could get. This contributed to overgrazing resulting in erosion and other land damage.

Ranchers divided on the need for new rules on range management. The most progressive understood the lesson of the drought of the 1890s and realized that limits had to be placed on the number of livestock if the industry was to survive and expand. With the support of many ranchers, the Forest Service became the first federal land management agency to institute a system of grazing permits and fees. Others, however, continued to support further privatizing of the public domain. Congress responded to these voices by passing the Stockraising Homestead Act of 1916. This law allowed claims to 640 acres and required only that ranchers settle on the land and make improvements worth \$1.25 an acre. While initially greeted enthusiastically, many claims were held up as the GLO investigated exactly which lands were useful only for grazing. But even a homestead of a full section was insufficient for western ranching. The debate of the 1920s turned increasingly toward the option of grazing leases and fees. President Hoover proposed giving all of the remaining, unappropriated public domain to the states, claiming they could administer it more efficiently. The opposition was overwhelming and quickly buried Hoover's suggestion. Under President Franklin D. Roosevelt, the debate on public land culminated in 1934 in passage of the Taylor Grazing Act. This landmark legislation marked a new era in public land regulation. After Roosevelt withdrew all nonmineral entry of the public domain, the era of homesteading effectively ended.<sup>70</sup>

Meanwhile, the GLO received a new mission and new responsibilities. Instead of simply administering the privatization of public land, the GLO shifted to overseeing range leases, land exchanges, and mineral leases, as well as land sales. In addition it was still responsible for the classification of federal lands. The GLO created a Range Development Service in 1939 to plan and administer range improvements and the Department of the Interior's Division of Investigations became a part of GLO in order to facilitate investigation of illegal land use. World War II had a profound impact on the GLO and the Grazing Service. Despite budget and staff cuts, they tried to do what they could to contribute to the war effort. The Civilian Conservation Corps, the New Deal's program to get the unemployed out of the cities and into the countryside to do useful work, fell victim to wartime budget cuts. The GLO made plans to renew its conservation work after the war. However, it became a target of criticism after proposing grazing fees be increased to fifteen cents per animal unit in 1941. Opposition from ranchers wanting to preserve low fees killed the proposal during the war. The debate raged in Congress with the House of Representatives supporting increased fees and the Senate opposing. The Grazing Service tried to get out from under the controversy in 1946 by not pursuing the fee increase, but supporters in the House responded by severely cutting the Service's budget. The Grazing Service saw its personnel reduced from 250 to 86 and its district offices reduced from sixty to eleven.<sup>71</sup>

<sup>69</sup> Ibid., 34-5.

<sup>70</sup> Ibid., 35-7.

<sup>71</sup> Ibid., 41, 47-8.

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To end the attacks on the Grazing Service and to eliminate duplicate responsibilities, the Truman Administration studied the idea of consolidating the Grazing Service with the GLO. Harold Ickes finally gave his support to the merger in 1946 and President Truman ordered it as part of his Reorganization Plan No. 3 in that year. When Congress did not object to this plan the merger was accomplished and a new agency, the Bureau of Land Management, was created.<sup>72</sup>

In its first years, the new Bureau of Land Management struggled to survive and to establish a viable mission and plan. Internally, there was the business of creating a new organization out of the former GLO and Grazing Service personnel. Former GLO Commissioner Fred W. Johnson became the first Director of the BLM. Unfortunately, the selection of Johnson reflected more a desire to put the Grazing Service's grazing fee debacle behind them than trust in his leadership. Decentralization became the key to BLM's organization. While the Director worked from Washington, much of the real work of the agency would be carried out from regional and district field offices. The major areas of operation revolved around range and timber management, engineering and construction, adjudication, and classification and planning. Arizona became part of Region No. 5, along with New Mexico, Texas, Oklahoma, Arkansas, and Louisiana.<sup>73</sup>

The new BLM did not escape controversy with Congress. Many conservatives disliked the idea of a permanent land management agency and opposed decentralization on the grounds that it would solidify bureaucratic control of public lands. The agency also suffered from an extremely tight budget. Its initial eighty-six personnel had to manage some 150 million acres of grazing land, an impossible task to accomplish effectively. As a stopgap, money from Taylor Grazing Act fees for range improvements were used to pay the salaries of BLM range employees. This, however, made the BLM range managers practically the employees of the ranchers who they were supposed to be regulating.

Secretary of the Interior J.A. Krug, who replaced Ickes, appointed a California rancher, Rex L. Nicholson, to prepare a plan to place BLM on a solid foundation. Nicholson recommended an increase in BLM personnel up to 242 employees and a grazing fees increase from five cents per animal unit to eight cents, an amount calculated not to stir up the ranchers to major opposition. Of the eight-cent fee, two cents were to be dedicated to range improvements and the rest divided between the state and the federal treasury. The federal share paid only seventy percent of the cost of BLM's range administration with the rest coming out of general fund appropriations. Congress approved the outline of the plan, including the grazing fee increase, but failed to appropriate enough funds to cover costs over what the fees could pay for. Nicholson also underestimated the BLM's administrative costs.<sup>74</sup>

The BLM continued as a troubled agency until Secretary Krug appointed a new Director with a mandate to transform the agency. The new Director, Marion Clawson, served from 1948 to 1953. For Clawson, decentralization was the key to effectiveness. He largely succeeded in convincing Congress to go along with his plans and by 1949, the Washington office was responsible only for overall supervision and the development of long-term programs and plans. He reorganized the regions (removing Louisiana and Arkansas from Region No. 5) and the bureaucratic structure in 1950. The regions handled most case adjudications and developed plans for their own lands. Below the regional level came four types of field offices to carry out BLM's management,

<sup>72</sup> Ibid., 48-9.  
<sup>73</sup> Ibid., 54-6.  
<sup>74</sup> Ibid., 57.

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protection, and disposal activities—the district land offices, public survey offices, district grazing offices, an district forestry offices.<sup>75</sup>

Along with a new organization, Clawson also introduced a new mission to guide the agency. The mission revolved around the new concept of “multiple use.” Clawson defined multiple use as a “system under which the same area of land is used simultaneously for two or more purposes, often by two or more different persons or groups.” This new view replaced the previously held concept that land should be managed to maximize its highest value use. Multiple use recognized the many values attainable from the public domain but introduced complications since different land uses might be either compatible or competitive. Multiple use required better knowledge of the land so Clawson pushed hard for an effective program of land inventory and classification. In 1952 he introduced the idea of “area administration” that provided each district office all the resources and technical specialists they needed to administer the land under their jurisdiction.<sup>76</sup>

Clawson successfully reorganized the BLM and energized it with a new mission, transforming it into a real conservation agency. But the problem of inadequate funding remained. Even after the grazing fee increase, BLM personnel remained well below the levels recommended in the Nicholson plan. The number of employees increased in 1948 to 123, in 1949 to 182, and then dropped to 176 in 1950. With surprisingly little opposition, Clawson managed to get a grazing fee increase of four cents per animal unit. The fee increase allowed the agency to expand, but still only two cents of the fee went to range improvements. Clawson then turned to Congress to fund a more effective range management program. He succeeded with the help of a poisonous weed called halogeton. This weed, poisonous to cattle, spread rapidly across degraded rangelands. Congress in its 1952 Halogeton Control Act approved a \$2 million supplemental appropriation to the BLM to restore range across the West to good condition. For the first time, the BLM had the funds and the personnel to carry out an effective program of land management.<sup>77</sup>

*The Forest Service*

Two strains of thought, one in the East and one in the West, converged in the 1890s and early 1900s to fundamentally alter federal land use. In the East, intellectuals like Gifford Pinchot saw the rapid depletion of the nation’s timber resources and advocated a new policy in which the federal government retained perpetual ownership of forests and conserved them as a permanent national resource. In the West, ranchers found themselves constantly fighting intruders on what they considered “their” land. Most jealously guarded their claimed right to graze on the public domain free of charge, but slowly the effects of overstocking began to change their attitude. Regulated land use could benefit them if it legitimized their claims to priority use of the public domain.

The General Public Lands Reform Act of 1891 marked the beginning of a new era in the public domain. The Act gave the president authority to set aside forested areas as “reserves.” President Harrison created the first two reserves in 1893, including the Grand Canyon Forest Reserve in Arizona. Five years later, President McKinley created the San Francisco Mountains and Black Mesa reserves. It was President Theodore Roosevelt, though, who created forest reserves by the score across the West and created most of the forest reserves in Arizona that are now a part of the National Forest system. By proclamation Roosevelt set aside the Santa Rita, Santa Catalina, Mount Graham, Chiricahua, Pinal Mountains, Tonto, Baboquivari, Huachuca, and Tumacacori reserves. An act in 1907, renamed the forest reserves National Forests. Roosevelt later added Dragoon and Verde National Forests.

<sup>75</sup> Ibid., 58-9.

<sup>76</sup> Ibid., 62.

<sup>77</sup> Ibid., 64.

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Of these only Baboquivari reserve is no longer in the National Forest system. President Taft rounded out Arizona's National Forest land with the addition of Tusayan National Forest in 1910.<sup>78</sup>

Over the years, the National Forests have been reorganized administratively, and even today are in flux. The first major reorganization in 1908 created ten National Forests: Apache, Chiricahua, Coconino, Coronado, Crook, Garces, Kaibab, Prescott, Sitgreaves, and Tonto. In 1909 land was taken from the White Mountain Apache Indian Reservation for the Apache National Forest, but returned to the tribe in 1912. In 1919, much of what became Grand Canyon National Park was carved out of Tusayan National Forest. More land from Tusayan and Kaibab went to the National Park in 1927. In 1933 Tusayan, on the south side of the Grand Canyon, and Kaibab on the north were combined into a single National Forest. The Crook National Forest was eliminated in 1953 and its lands transferred to the Coronado, Tonto, and Gila National Forests. The latest major change occurred in 1974 with the amalgamation of the Apache-Sitgreaves National Forests. Today, the Forest Service administers about 11,392,000 acres in Arizona, about 15.7 percent of the area of the state.<sup>79</sup>

Beginning in 1902, stockmen's associations began officially approving federal regulation of grazing on the public domain. The Executive Committee of the National Live Stock Association passed a resolution in favor of regulation that year. In Arizona, support for the idea solidified by 1907 so that the Arizona Cattle Growers Association could pass this resolution:

We, the members of the Arizona Cattle Growers Association, favor a supervision and regulation of the public grazing lands within [Arizona], through some system which would operate in an equitable, just and proper manner to all occupants of the range, and which would not interfere with homestead entry at set periods.

We suggest that a fair and just regulation of these public lands can be accomplished by leasing upon a per capita basis, and in the event this method is determined upon, we favor the issuance of leases for periods of not more than ten years.

We believe that under any system of Government control of range the rights of the present occupants of the grazing area as determined by priority of occupancy and use, should be carefully safeguarded. . .

Such a supervision and regulation can only be accomplished by the enactment of the property Federal laws, and we earnestly request Congress to enact such laws.

We deplore the devastation caused throughout the northern part of the Territory by migratory sheep herds, and we look to Federal control of the public grazing-lands to prevent this unfair use of Arizona's grazing-lands.

The Transfer Act of 1905 marked a major change point in the forest reserve system. President Roosevelt supported the transfer of the reserves from the Department of the Interior to the Department of Agriculture, where they would fall under the administration of Roosevelt's friend Gifford Pinchot. Said Secretary of Agriculture James Wilson, "All land is to be devoted to its most productive use for the permanent good of the whole people." He added, "All the resources of the forest reserves are for use," a sentiment both Roosevelt and Pinchot supported.

The Forest Service already recognized the political necessity of largely following the livestock associations' recommendations on grazing regulations. The 1905 Transfer Act included the following principles:

<sup>78</sup> Baker, et al, 1, 25.

<sup>79</sup> Ibid., 33-8.

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1. That priority in the use of the range would be recognized and the grazing privileges in the beginning allowed those who were already using the range;
  2. that any changes found necessary either in the number of stock grazed or the method of handling them would be made gradually after due notice had been given;
  3. that small owners would be given preference in the allotment of permits and be exempted from reduction in numbers of stock;
  4. that checking of damage to and improvement of the forest would be brought about so far as possible without total exclusion of the stock;
  5. that the forage resources of the national forests would be used to the fullest extent consistent with good forest management; and
  6. that the stockmen would be given a voice in the making of rules for the management of their stock upon the range.

Up to 1906 the reservation of timberlands had little affect on the free use of grazing land by ranchers. In that year, grazing fees were introduced for the first time. In 1908 Pinchot appointed Arthur C. Ringland as district forester for District (later Region) 3, which included Arizona, New Mexico, and parts of Oklahoma and Arkansas. Ringland raised a new staff of trained foresters and began to implement new policies of land management.<sup>80</sup> The benefits of a regulated leasing system and the professional and cooperative demeanor of the rangers began to win over many ranchers over the next few years. Grazing fees rose in the 1910s, to 3.9 cents per animal unit in 1916, and jumping in 1919 to a range from five cents to 12.5 cents. The basic land unit for grazing in national forests is the allotment. An allotment is defined according to the physical features of the land and surveyed to determined its grazing capacity. In the early days, rangers drew allotments with minimal information. Today, allotments are continuously studied and adjusted to take into account changing vegetation conditions and erosion. Modern rangers also make allowance for wildlife forage and property watershed drainage. Leases of allotments range from one year, to five, and eventually ten years.

To help America's production effort during World War I, the Forest Service encouraged ranchers to increase their stock on the national forests. With prices high and everyone expecting a long conflict, ranchers eagerly complied. The sudden end of the war in November 1918 resulted in lower livestock prices. With ranchers unable to sell at a profit and rangeland increasingly overgrazed, rangers faced an unwinnable situation. Policy tilted toward the ranchers by allowing them to continue grazing more livestock through the 1920s than rangers thought optimal.

The years between the world wars saw many changes in forest administration. The Forest Service saw six chiefs between 1920 and 1945. Arizona, however, benefited from the stability provided by long-serving regional forester, Frank C.W. Pooler. Pooler came to Arizona in 1905 to supervise the Prescott Forest Reserve. He later moved over to the Coconino National Forest where he oversaw its growth into a major National Forest unit. He finally became District (later Regional) Forester in 1920.<sup>81</sup>

<sup>80</sup> Ibid., 40.

<sup>81</sup> Ibid., 49.

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The Forest Services' first experimental station at Fort Valley observed that the area's pine forests seemed to be adversely affected by overgrazing. Beginning about 1902, Pooler successfully reduced grazing numbers in areas where timber was the primary crop. However, in 1925 when he announced to the Arizona Cattle Growers Association that he intended to implement 6.5 to thirty percent cuts in grazing on Tusayan, Coconino, and Sitgreaves National Forests in order to protect forage and young trees, the livestock interests threatened political action.<sup>82</sup> This may have played a part in Congressional debates that year over a bill that would have given stockmen vested right to the forests and mandated increasing grazing use. After heated debate the proposal was defeated.

In the debate over grazing fees, ranchers have usually supported the position that fees should only cover the cost of administering the Forest Service's grazing program. Competing interests supported the idea that grazing fees should reflect the value of the land in order to maximize revenue and restrict overgrazing. This debate has yet to be resolved and continues to be a serious current political question. Overall, livestock interests have been successful in minimizing fee increases.

*The Further Spread of Ranching: Greenlee County Case Study*

The key event in the start of the cattle boom in southern Arizona was the opening of the Southern Pacific railroad route in 1880. Older ranches began to shift towards supplying beef for a national market and new ranchers looked for any good grazing land they could find. The southeastern-most part of the territory was already well stocked in 1881 so new stockmen turned to the region north of the Gila River on the boundary with New Mexico—the area that is today largely Greenlee County.

It is impractical to list all of the ranches that were established in this area after 1880, but a few can be related to see the pattern of development. H.C. Day established the Lazy B Ranch near present day Duncan in 1880 with cattle bought in northern Mexico. Located near the Gila River, Day could trail his cattle to the railhead at Lordsburg, New Mexico for shipment to the larger market. Near Guthrie, a little further down the Gila, Pablo Salcido established the Salcido Ranch in 1883.

Spur rail lines added in later years further stimulated the spread of ranching to remote valleys in every corner of the territory. One such line was the Arizona and New Mexico Railroad, linking the new mining town of Clifton in 1883 to the transcontinental line at Lordsburg. With this railhead available, commercial cattle raising spread up to the valley of the San Francisco River in the extreme east central part of the territory. T.L. Stockton's Triangle Bar Ranch was one of the first in the area north of Clifton. The story is told that Mrs. Stockman, who apparently did not like rustic life, threatened to leave her husband if he did not build a proper house. He complied with her wish in 1904 by building a two-story, stone house with broad verandas and hardwood floors. It was reportedly one of the finest houses in the area.

Fred Fritz, Sr. began the movement north of Clifton in 1885, trailing sixty longhorns from Silver City, New Mexico. At Alder Creek, a small tributary to the Blue River, Fritz raised a one-room log building in 1888 that was the beginning of the XXX Ranch. Other ranchers followed until the Blue range was well stocked. Fritz apparently prospered through the 1890s, perhaps benefiting from a good water source while other ranchers were suffering from drought. After the turn of the century, the industry began to recover as population increases in Arizona and California increased market demand and prices were strong. A different kind of disaster struck the Blue Valley from 1905 to 1907. Severe flooding of the Blue River washed away the homes and facilities of many ranchers.

<sup>82</sup> Ibid., 95-6.

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The XXX Ranch remained undamaged since it was on high ground. Fred Fritz, Sr. died in 1916 and his son, Fred Fritz, Jr. took over the operation.<sup>83</sup>

Fritz, Jr. made a number of building improvements on the XXX Ranch over the next few years. The original log house consisted of one room with a dirt floor and a fireplace. A second room, separated by a breezeway, was added in 1898. This breezeway was enclosed as another room after Fritz, Jr. took over the ranch. He also built a one-story, frame guesthouse about 1920.

Like all ranchers in this era of stabilization, Fritz, Jr. had to adjust to changing rules on the use of public land. The General Revision Act of 1891 allowed for the setting aside of forest reserves for the protection of timber and watersheds. The Apache National Forest was proclaimed as forest reserve in 1908. It encompassed the land of the XXX Ranch. Fritz, Jr. applied under the terms of the Forest Homestead Act of 1906 for title to his ranch headquarters in 1913. Beginning in 1905, the Forest Service instituted land allotments, grazing fees, and regulations on the number of cattle allowed on forest land. Fritz, Jr. recognized the value of the new policy to a moderate size ranch like the XXX. With permits for his 500 or so cattle, the XXX Ranch was protected from incursions by other ranchers and the danger of overgrazing.

Drought struck the region from 1920 to 1924, but because of its proximity to the Blue River, the XXX Ranch survived while many other ranchers lost everything they had. Fritz, Jr. survived the worst of the Depression years. In the 1930s, the Forest Service allowed grazing permit holders to fence their allotments. This further stimulated individual investment in the land and, when combined with the reduction in overgrazing, helped modern ranchers survive later difficult periods like the drought of the early 1930s. Fritz, Jr. later served seven terms in the state legislature as the Democratic representative of Greenlee County. He was chairman of the Livestock Committee for four terms.<sup>84</sup>

James H. Jones of Birdwell, Texas was another rancher who settled in the Blue River Valley. His WY Ranch was founded in 1892 at upper Fall Creek, at the fork of the Blue. His original ranch house was a simple one-story log building. The WY Ranch continued in operation through the 1920s when additional buildings, such as a storehouse and a saddle house, were added to the complex. The 4-Bar Ranch on upper Eagle Creek was started about 1900 by Milan Batandorf, and changed hands several times in later years. The ranch house, barn, and meat house date from 1916 when W.C. and Cornelia Felleman purchased it.

New ranchers continued to come to this region in later years. Above Thomas Creek, west of the Blue River, the VT Ranch was established about 1911 when James E. Cosper, Jr. applied for a homestead listing in the Apache National Forest. His nephew, James A. Cosper, purchased the ranch in 1915 and constructed the main house about 1917. Like Fritz's XXX Ranch, the VT Ranch was a small operation, running only about 150 head of cattle. Cosper likewise benefited from the new system of grazing permits that guaranteed his protected access to the range. Unfortunately, the VT fell victim to another change in public land use. In 1933 a portion of the Apache National Forest containing the VT was designated a primitive area. This closed all access except by horseback, locking the VT Ranch in the productive mode of the nineteenth century. The VT never moved into the mechanized

<sup>83</sup> Monique Sawyer-Lang. "XXX Ranch National Register of Historic Places Registration Form [draft]." (Tempe, Arizona: Archaeological Consulting Services, Ltd., 1988). 8.2. This information derives from a manuscript autobiography of Fred J. Fritz, Jr. written ca. 1977. The manuscript is on file at the State Historic Preservation Office. As reminiscences, many of the dates are only an approximation.

<sup>84</sup> Ibid., 8.4; Autobiography of Fred J. Fritz, Jr., 19-22.

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era when trucks replaced cattle trailing. In 1940, Fred Fritz, Jr. purchased the VT and used it to expand his own grazing land.<sup>85</sup>

*The Further Spread of Ranching: Organ Pipe Cactus National Monument Case Study*

Between the copper mining town of Ajo and the international border lies one of Arizona's great natural wonders—Organ Pipe Cactus National Monument. Dedicated in 1937 to the preservation of the large stand of organ pipe cactus, the area is managed by the National Park Service as a national treasure. Nature's wonders are not the only presence in the Monument. Scattered across the Sonoran desert landscape are the physical remains of human uses of the land. While tourists come to see the kinds of life forms unique to this lush desert, a truer perspective of the land recognizes how human occupancy has shaped the landscape. Here, as nearly everywhere else in the state, cattlemen have ranged their livestock, never allowing any opportunity to earn a living escape.

Water is scarce in the Valley of the Ajo; the usually dry washes never attracted the attention of the Spanish or pioneer American cattlemen. Only in the twentieth century, when large ranches dominated the best lands, did small-scale ranchers look to this arid country. Cattle preceded the National Monument by more than two decades. About 1914, Donald Blankenship came to the area and built the first house at what he called the Rattlesnake Ranch. He and his family ran several hundred head of cattle until 1919 when Robert Louis Gray, Sr. bought them out. Gray and his sons bought other small ranches, line camps, and water rights until their's was the dominant interest in the region. It was a typical pattern of ranch amalgamation. Symbolic of the new era of ranching, many of the Gray family arrived at their new ranch house in a Model-T Ford touring car. Renamed the Dos Lomitas Ranch, it was only one of several Gray family properties in the lands eventually incorporated in the Monument. Others included Alamo Canyon Ranch, Bonita Well Line Camp, Bull Pasture, Gachado Line Camp, and numerous wells, tanks, and springs.

Bull Pasture is a large grassy basin located at an altitude of about 3,100 feet in the Ajo Mountains near the eastern boundary of the Monument. A spring at the northern part of the basin and several natural *tinajas* provide water. Surrounding the grassy basin and rising abruptly is a steep, rocky decline that naturally confined cattle that once grazed there. Mexicans referred to the basin as *Tinajas de los Torres* (watering tanks of the bulls) and *Los Portreitos* (little pastures). Two men, Hubstadera and Powell wintered their cattle at Bull Pasture in the early 1900s as did William G. Miller later. One advantage of wintering cattle in this basin was that, theoretically, by placing bulls with the cows in a confined location, the resulting calves would be of uniform age. Stockmen ceased using this place in the late 1920s.

Located near the international border, the Gachado well and line camp was an important outpost of the Gray ranching operations. The well was named for a gnarled mesquite tree that once stood near the southwest corner of the corral (from *agachado*, meaning to stoop or to bend over). It was dug between 1917 and 1919 by Donald Blankenship and purchased by Robert Gray in 1919. It was Gray who built an adobe house and corral there in the 1930s. For many years the place served as a line camp where cowboys could stay while they tended the cattle. The house has only one room with a dirt floor and is approximately 23 by 11 feet. The roof consists of a layer of organ pipe cactus rib poles crossed by a layer of saguaro ribs. Over the saguaro ribs was placed a layer of cardboard, a layer of creosote bush, then a layer of dirt and blacktop. The corral has two compartments, each about 60 by 80 feet, built entirely of mesquite, palo verde, and other locally available materials. A mesquite

<sup>85</sup> Monique Sawyer-Lang. "VT Ranch National Register of Historic Places Registration Form [draft]." (Tempe, Arizona: Archaeological Consulting Services, Ltd., 1988). 8.1-8.4.

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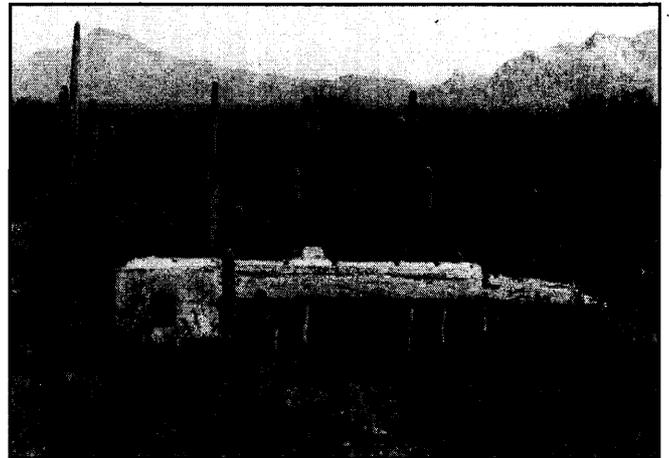
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loading chute and ramp with a gate trap permits livestock to enter, but not to leave. Water from the well was lifted by a windmill (now gone) and carried to a 2,000-gallon water trough in the corral.

The Gray's became acculturated to the border region and worked well with their Anglo, Mexican, and O'odham neighbors. Robert Gray had his main ranch house at Dos Lomitas built by Mexican laborers in their own vernacular Sonoran tradition. The building harkens back to the earliest ranchers, men like Pete Kitchen, whose ranch house also reflected the Mexican-Sonoran traditional connections to southern Arizona. Gray's cultural view deliberately defies mainstream Anglo-American building traditions.



Dos Lomitas Ranch house. SHPO photo collection.

Most of the area that the Grays grazed on was federal land and in 1937 President Roosevelt signed the executive order creating the National Monument.

At the request of Arizona Senator Carl Hayden, Secretary of the Interior Harold Ickes promised that the Grays could continue to run their cattle for the remainder of their lives. Unfortunately, under a 1916 law, the National Park Service was not authorized to allow grazing in parks and monuments. This left to Congress the responsibility of either granting the power to authorize grazing or to compensate current users of existing grazing rights. However, Congress refused to do either. The Department of the Interior in 1966 managed to strike a deal with the Grays to buy out their interest for \$360,000, but again Congress refused to agree. Following the letter of the law, Secretary Stewart Udall notified the Grays that their permits would expire at the end of 1968. The Grays fought back and rallied the Arizona legislature and congressional delegation to their support. Since Carl Hayden's word of honor was at stake, he supported the Grays when the case went before U.S. District Court Judge Walter Craig. Craig, as it happened, had been appointed on Hayden's recommendation and he realized the injustice of the Grays being caught between the law and the promises of high government officials. Craig found a solution by upholding the authority of the eviction order and then postponing the trial—until June 1977! When the last of the Gray sons died in 1976 the National Park Service finally acquired all of their ranching properties and evicted their cattle.

The delicate Sonoran desert could not be but adversely affected by grazing cattle. Grazing permits issued by the National Park Service varied from 550 to 1,050 head per year. Fulfilling its long-term goal of reducing adverse human intrusions in the Monument, the Park Service finally acquired all of the Gray properties in 1976, ending cattle raising there, but the Monument is still recovering from the erosional impacts of decades of overgrazing. The Park Service, however, does not intend to eliminate all vestiges of ranching activities. Its plans include the use of many of these properties to interpret the relationship between man, cattle, and nature in this unique land.

*The Arizona Strip in the Twentieth Century*

A combination of events in the 1910s and 1920s opened the Arizona Strip to a new type of settler. The Stock Raising Homestead Act of 1916 established the legal conditions where new ranchers could make claims on the public domain. Also, these were years of abundant rainfall. The lush grass and available water drew in ranchers as never before. One such newcomer was Abraham Bundy. Bundy witnessed the rich range conditions while

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hauling copper ore through the Strip in 1916. He brought in his family and on Thanksgiving Day, 1916, founded the community of Mt. Trumbull, better known as Bundyville.<sup>86</sup> Another person taking advantage of the new homestead act was Jonathan "Slim" Waring. Waring gave up on mining in the Wickenburg area in 1916 and decided to go north to the Strip to start ranching. He filed on 628 acres in Horse Valley on the Shivwits Plateau east of Mt. Dellenbaugh. The land there is wooded and Waring began constructing his necessary buildings out of logs. Within a few years, he was successful enough to begin acquiring more land in the area, which placed him in some conflict with Preston Nutter, the man who dominated ranching on the Strip. After the construction of Hoover Dam, the National Park Service acquired Horse Valley Ranch, and then leased it back to Waring. He later moved to the Wildcat Ranch in 1942 and reduced the old complex at Horse Valley to a simple line camp.<sup>87</sup>

The Stock Raising Homestead Act recognized that much land in the West was useful only for raising livestock. Also, in an arid land, the 160 acres attainable under the original Homestead Act was simply insufficient. Even the 640 acres available under the 1916 act could only support ten animals at best. Since a family typically needed one hundred cattle at a minimum they had to find ways to acquire more land. One method was for several family members to file on contiguous sections. This is why one finds homes built at the section corners, so the family members could be near each other. Another method was the old ruse whereby a rancher of means would have an agent, like an employee, file a homestead claim and when it was patented, buy it.

Mormon communities such as Bundyville are often noted for their distinctive town plan. Some commonly cited characteristics included wide streets, square blocks, barns and outbuildings located within town, and the centrality of the ward church. Of these, only the church-schoolhouse, located at the intersection of Main Street and the road to Mt. Trumbull, indicate that Bundyville was a Mormon community. The community was so small and so spread out that it never developed a central town. The idea of locating agricultural buildings within town was probably defensive, an idea developed when the church suffered persecution in Missouri and Illinois. In the Arizona Strip the residents of Bundyville had no such worries and they spread their homes across the landscape so they could better tend their livestock. In the larger areas around Bundyville, several families, mostly Mormon, built small log or frame houses, scraped out watering tanks, and tried to raise cattle.<sup>88</sup>

Preston Nutter remained the dominant cattle rancher in the Strip. His aggressive use of scrip had allowed him to acquire many of the most valuable water resources in the region. His dominance, however, did not go unchallenged. In 1914, a competitor wrote to the Commissioner of the General Land Office accusing Nutter of monopolizing the public domain with his control of water resources. An investigating attorney for the GLO agreed with this accusation, but Nutter wrote a defense to the Commissioner providing evidence that he allowed others to use his water holes. In the end, the GLO took no action against Nutter.<sup>89</sup>

World War I was a time of promise for the ranching industry. Expecting a long conflict, and following government encouragement, many ranchers greatly expanded their operations. Nutter prospered with the rest, but instead of expanding, he invested his profits in Liberty Bonds. In the general crash of the agricultural economy following the abrupt end of the war, Nutter survived while many of his over-extended neighbors failed. After the passage of the Stock Raising Homestead Act in 1916, new settlers arrived in the Strip to take their chances raising cattle and

<sup>86</sup> Belshaw, 371.

<sup>87</sup> Gordon Chappell, "Horse Valley Ranch (Waring Ranch) National Register of Historic Places Inventory-Nomination Form," Section 8, page 1.

<sup>88</sup> Belshaw, 373.

<sup>89</sup> "Preston Nutter: Ranching on the Arizona Strip," Manuscript Collection, Arizona Historical Foundation, Tempe: Arizona State University, n.d. 7-10.

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sheep. Nutter, like many large-scale ranchers suffered as many new arrivals looked at his herds as a way of starting their own. His financial position was strong enough, though, to withstand this pressure and he outlasted many of the new arrivals. In the 1930s, he was a strong supporter of federal management of the range and was instrumental in establishing one of the first grazing districts under the Taylor Grazing act. Toward the end of his life, Nutter's thoughts turned towards retiring from the cattle business. Having witnessed the fragile nature of the Strip and the results of periodic overgrazing, he seriously proposed that the entire federal domain in the Strip—which is practically the entire area—be turned into a game preserve. After his death in January 1936, however, the idea fell by the wayside. Nutter's cattle holdings were organized into two companies. The Nutter Livestock Company held all of his interest in the Arizona Strip. His widow, Katherine Nutter, sold out the Company in 1937, ending nearly half a century of Nutter dominance of the Strip.

Cattlemen first moved into the Grand Wash area about the turn of the century. The vegetation there is juniper and piñon timber, mountain chaparral, cliffrose, and Apache plume, along with transition line joshuas, cactus, and black bush. Goat and shepherders also moved. As many as 50,000 sheep were known to graze here. The land suffered from overgrazing and range fires. By 1935 there was little left of its once lush desert grasses.

Tax records from 1936 record that in the Mohave County portion of the Arizona Strip (west of Kanab Creek), there were 131 ranchers with cattle numbering 10,523 head, including milk cows. While these records indicate 71,224 acres of grazing land, they also record only 220 acres of irrigated land.<sup>90</sup> Beginning in the 1930s, conditions changed again. The Taylor Grazing Act introduced regulations on range use and cut access to stock water that many people had taken for granted in the open range era. Secretary of the Interior Harold Ickes established Grazing District No. 1 on July 8, 1935, encompassing all of the Arizona north of the Grand Canyon, exclusive of Indian Reservations, Grand Canyon National Park, and Kaibab National Forest. Land survey and allotment soon followed, forcing reductions in cattle and sheep herds.

Even in its heyday cattle raising in the Strip required few workers and even fewer permanent settlers. Perhaps three to four hundred cowboys sufficed for the work of the semi-annual round-ups. The combination of good rains and high prices during World War I promoted large increases in livestock. At Pipe Spring, some 15,000 head of cattle grazed in about 1920, a sixty-five percent increase over 1908.

More importantly, rainfall reverted back to its normal, lower average and feed conditions declined. The small number of irrigated acres in 1936 indicates the limits on water resources. Many small ranchers picked up and left the Strip, leaving communities like Bundyville largely as ghost towns. Few Arizona Strip ranches have survived to today. Buildings and old range improvements are scattered across the land, largely abandoned or used only briefly during the year. Reservoirs like Mud Hole, Foremaster, Oak Canyon, Junious, and Salt House still find some use although the number of cattle in the Strip is far less than during the heyday of the 1920s. Tax records indicate that an average of 20,000 cattle and 60,000 sheep ran on the Strip as late as the 1930s and 1940s. Modern numbers are in the hundreds.

*The 1920s*

For Arizona cattlemen, the 1920s were anything but roaring. The livestock industry, like much of agriculture throughout the country suffered from a severe economic recession and underwent a shakedown of overextended farms. World War I had promised high returns to cattlemen. Public policy and private interest combined to maximize production to supply beef to the Allied side of the European conflict. Ranchers expanded their herds

<sup>90</sup> Malach. *Early Ranching*. 33.

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and took on a heavy debt load to develop their facilities. However, the war came to an unexpectedly quick end at the close of 1918. Livestock and other agricultural prices began to drop so that by 1921, that sector of the economy was practically in a depression. The years 1921 and 1922 saw cattle prices decline from forty-five to sixty percent. The number of cattle shipped out of Arizona declined to 197,379 in 1920 and 195,035 in 1921 from the previous ten-year average of 244,680 head per year. Losses of cattle from all causes in the year prior to April 30, 1922 was thirteen percent.

Arizona cattlemen by this time were fully integrated into a national cattle market. There was little they could do individually to alter the state of the economy. Still, local conditions did matter. Weather, for instance, was always a factor in deciding the prosperity of a particular area. Market prices, though, were set nationwide and were little affected by regional variations. There is an indication that West Texas and New Mexico stockmen suffered somewhat more severely than Arizona stockmen, while Midwestern breeders were among the first to recover.

Conditions both within the state and outside worked to continue Arizona stockmen's difficulties into the middle 1920s. Drought in California in early 1924 cut into sales of Arizona feeders as California stockmen moved their excess off of the range. The next year, too much rain in California caused another weak market for Arizona-fed beef cattle. Both 1924 and 1925 were dry years generally throughout Arizona. The Arizona Cattle Growers' Association reported the range as in extremely distressed condition. This translated into feeder cattle in poor condition and slumping sales. The Association convinced both the Santa Fe and Southern Pacific railroads to lower their rates by thirty-five percent to help move cattle off the weakened range.

Ranchers were also politically powerful and they moved to seek governmental aid. First there was an ill-timed proposal by the Forest Service to reduce cattle grazing numbers that had been allowed to exceed sustainable levels as a result of the war. The Association fought and forced a modification of this proposal. The Arizona congressional delegation worked on behalf of a resolution waiving collection of grazing fees in National Forests in 1925 and 1926. While this broad resolution failed, the delegation did win for Arizona ranchers a measure authorizing waiving of fees in drought areas. The Forest Service then proceeded to remit its fees for 1925 and the first half of 1926 back to lessees.

California has always loomed large in relation to Arizona's economy. While a good portion of Arizona feeder cattle moved to states like Colorado, Nebraska, South Dakota, and Kansas for fattening, California became the largest and most important market. Particularly during the 1920s, California was undergoing a tremendous population boom that expanded demand for beef year after year. At the same time, this put increasing pressure on that state's own ranchers to adapt to new conditions, shifting from breeding to feeding and dressing. From 70 to 80 percent of Arizona's cattle shipments went to California. This amounted to about 4.5 percent of California's beef supply.

It was California's cattle industry that moved first to organize the western livestock industry. Backed by the state's major banks, the California Cattle Growers' Association created a cooperative marketing system that would guide sales of beef cattle, hopefully smoothing out irregularities in supply that might destabilize prices. By 1925 some 90 percent of Arizona cattle feeders had joined the California marketing plan. When conditions were bad for Arizona stockmen in 1925 and 1926, many credited the new cooperative marketing plan for keeping prices stable. Renamed the Western Cattle Marketing Association in 1927, the cooperative expanded its membership further east into New Mexico. By the late 1920s, Arizona beef cattle ranchers were fully integrated into a multi-state marketing system whose explicit purpose was to manipulate the market to stabilize prices at a high level. The cooperative system was a response to the depressed conditions that marked the early 1920s. While stockmen might relish the image of rugged individualism, in reality they operated as businessmen within an integrated market and their strategies reflected profit maximizing behavior.

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*The Era of the Taylor Grazing Act*

By the 1930s, it had become increasingly apparent that human settlement had disturbed the natural balance of land with its associated flora and fauna, leading directly to erosion and declining soil fertility. Extensive droughts in many parts of the United States, including Arizona, coinciding with the decline of the industrial economy in the early 1930s, turned the federal government's attention to the problem of soil erosion. This was a problem that President Roosevelt identified with personally, having had long experience as a land manager at his own Hyde Park estate. During the First Hundred Days of the New Deal and later, Roosevelt and Congress created agencies to provide relief and reform by employing men to repair the damaged land. The Civilian Conservation Corps, Roosevelt's forest army, was the most famous of these, employing hundreds of thousands of young men in forests and on the range, constructing roads, dams, fire lookouts, and other improvements to aid in better land management. The Soil Erosion Service (later the Soil Conservation Service), also created in 1933, provided federal assistance for soil improvement programs on federal lands, including Indian reservations, and on private land. Special conditions in Arizona made these soil conservation agencies a far more important part of the New Deal here than in many other states. One of these was the drought, which severely affected cattle raising, the state's second largest agricultural industry. This was particularly important on several of the reservations where livestock provided the most important means of support for substantial numbers of tribal members. Another important characteristic of the state was the vast extent of federal lands, at that time divided into major management categories such as reservations, National Forests, National Parks and Monuments, and the public domain under the jurisdiction of the General Land Office.

The Roosevelt Administration's program to restore prosperity to the agricultural sector took shape in the Agricultural Adjustment Act of 1933. This act was based on the premise that overproduction was a major contributor to the woes of the nation's farmers. Many commodities, such as cotton and corn, had built up tremendous surpluses over the years that contributed to the collapse of prices in the early 1930s. The Agricultural Adjustment Administration (AAA) implemented a program of production limitations called the domestic allotment plan. Livestock was also perceived to have exceeded the optimal capacity of the land, however, cattlemen in 1933 successfully lobbied to exclude cattle from the AAA. Stockmen denied the merits of the domestic allotment plan, and feared that a processing tax would place beef at a competitive disadvantage. They did not oppose government aid, however, which they sought in the form of tariff restrictions on beef imports, livestock loans, and the purchases of beef by the Federal Surplus Relief Corporation. The situation changed by early 1934 as the full pressure of declining prices threatened the financial position of many ranchers. The Jones-Connally Act of April 7, 1934 added cattle to the AAA's list of basic commodities, and the AAA began planning for a surplus reduction program similar to its other commodity programs. Charles E. Collins, president of the National Cattle Growers Association wrote to Wallace on April 6 that there "is a very unsettled feeling among cattle growers and cattle feeders due to the uncertainty over [the] cattle program and processing taxes." Cattlemen, he claimed, definitely opposed the idea of a processing tax. They wanted only the provisions for surplus reduction and disease control in the Jones-Connally Act applied. Within weeks, it became apparent that the West was suffering from a major drought that threatened ranchers either with desiccated cattle on the range or with collapsing prices, as herds

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were dumped on the market. The AAA quickly dropped plans for contractual reductions with a processing tax and proceeded to implement a drought purchase program to remove livestock from the range.<sup>91</sup>

The drought purchase program satisfied cattlemen, giving them money, removing the surplus threatening the market price, raising prices, and protecting the range from overgrazing. It did so without contracts, processing taxes, or other obligations from producers. In addition to the direct purchase of cattle and sheep, the drought relief program included negotiations with the railroads to reduce rates out of the drought areas, a relaxation of crop reduction contracts to allow planting of forage crops, and the use of relief funds to increase range water supplies and provide stock feed and seed to needy families. Between July 1934 and January 1935, the AAA purchased 8.4 million head of cattle and 3.6 million head of sheep. At the height of the program, the AAA spent \$67,000 a week on livestock purchases in Arizona. In mid-September, Ross encouraged Arizona farmers to plant forage crops on the land original contracted to lie fallow. Cattle producers received about \$111.7 million in payment through the program. Drought purchases contributed to a decline in the number of cattle on farms by 6.6 million head, or about 11 percent from January 1, 1934 to January 1, 1935. The result was a 75 percent rise in the price of cattle by April 1935. The drought reduction program raised cattle prices practically to the AAA's calculated "fair exchange value." Having gotten what they wanted from the AAA on their own terms, cattlemen had no further incentive to support it.<sup>92</sup>

In addition to these agencies, the New Deal in 1934 established a new land use policy designed to curb abuse of public lands by overgrazing of livestock. The Taylor Grazing Act established a new system of land management in which the public domain was segregated into defined districts and permits required to graze livestock. The Taylor Grazing Act brought the era of the open range to an end. It established a system of federal oversight that left a great deal of control to the grazers themselves. Implementation of the Taylor Act included an extensive land improvement program guided by the Grazing Service using CCC labor. Also, the new system granted limited rights to use of the land and encouraged livestock raisers to make their own investments in range improvements such as fences, wells, and water tanks. In general, Arizona stockmen opposed passage of the Taylor Act, but thereafter worked successfully in the formation of grazing districts. Their cooperation with a program that they did not want reflects their desire to protect their established interests. Arizona stockmen's surprisingly calm acceptance of the end of the open range, perhaps reflected their consideration of the difficult times their industry had gone through in the boom and bust of the 1920s and the recurrence of severe droughts. Stockmen, like most others in Arizona, readily accepted the New Deal for the benefits it brought to them.

In Arizona prior to the 1930s, the distribution and legal structure of land ownership and management shaped how stockmen structured their businesses. Of foremost importance was the dominance of federal land that never passed out of public ownership. Excepting the national forests and Indian reservations, most public land was open for mineral and range uses. In the days of the open range, ranchers tended to define the right to use the land as belonging to whoever was there first, with little regard to the larger public benefit. Federal policy effectively encouraged this ideology not only by not challenging private exploitation, but also by giving every encouragement to the transfer of public lands into private ownership. Because land without water had limited value, it was possible to build large ranches by acquiring ownership of only limited acreage surrounding springs or along

<sup>91</sup> D.A. FitzGerald, *Livestock Under the AAA*, (Washington: The Brookings Institution, 1935), 174-75, 179-80, 189; *Arizona Republic*, April 16, 1934, 1:2. On November 10, 1933, the FSRC purchased 400,000 pounds of canned beef, and between January 5 and March 6, 1934, it purchased 114,260 head of cattle for \$2.5 million. Sheep did not join the AAA's list of basic commodities, although they were part of the drought relief purchases.

<sup>92</sup> *Ibid.*, 189, 194, 201, 209; *Arizona Republic*, September 14, 1934, 1:1; September 19, 1934, 1:7.

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streams. But because it was impossible to legally prevent others from entering and using public land, stockmen had an economic incentive to use the land for its maximum short-term value. The result was erosion, changing vegetation, and declining productivity.

To preserve the land, either its ownership had to change, or it had to be better managed by the federal government. While many land users in Arizona preferred transferring the land to private ownership, the traditional policy, the New Dealers around Roosevelt were generally sympathetic to maintaining public ownership. The conservation movement respected public ownership and generally held that private ownership equated with exploitation. In 1934, Congress approved the Taylor Grazing Act that established an outline for federal management of the public domain that would conserve natural resources by regulating use. Until well into the 20th century, the prevailing assumption had been that rapid economic development required transfer of public land into private ownership. The federal government transferred large blocks of land to newly admitted states, and subsidized development of canals and railroads with land grants. The Homestead Act of 1862 offered up to 160 acres to any person who agreed to live and work the land for a specified period. The exact provisions of homestead entry changed over the years with additional legislation such as the Timber Entry and Desert Land Acts, but the principle remained that federal land should be given to individual users as freely as possible.

Cattle ranchers were the most adept in adjusting to the imperatives of the law and climate. They found that by acquiring limited acreages around springs and streams, they effectively controlled thousands of acres of surrounding desert land. Many large ranches were aggregated through a combination of private plots and intervening public domain. Often the first to occupy an area, these ranchers quickly developed a view that use of the land should be theirs by right. They vehemently opposed later entry by homesteaders or invasion of their territory by other stockmen. They especially rejected any suggestion that the federal government should regulate use of the land in any way that would restrict their freedom. However, open range had limited appeal even to stockmen. Because public land was always open to newcomers, many ranchers grazed the maximum number of livestock to derive immediate profit, before someone else arrived. Most ranchers recognized the implications of this strategy, but their preferred solution was to transfer the land to private ownership.

The General Public Lands Reform Act (also called the General Revision Act) of 1891 introduced the concept that the federal government should remain a permanent landowner. The act authorized the president to set aside forest reserves, which later became the national forests. In the early twentieth century, the new Forest Service restricted access to the national forests and introduced grazing permits and fees. Ranchers' opinions divided on the need for new rules on range management. The most progressive understood the lesson of the drought of the 1890s and realized that limits had to be placed on the number of livestock if the industry was to survive and expand. Most ranchers continued to support privatizing the public domain.

Depression and drought hit livestock raisers hard enough to shake loose some of their deeply held ideology. By the cattlemen's own insistence, cattle were excluded from the Agricultural Adjustment Act of 1933. They were added after the price of beef collapsed, but the AAA did not institute a program for systematic reduction of cattle numbers. Regulation of grazing on public lands now appeared one of the few avenues for regulating production and stabilizing price. Up to this time, users of the public domain had no stronger champion than Edward T. Taylor, a generally progressive congressman from Colorado, but a leading opponent of federal conservation efforts. The dire conditions of the West and its people in the trough of the depression worked a conversion of Taylor's views. "The basic economy of entire communities was threatened," he explained. "Erosion, yes, even human erosion,

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had taken root. The livestock industry, under circumstances beyond its control, was headed for self-strangulation." It was a political conversion of great significance. In 1933, Taylor introduced a bill giving the Department of the Interior authority to regulate grazing.

Evidence indicates that the majority of Arizona stockmen opposed Taylor's bill, fearing an extension of federal regulations over the public domain would restrict their use of the land. Their opposition to the Taylor Act did not reflect hostility to other New Deal programs in Arizona. Many recognized the valuable work being done to develop and protect the state's forest and range resources. At a Cattle Growers' Association meeting in February 1934, cattlemen expressed their support for the work programs of the CWA and PWA, which included several range improvement projects. This was also the time when they accepted listing cattle as one of the AAA's basic commodities. They did not, however, approve of the proposal to create grazing districts and restrict use of public lands to permit holders. Small operators feared monopolization of the land by large operators, while the large operators feared the opposite. Howard Smith represented the Arizona Cattle Growers' Association at Senate hearings on the bill where he stated that Arizona was "unalterably opposed to enactment of any bill which would give a federal department control over the public domain in any state." Sheepmen also opposed the bill. The president of the Arizona Wool Growers' Association, A.A. Johns of Prescott, declared that Arizona's stockmen were "unanimous" in opposing the bill, although, tellingly, they preferred the bill to the threat of unilateral action by the Secretary of the Interior to restrict use of the public domain. Johns warned that passage of the bill would end the development of Arizona and said that, instead, the land should be turned over to the states. He also denied the basic premise of the bill, that the land was threatened by erosion. "There isn't enough water in the Southwest to cause serious erosion," Johns stated. "There is no erosion there."

Despite this opposition, the Taylor Grazing Act became law on June 28, 1934, marking a new era in public land regulation. The purpose of the act was "to stop injury to the public grazing lands by preventing overgrazing and soil deterioration; to provide for their orderly use, improvement, and development; [and] to stabilize the livestock industry dependent upon the public range" through lease of public lands to stockraisers. The act called for the creation of grazing districts to manage leases at the local level. It also provided for land exchanges with the states. The original provisions restricted the act to only 80 million of the approximately 173 million acres in the public domain. To aid in the selection of these lands, the President on November 28, 1934, withdrew all public domain from entry, allowing the Department of the Interior time to map out those portions suitable for grazing. This withdrawal order effectively ended the era of homesteading and the open range. To administer the Taylor Act, Secretary Ickes created a new Division of Grazing, headed by Farrington R. Carpenter, a Colorado rancher. Carpenter recognized that cooperation with stockmen was the key to successful implementation of the new program. He traveled extensively across the West, attending numerous state and local stock raisers' meetings. To gain their support, Carpenter promised that each district would have an advisory board composed of grazing permit holders. These boards would provide recommendations on district boundaries, range conditions, and the apportionment of rangelands among permit holders. It was this promise of "home rule" that successfully won over many stockmen.

Passage of the bill forced stockmen to cooperate in order to protect their own interests. This shift to cooperation was enhanced both by Carpenter's offer of "home rule" and the simultaneous start of the AAA's drought relief program that rescued many stockraisers from financial disaster. In September 1934, Oscar L. Chapman, Assistant Secretary of the Interior, headed a delegation to the state meetings of the Wool Growers' and Cattle Growers' Associations in Arizona. Chapman believed that "ranch men throughout the West realize that the vast

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public ranges which are being overgrazed and depleted must be protected and restored or they will soon be replaced by acres of desert land. They realize that it is to their own interest, as well as to the interests of their states and the nation, that these lands be protected by a sane, uniform policy." While not every stockman held this view, most realized that cooperation with the new program was in their interest. In exchange for this cooperation, they presented three demands to Chapman. First, they wanted all of the public domain in Arizona withdrawn from homestead entry. This would remove a long-standing threat to their position as the primary users of the public domain. Second, they wanted an Arizona man to administer the Taylor Act in the state. Finally, they wanted all grazing districts to remain within the boundaries of the state. This last demand reflected concern over conditions in the grazing lands between the Grand Canyon and the Utah border, the remote area known as the Arizona Strip.

Apart from Grand Canyon National Park, most of the Arizona Strip was used as range for sheep and cattle. Although most of the area's stockmen were Mormons, the dominating figure there was a non-Mormon Utah rancher, Preston Nutter. Most of Nutter's cattle grazed on public domain. The open range, however, was always open to newcomers and when the Stock Raising Homestead Act of 1916 offered full sections of free land, many came to the Strip to try their luck raising livestock. Like many large-scale cattle operators, Nutter suffered deprivations from many newcomers who rustled from his herds to start their own. Nutter's financial position was strong enough, however, that when rainfall declined in the 1920s and range conditions deteriorated, he survived while many others retreated. The open range, for Nutter, was a dubious proposition. The threat of invasion by newcomers and the perpetual tendency to overgraze made conditions difficult for a large-scale businessman. In the debate over the Taylor Bill, Nutter strongly supported federal management and after its passage he was instrumental in organizing one of the first grazing districts.

Harsh conditions on the Strip during the 1920s had also convinced other stock raisers there of the need to reduce total stock numbers. At the September meeting with Chapman, Short Creek stockman J. Reed Lauritzen warned that Utah men were sending cattle into the Strip. He suggested reducing the number of cattle in order to allow the land to "recuperate," and then to allow only Arizona cattle on the range. He further warned that it "is within the powers of the bill to create and sustain monopolies of range facilities for the benefit of powerful livestock interests to the detriment of the comparatively poor resident who is struggling to make a start." It is not clear whether these comments were directed at Preston Nutter. Prescott area stock raisers voiced their support for keeping Utah stock out of the Strip. Cattleman Wayne W. Thornburg, warned "We will demand this for Arizona, and if we can't have it, we'd better develop an Arizona Huey Long and go after it the way he would." Chapman listened to the Arizona stock raisers, but offered no specific promises beyond a vague promise that "strip livestock men need not worry."

At a major meeting of cattle and sheep raisers in Phoenix on January 28, 1935, Carpenter claimed that stockmen were embracing the new program. "We anticipate no great difficulties in organizing Arizona," he stated. Approximately 400 stockmen attended the Phoenix meeting. They selected a committee of 23 to work with federal officials, approving a plan to divide the state into four or five grazing districts, with exact boundaries to be decided later. Carpenter warned that the "program contemplated under the Taylor Act cannot be put into operation all at once. It may be 10 years before it is going the way the government expects it to go. Then it will mean a new era for the sheep and cattle men." Following the meeting, Carpenter began a four-day tour of public lands in northeastern Arizona along with university president Homer Shantz, Hugh Calkins of the SES, and other officials.

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Progress in organizing grazing districts in Arizona was slow. In part because of the support from Nutter, who was a member of the committee of 23, the Arizona Strip became the state's first grazing district in July 1935. Despite the assurances given by Chapman the previous September, when Grazing District #1 was created on the Strip, encompassing approximately 3.45 million acres, it did not restrict membership on its advisory board to Arizona men. Utah stockmen, in fact, made up the majority of the board, creating long-term enmity between Arizona men and the Division of Grazing. The Strip district was the only one created in Arizona in 1935 because of the 80 million acre limitation in the Taylor Act.

A conference of Arizona cattle and sheep men in Phoenix in November 1935 condemned the operations of the Taylor Act and repeated their demand that the Strip's advisory board be composed only of Arizona stockmen. Furthermore, they declared the Department of the Interior's efforts to organize Arizona into grazing districts as "invalid, null and void" because they disagreed about the meeting between Carpenter and Arizona stockmen in January when the committee of 23 had been organized. Federal officials maintained that the conference was an officially called meeting, as provided for in the act, and through it all legal preliminaries towards establishing grazing districts and setting up control committees had been accomplished. The stockmen later claimed that they thought the meeting was an informational discussion, so they believed the creation of the Strip district should be voided. Federal officials never accepted this argument and the district remained in place, along with its domination by Utah stockmen.

It appears that Arizona stockmen were more wary of the Taylor Act than most stockmen in the West. While many in the state opposed the creation of districts, delegates at the national stockmen's meeting in Denver in February 1935, supported removal of the 80 million acres limit in the act. Furthermore, grazing officials in the Department of the Interior were already making plans for grazing districts on over 140 million acres on the assumption that support for removal of the limit was so strong that it would soon be lifted. Ickes worked with congressional supporters to extend the act to the entire public domain. A bill to amend the Taylor Act to this affect passed the House of Representatives, but Senate opponents began attaching additional changes, some intended to thwart the purposes of the act. Senator Ashurst explicitly condemned the act as the most "damaging, devastating to the West of any measure ever passed." Ultimately, rather than simply apply the act to the entire public domain, the Senate bill capped it at 142 million acres, which matched Interior's existing plans for districts. Ashurst and others had criticized the importation of administrators from outside the West, "carpetbaggers" he called them, to oversee grazing regulations, so the Senate bill required that assistant grazing directors be from the states in which they worked. Ickes supported, or at least did not oppose some of these amendments. However, when the Senate attached another requirement that isolated tracts of the public domain less than 720 acres not already appropriated or reserved be turned over to the states, Ickes turned against the bill. The Senate version was largely adopted in conference with the House and the bill sent to the President. Ickes characterized the provision to turn land over to the states as a threat to the entire public domain that would spell the end of conservation on public lands. Agreeing that the bill was "unsound," the President vetoed it on September 5. While preserving the integrity of the Taylor Act, rejection of the bill also maintained the 80 million acre limit that, by this point, had already been divided into 30 districts, including the single district in the Strip.

Opposition to the extension of grazing districts slowly faded, and Ickes continued pushing to extend the acreage limit to 142 million acres. Congresswoman Greenway and Senator Hayden both introduced bills to allow formation of grazing districts in Arizona regardless of the 80 million acre limitation. Several Arizona cattle and sheep men opposed these bills, claiming they allowed formation of districts over the objections of those affected. Wayne

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Thornburg led a group called the Statewide Livestock Advisory Committee, composed of about 100 cattle and sheep men, in opposition to the bills. The group originally formed in 1935 at Carpenter's request to aid in the formation of districts. Informed in 1936 that their services were no longer required, Thornburg kept the group together to oppose the Hayden bill and the formation of new districts. The State Land Commissioner, Charles Mullen, who was interested in the bill because of its land exchange provisions, criticized Thornburg's group, saying, "The committee wants no control. They've used the public domain for nothing. They don't want the little man built up. This is a direct protest against the New Deal." He warned that opposition would "delay or defeat one of the most important pieces of federal legislation, as far as Arizona is concerned, ever offered in congress." This evoked a charge from Arizona Attorney General John L. Sullivan that Mullen was "incompetent." On May 10, 1936, Thornburg's group met in Phoenix to galvanize further opposition. Carpenter himself came to the meeting to defend the Taylor Act directly. "I wasn't for this act myself at first," he told the committee. "But I know that it can be worked out so that control of the ranges is in your hands. No one hates a bureaucratic method of operating a cattleman's business more than I. But the Taylor act will not bring this on if we all cooperate under it." A.A. Johns of the Wool Growers Association responded, "we are all right as long as we have a western man like you in charge of the grazing act, but what is going to happen when a politician gets your job?"

Although the Greenway and Hayden bills did not pass, Congress finally agreed at the beginning of 1936 to raise the limit of the act to 142 million acres, which allowed for several new districts in Arizona. Stockmen in Mohave County approved a second grazing district, encompassing two million acres in February. A third district, encompassing portions of Graham, Greenlee, and Cochise counties was in place by the end of March. The Soil Conservation Service strongly supported creation of this district to protect its work in the upper Gila River valley. Because of this growth and the desire to support home rule, Arizona was separated from New Mexico and given its own regional office in Phoenix under C.F. Dier of Safford. Despite these gains, many stockraisers continued to oppose the act and the creation of more districts. Not until March 1937 did stockmen in Yavapai and northern Maricopa counties approve the state's fourth district, encompassing approximately 2.3 million acres. By this time, most other states had completed forming their grazing districts.

Also attending the national stockmen's meeting in Denver in February 1935 were game commissioners from nine states who believed the act could also be used to create game preserves by excluding others from the public domain. Such restrictions in land entry were in the interest of both stockmen and wildlife conservators. After the 80 million acre limit was removed and three other grazing districts created in Arizona, the Division of Grazing and the Biological Survey proposed a fifth district under their joint administration in Yuma County. Despite protests from the Arizona legislature, the Arizona Colorado River Commission, and other Arizonans, Ickes in August 1937 withdrew 3.4 million acres, largely in Yuma County, which would both preserve grazing lands and protect the habitat of mountain sheep and goats. Several important Arizona politicians vehemently opposed this action, particularly because the area encompassed potentially irrigable lands. Responding to this pressure, Ickes reduced the proposed game refuge to 550,000 acres, divided into two parcels. The first was 250,000 acres in the Kofa Mountains which later became the Kofa National Wildlife Refuge, including the unusual Palm Canyon. The other tract of 300,000 along the border became the Cabeza Prieta National Wildlife Refuge.

Despite the slow progress in forming grazing districts, and continuing hostility of stock raisers against federal regulation of public lands, the Taylor Grazing Act successfully altered the relationship between the federal government and private range interests. The coincidental drought of 1934 and the AAA's relief purchases of cattle, aided in the implementation of the Taylor Act by reducing the number of cattle on the range. This allowed

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the Grazing Service to avoid some problems that would have arisen had it tried to significantly reduce livestock numbers through its permitting system. It could easily use the number of cattle and sheep remaining in 1935 as the basis for its permitting. With the districts came both a system of permitting and fees for use of public lands. One important early policy established by the Division of Grazing was that it would not support stockraisers who used only public lands. Permits were granted according to how much "commensurate" grazing land they either owned or leased. This rule worked to the advantage of established ranches. This led to charges by Senator Ashurst, in opposing the act, "that the little man is being discriminated against." At the same time, fears were expressed that the government would use the act to eliminate the giant cattle concerns that had grown in the late 19th centuries and replace them with many small operations. As charges were leveled on both sides, it is not clear whether, at least during the 1930s, the operations of the Taylor Act worked to the detriment of any particular group of stockraisers. The early advantages given to established stockmen by Division of Grazing rules favoring property owners and those who could demonstrate traditional use seem, if anything, likely to have solidified the *status quo*.

*The 1940s and the End of the Historic Period*

Both World War II and the post-war years saw a great boom in the cattle industry. The number of cattle sold live in Arizona rose from 362,325 head in 1939 to 386,144 in 1949. More impressively, the value of cattle in Arizona rose from \$23,010,195 in 1940 to \$75,145,243 in 1950. In comparison, the sheep industry the inventory value increased from only \$2,798,093 in 1940 to \$7,588,406. The typical ranch in Arizona in 1950 was a cow and calf outfit, producing calves and yearlings for fattening elsewhere in the country. Except for the irrigated agricultural areas, primarily in the Salt River Valley, Arizona was not particularly well suited for fattening cattle, nor was the population base here large enough to support a significant slaughtering market. On the land, both private and government efforts had developed springs, wells, concrete dams and thousands of earthen tanks to assure a ready supply of water. Where range cattle in the pioneer era relied on natural sources of water, by 1950 it was said that cattle rarely had to travel more than two miles to find water.

A small change in marketing practices came after World War II. Most cattle from Arizona were shipped to a terminal market such as Los Angeles, Denver, Kansas City, or Omaha, which drew from large cattle raising hinterlands. The alternatives to this sort of marketing were to either slaughter right on the farm or to sell fattened cattle direct from large commercial feed lots locally. Except for the Depression and war years, the general trend for slaughter on the farm was downward. Such slaughter was always a small fraction of live sales. Direct selling at a local or "country" market suffered a price disadvantage both because there were fewer buyers present and the price was discounted to allow for shrinkage after leaving the feed lot. Still, direct marketing increased in importance in Arizona after 1945, at least up to 1960. Economic analysis seems to indicate that a country market, like Phoenix, was superior for good grade cattle while a terminal market was better for choice grades.<sup>93</sup>

Another factor affecting Arizona cattle ranching after the war was the response of wealthy people trying to minimize their tax burden. At a time when the top marginal tax rate approached 90 percent, investors discovered the value of placing money in cattle ranches. Ranches as tax shelters introduced a new character in Arizona ranching. New owners arrived who were not particularly concerned with the operation of the ranch and who may have wanted to own an Arizona ranch as much for a romantic Western get-away as for business purposes. It was the land holding pattern that contributed to this favorable tax benefit. Since relatively little of the land of a ranch

<sup>93</sup>Raymond O.P. Farrish, N. Gene Wright, and Thomas M. Stubblefield. *Cattle Prices in Direct Sales and Terminal Markets*. Folder 99. (Tucson: University of Arizona Agricultural Experiment Station and Cooperative Extension Service, 1983. 14.

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was privately owned, a very high percentage of a ranch investment was in depreciable assets. It was possible to depreciate up to ten percent of the whole investment each year and nearly 80 percent within ten years. For an investor in the 60 to 90 percent tax bracket, an investment in a ranch could return up to 72 percent of the whole investment with tax offsets in ten years. And the investor would still own the ranch at the end.

Mention has been made of the Baca land grant settlement. The second of the two Baca Floats in Arizona, blocks of about 100,000 acres, known as Float No. 5 is located in Yavapai County on upper Burro Creek. Its dominant land form is 7,263 ft. Mount Hope though most of the land is at about 5,500 feet. This area was not part of a Spanish or Mexican land grant property, but was assigned to compensate for a large land grant in New Mexico. Few men controlled as much wealth in cattle as Col. William C. Green. His Cananea Cattle Company held over one million acres in Mexico at one point, with another quarter million in Arizona alone. With the security of American property in Mexico not as high as under the regime of President Porfirio Díaz, Green's company decided to increase its American cattle holding investments. In the mid-1930s the Green Cattle Company purchased the Baca Float No. 5 and then added the adjacent 157,000-acre Mahon ranch to the west in 1938. After disposing of some excess land these two properties gave the company 236,000 acres. The forage appeared good, but additional investments were necessary to make the ranch return a profit. Miles of fences were put up, tanks built, and windmills placed to regulate the cattle and provide abundant water. Like most Arizona cattle ranches, this was to be a breeding operation.<sup>94</sup>

There was already a house to serve as ranch headquarters. To this was added a new large corral with scales and loading chute along with a bunkhouse. Spread thinly over this huge area were five one- and two-room cabins, all constructed of rough, unpainted lumber. These were the line cabins for the ranch hands. From 1938 to 1950, the company constructed thirty tanks and deepened eleven old ones. It also drilled four windmill wells. There are two major pastures on the Baca Float. The large was around Lake Mary, on the north side of Mount Hope with just over 3,000 acres. The other, Johnson Flat, spread over 2,300 acres. The company also developed a new pasture of 12,000 acres on Cow Creek on the Mahon Ranch.<sup>95</sup>

There were not the only investments the company made in Arizona. In 1946 it also owned the Palominas and San Rafael ranches along the Mexican border, spreads of about 7,000 and 22,000 acres, respectively. The San Rafael was notable for producing registered cattle. The Baca Float and Mahon Ranch, however, were its primary investment. In its early years, the Baca Float under the Green Cattle Company was successful, producing calves and yearlings at low enough cost to be profitable.<sup>96</sup>

From late 1946 to mid-1948 was a good time for ranchers with prices holding very high. There were changes in the ranching landscape as well. People and money began to pour into the state. New roads were constructed that gave easier access to places previously accessible only on horse or foot. When Yavapai County built a new road to Prescott, the cowboys of the Baca Float stopped going to Seligman and went to Prescott instead. Improved roads and more cars made life tougher for many small towns that relied on the locals for their business. Pressure increased on the big spreads like the Baca Float. People with money looking for tax write-offs or wanting to build themselves a ranch house and live the Western life (part-time) contributed to the breakup of several large ranges.

<sup>94</sup> Robert L. Sharp. *Big Outfit: Ranching on the Baca Float*. (Tucson: University of Arizona Press, 1974), 4, 45.

<sup>95</sup> *Ibid.*, 48, 45.

<sup>96</sup> *Ibid.*, 132.

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**INDIAN CATTLE RAISING: CASE STUDIES OF THE SAN CARLOS AND TOHONO O'ODHAM RESERVATIONS, 1920-1950**

The following case studies are intended to illustrate the centrality of cattle raising to the economic development of Arizona's Indian tribes in the first half of the twentieth century. Two of the state's largest reservations, the San Carlos and the Tohono O'odham (previously called the Papago), are of particular interest because in both places the federal government mandated the adoption of cattle raising by the tribes. Despite their size, both reservations had significant natural limitations on the spread of cattle grazing. In both case studies, the New Deal era is of particular interest because it was during that time that the federal government made one of its largest investments in reservation infrastructure, intending to establish the tribal economies on a self-sufficient basis. The case studies of the San Carlos Apaches and the Tohono O'odham illustrate how the New Deal contributed to the economic development of Arizona's Indian reservations. In both cases livestock raising was the primary focus of attention, and development of water resources the major effort. New Deal programs fit easily into long-standing agency plans. The New Deal was not a new direction, but it provided the resources needed to meet existing goals. Differences between the two situations appear to owe to the continuity in agency supervision. At San Carlos a single superintendent with a focused program headed the agency through most of the 1920s and 1930s. The Papago Reservation had less continuity as the agency had two superintendents at Sells during the critical early New Deal years.

*The San Carlos Apaches*

In the 1870s and 1880s, the federal government concentrated the various Apache bands in Arizona into the White Mountains area of the territory, north of the Gila River, which was subdivided into the Fort Apache and the San Carlos Reservations in 1896. Though their reservation was large, most Apaches settled in three communities—Bylas, San Carlos, and Rice—where supplies were distributed. The government regularly purchased cattle from American ranchers to distribute to the reservation Indians, most of which were slaughtered immediately for food. Some Apaches slowly managed to save a few to breed, but the government made little effort to train the Apaches in livestock raising. By 1923, about 285 Apaches owned cattle, who, as heads of households, may have represented a least half the population.<sup>97</sup>

By the end of the century, several non-Indian ranchers had secured grazing rights to reservation rangeland. The largest of these, the Chiricahua Cattle Company, had permits to graze 2,000 head of cattle on Ash Flat, but an investigation in 1899 found that the Company was actually running 12,000 head. The superintendent reported in 1913 that cattlemen turned their cattle out on the reservation and ran them off regularly to evade restrictions. Although the ranchers accused the Apaches of occasionally stealing cattle, they took no action because reservations had several compensating advantages, the most important of which was that no sheepmen or homesteaders were allowed onto the reservations. With themselves as the only non-Indians able to work on the reservations, San Carlos came "as near being [a stockman's paradise] as a cattle range could ever get to be."<sup>98</sup>

<sup>97</sup>Walker and Bufkin, 43-44; Harry T. Getty, *The San Carlos Indian Cattle Industry*, (Tucson: University of Arizona Press, Anthropological Papers No. 7, 1963), 27-28.

<sup>98</sup>This is the opinion of Henry S. Boice, later owner of the Chiricahua Cattle Co., from Edward P. Ware, *Grazing (Section Fourteen)*, WPA, Arizona Writers' Project, 1940, 3-4.

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James B. Kitch, who became the agency superintendent in 1923, believed the Apaches must become self-sufficient. He implemented a policy to remove non-Indian permittees from the reservation and to aid the Apaches to become stock raisers. By 1938, all non-Indian owned cattle was removed from the reservation. In addition, large numbers of cattle were distributed to establish several Apache herds. Kitch reported in 1926 having issued over 1,400 heifers in the previous two years and anticipated distributing 700 more in the coming year. By 1931, Kitch estimated that the number of Apache-owned cattle had increased from about 2,700 head to about 16,000. Despite this effort, Kitch remained unsatisfied with the progress of the Apache cattle business. For one thing, many Apaches did not know how or desire to work the cattle themselves. Instead, they gave them over to white stockmen to manage and collected a fee, a practice Kitch discouraged. By 1936 there were ten livestock groups with herds of cattle. Clan relations were important in determining membership in these livestock groups. Eventually these groups developed into livestock associations, receiving formal tribal council recognition in 1938.<sup>99</sup>

To attain this goal of self-sufficiency, the government encouraged the improvement of the reservation herds by distributing 600 registered Hereford heifers in 1934, obtained under the drought relief program, and the Apache tribe purchased 30 registered bulls. Unfortunately, control over breeding was sometimes lax so that their herd could not be registered until 1938. The tribe also altered its method of selling cattle. Up to the early 1930s, cattle buyers were invited to the reservation to submit sealed bids. In 1939, this method was replaced by driving cattle to the Southern Pacific scales and pens, where they were auctioned. While the government pressured the Apaches to create a livestock industry modeled after the off-reservation industry, the tribe attempted to shape the new business both to meet government imperatives and to maintain cultural cohesion. The tribal council created at least two tribal herds. The first was a registered herd created to promote better breeding. The second, created in 1938, was sometimes referred to as the "Social Security herd" because it was dedicated to support widows, orphans, and others unable to earn a living.<sup>100</sup>

The CCC gave Kitch the opportunity to develop the reservation for stockraising. New fencing helped prevent non-Indian ranchers from entering the reservation and regulated the grazing in the newly formed grazing districts. More important, the CCC developed water resources across the reservation. In the 125,000-acre range around Warm Springs, where previously there was only a single source of water for cattle, the CCC in 1934 and 1935 developed eight reservoirs and at least a dozen stock troughs fed from newly developed hillside springs. They constructed tanks at Brush Corral, Warm Springs, Junction, Juniper, Rocky Creek, Chiricahua, Freezeout, Broncho, and Ash Creek. Prior to 1933, on the north half of the Bryce-Mattice range, there was no water at all; cattle were only brought in when rainwater puddles were available. The CCC developed two reservoirs and three springs, Alkalai, Mud and Bull Springs, each of which furnished a permanent supply to cattle. Kitch also encouraged road development. In addition to these improvements, the CCC provided valuable training to enrollees and offered supervisory positions to many. Kitch believed that a CCC enrollee was "better off than anytime in their life" and he boasted of his newly trained Indian machinists, truck drivers, powdermen, foremen, and leaders.<sup>101</sup>

<sup>99</sup>Getty, 29, 35, 38.

<sup>100</sup>Ibid., 43, 48.

<sup>101</sup>Ibid., 106-08, 114-15, 121; Claude C. Cornwall, "'Mile Posts:' An ECW Story of the San Carlos Apaches," *Indians at Work*, III, September 1935, 14-16.

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In 1937 the San Carlos Apaches led all other tribes in its sales of cattle, selling nearly 12,000 head for an average of \$32. As a result, the average family income on the reservation rose to \$731. Kitch retired in 1938 and died two years later, leaving behind a tremendous legacy of improvements on the reservation. The CCC had constructed over 400 miles of boundary and range fencing, almost 100 earthen and concrete water tanks, cleared stock drives, and developed wells and springs.<sup>102</sup> Efforts to improve cattle raising on the San Carlos Reservation continued after the New Deal and by 1950, the cattle industry was well established. Despite extensive range development, the resources of the San Carlos Reservation were limited. CCC work projects help to raise the tribal cattle industry to its maximum potential, but with an ever-growing population, cattle could not bring self-sufficiency.

Significant changes in the San Carlos Apache Reservation towards the goals of economic development and tribal self-sufficiency were being pushed long before the New Deal. A competent agent, Kitch, with a long-standing program of economic development continued to serve during the 1930s and took advantage of the New Deal to further his goals. The CCC provided labor to develop ranges with roads, fences, stock tanks, and fire suppression, while drought relief programs directly supplied high quality registered breeding stock to improve the Apache herds. Important steps in the creation of grazing districts occurred in the 1930s on the reservation, as elsewhere in Arizona. These developments continued after the New Deal had passed. Although New Deal work relief programs did not move economic development in a new direction, they were important because they were one of the largest investment programs ever undertaken by the federal government to aid the Indians.

*The Tohono O'odham*

The Papago Reservation (now called Tohono O'odham Reservation) presented a great challenge to Indian Commissioner John Collier's plan to use the New Deal to develop Indian resources. The reservation of more than 2,773,000 acres is the second largest in Arizona, located in the southern part of the state adjacent to the international border and between the Baboquivari Mountains on the east and the Ajo range to the west. The Tohono O'odham once lived along the well-watered vicinity of the Santa Cruz River to the east, but their current reservation has no permanent river. Their intermediate, low-lying desert receives less than ten inches of rain per year and is little suited for agriculture. Of necessity, they have turned to cattle raising as one of the few viable ways of using their vast land. Most of the Papago Reservation was set aside by an executive order in 1916. Because of in-holdings of private land and a claim by the state for a large area, cattle raising was difficult for the Tohono because they could not graze over their reservation without crossing other jurisdictions. This situation improved in 1931 when Congress purchased some private lands and removed the state claim.<sup>103</sup>

The Tohono O'odham moved their cattle according to the season and land conditions. During the heat of the summer they stayed near the foothills. When water was available after winter or summer rains, they moved out to the low valleys. With few resources of their own, they had to rely heavily on support from the federal government to develop their reservation. During the late 1910s and 1920s, the tribe received small yearly appropriations for stock watering improvements and ground water pumping facilities for their villages. In 1928, the Secretary of the Interior reported that the reservation had earthen tanks and reservoirs to hold water for the Tohono O'odham's livestock during the dry season. The federal government also made a very small effort to improve their herds,

<sup>102</sup>Indians at Work, VI, July 1939, 18-19; VII, March 1940, 19; VI, July 1939, 20.

<sup>103</sup>Jay J. Wagoner, *History of the Cattle Industry in Southern Arizona, 1540-1940*, (Tucson: University of Arizona, 1952), 112-13.

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giving them two registered bulls in 1912. The tribe purchased another 22 registered bulls in 1914. Unfortunately, all were dead by 1920, victims of drought and neglect.<sup>104</sup>

The Tohono O'odham turned to cattle raising because there was little else that their reservation could provide them, but this proved insufficient. In May 1935, while the San Carlos Apaches sold 1,700 head for an average price of \$33.75, the Tohono O'odham sold only 865 head of cattle for an average price of \$22.71. This difference reflected the inferiority of the Papago Reservation rangeland and the progress of the Apaches in improving their herds. The Tohono O'odham also tended to sell stock in small numbers to buyers in Ajo, Casa Grande, Tucson, and Tempe, a marketing practice that did not promote high prices.

The Tohono O'odham are a medium-sized tribe in Arizona. In 1930 their population was 5,159. Theoretically, this allowed each member almost 500 acres of land. But in a land intensive business like cattle raising, this was inadequate. To prevent overgrazing, the Department of the Interior regulations limited each family to no more than 50 horses, 100 cattle, and 500 sheep. A survey in 1930 found that sixteen families held 7,900 head, well over their legal limit of 1,600. As a whole, the tribe held 17,700 livestock units for an average of 3.4 animals per person, compared to a statewide average of 2.5 animals per person. The result was severe overgrazing. The Tohono were trapped between the imperative to earn a decent living and the poor carrying capacity of the land.<sup>105</sup>

The Great Depression ushered in a new era for the Tohono O'odham. Beginning in 1934, the CCC began to systematically reorganize their land use. The reservation was divided into nine range units or districts, each fenced to regulate grazing. Those employed on the government emergency projects voted to contribute tribal funds to maintain tribal livestock associations. During 1935 alone, the CCC built 44 earthen tanks, sixteen dams, eleven storage tanks, 22 wells, and developed nine springs. Another New Deal program bought up 968 horses and burros to reduce overstocking. Land surveys began to place grazing on a more systematic basis. Other CCC projects included grass seeding and rodent extermination. The Office of Indian Affairs also tried to increase the reservation's weak water resources by acquiring adjacent, developed ranch lands. For example, in 1937, the OIA bought the 320-acre Marstellar Ranch. This developed ranch included \$5,250 in land and improvements such as barns, fencing, storage tanks, corrals and troughs, and a well.<sup>106</sup>

At the beginning of the New Deal, Joseph Elliott was the superintendent of the reservation agency at Sells. He and his assistant, A. M. Phillipson at San Xavier, were responsible for organizing the first CCC work projects. His substantial \$400,000 budget gave promise of both good employment and valuable projects. Elliott announced the beginning of enrollment at Sells and San Xavier on June 27, 1933, and by October, 891 men were engaged in a variety of projects. The new trail and lookout station at Baboquivari Peak was typical of the CCC, providing access to a remote region of the reservation and improving the fire management facilities. The criticism of this project, noted above, contributed to Elliott's replacement by Theodore Hall, who reorganized the reservation CCC program

<sup>104</sup>Ibid., 115.

<sup>105</sup>Ibid., 116-17. A livestock unit is a calculation based on the forage consumption of different animals. An average cow is the basic unit with 2.5 sheep the equivalent.

<sup>106</sup>Civilian Conservation Corps-Indian Development (CCC-ID), "Work Plays Its Part," n.d. [c. 1938].

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to cut costs. Hall lowered the number of enrollees to 300 and eliminated most of the family camps. From that point on, most enrollees worked from their homes or in small on-site camps.<sup>107</sup>

The CCC developed a comprehensive water development plan for the Papago Reservation that would supply water to improve livestock raising on approximately three million acres. The primary difficulty was that the reservation had no permanent surface streams. When storms came during the summer season, normally dry streambeds turned into torrents and flat lands turned into impassable lakes of water and mud. Storing this water for year-around use was not as simple as constructing reservoirs everywhere. Research indicated that in the extreme desert heat, as much as 100 inches of water evaporated from an exposed body of water each year, and that another 50 inches seeped into the ground. To water cattle, a reservoir had to be at least twelve feet deep. In the CCC's initial planning, emphasis was placed on developing a wide dispersion of water tanks so as to avoid concentration of cattle. Sites in the low mountains, then little used for grazing, were worked first because of their greater suitability to sizable reservoirs and to permit rotation of cattle between there and the low lands by season.

The types of works built to hold water depended on the terrain in which they were built. In the flat valley areas, where water passed in a sheet with little velocity, workers used caterpillar tractors or horse-drawn scrapers to dig a large pit, using the fill to build up wide dikes. These were referred to as "charcos" after the Spanish for pond or tank. In hilly areas, earthen dams were constructed, usually using teams and scrapers. These were constructed on tributary streams to avoid being damaged by major floods. Reservoirs in these areas could be up to 25 feet deep. In mountain areas, masonry dams were more practical because of the rock floors and walls of the desert canyons. The CCC always constructed dams of the rubble masonry type, with Indian stonemasons using cement, mortar and rock, much of which was available at the site. Such dams could be constructed almost entirely of hand labor and cost significantly less than concrete dams. Engineers noted that dams on the Papago Reservation tended to fill with sand fairly quickly, but this was not necessarily detrimental. Even when filled with sand, about a third of the volume of the reservoir was available for water, and the sand both reduced evaporation and acted as a filter. Such reservoirs provided clean water for cattle even though they appeared to be dry. Beyond the range of captive water flow, the CCC worked to develop groundwater wells and tanks. Most of these used windmill pumps, others gasoline motors. From the top of Baboquivari Peak, tanks and reservoirs could be seen shimmering across the reservation with checkerboard regularity.<sup>108</sup>

Fencing, road, and revegetation projects all contributed to the improvement of the reservation for cattle raising. Of course, the CCC did not have the manpower to fully improve the entire extant of the reservation. Selected areas, such as near San Miguel received concentrated effort which included fencing, terracing, and revegetation. Claude C. Cornwall, the CCC's district supervisor, stated the goals as "sustained yield," a careful balance of the number of cattle with the water and faunal resources of the land. These developments maximized the efficiency of the range while trying to avoid unnecessary depletion. Their general success could be seen in the spread of cattle ownership over a greater portion of the tribal population. In 1939, about 1,325 Tohono O'odham, out of

<sup>107</sup>Booth, "Cactizonian," 307-08. Hall was a Choctaw Indian and a native of Whitefield, Oklahoma. He spent several years as a public school teacher before joining the Indian Service in 1933 as a field clerk at the Osage agency. That same year he was assigned to Leupp as superintendent, then transferred to Sells the following year. He left Arizona in 1939 to become superintendent at the Osage Reservation [*Indians at Work*, VIII, December 1940, 23].

<sup>108</sup>S. W. R. Thompson, "IECW Range Development," *Indians at Work*, III, September 1935, 23-27.

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approximately 6,000, were livestock owners, an increase of 133 percent from 1934. The value of sales of cattle more than doubled between 1936 and 1939, from \$102,947 to \$222,638.<sup>109</sup>

After developing water resources, the next job for the CCC's range development program was to control brush and grass fires. The first step towards this goal was the construction of a forester's cabin to serve as a project headquarters. This was followed by constructing truck and horse trails to improve transportation for fire control, and then a lookout tower with a connecting telephone line to the forester's cabin and the agency headquarters. Elliott approved Baboquivari Peak with its commanding view of virtually the entire reservation for the site of the lookout. One hundred Indians from the Tohono O'odham, Quechan, Cherokee, Pima, and Maricopa tribes arrived at Camp "Babo" on July 5, 1933 and began their work. They first developed a nearby spring to provide their water, then began constructing the forester's cabin at the foot of the peak 22 miles southeast of Sells. This was followed by improvements to the approximately 4.5 mile trail to the top of the peak and construction of the lookout. A year after the start of work, on July 6, 1934, the lookout spotted its first fire.<sup>110</sup>

Development of wells and other water resources was one of the most important project types for the CCC. Tohono workers erected windmills and constructed tanks at Sells, Walls Well, and Covered Wells Mission. While the Tohono O'odham usually appreciated the benefit of these water projects, not all aspects of the land improvement program met with their universal approval. Soil erosion advisors were convinced of the necessity of removing excessive livestock, particularly horses, which had little market. Efforts to remove rodents appeared ridiculous to some, while cutting down mesquite trees seemed counterproductive. The government wanted to remove mesquite and restore the grassland environment that preceded the introduction of cattle. The Indians knew that the cattle ate the mesquite beans, and that people used the wood for fire and fences. The government told them that rodents should be removed to prevent loss of grass, but at least some Indians did not believe them, attributing the lack of grass to the current drought. Ultimately, the agents of the New Deal had the money and authority and those who wished the benefit of employment had to follow their guidelines.<sup>111</sup>

By 1938, the CCC's peak employment had passed. To maximize employment, Hall allocated his entire CCC allotment to meet the enrollee payroll. This left no money for equipment and materials, the agency's projects shifted from well digging and road construction to maintenance and upkeep. While the CCC projects improved conditions on the reservation temporarily, they could not change the basic fact that the land was a desert that simply could not provide for enough livestock to support the entire population. The immediate impact of the CCC on the Tohono O'odham was so large that many looked back on it as the "CCC Era." Its greatest achievement was relief for the emergency at hand. No range improvements could have raised cattle raising to an adequate support for the entire, growing population of the reservation. The New Deal also loosened the ties of young tribal members to their immediate communities, provided them with training, and introduced many to wage employment. This was fortunate for when a severe dry period in 1948-49 devastated the reservation livestock industry, despite all the previous improvements, the tribal council in 1949 approved a plan to place the tribal economy on three legs.

<sup>109</sup> *Indians at Work*, III, November 1, 1935, 41; VIII, December 1940, 9, 23.

<sup>110</sup> Harris H. Roberts, "Remaking a Reservation - IECW - Part I," *Indians at Work*, II, December 1, 1934, 18-24.

<sup>111</sup> *Indians at Work*, III, August 15, 50; Peter Blaine, Sr., (as told to Michael S. Adams), *Papagos and Politics*, (Tucson: Arizona Historical Society, 1981), 76-77.

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About a third were to go into farming, a third remain as livestock growers, and the rest to seek employment elsewhere.<sup>112</sup>

As these case studies argue, the development of economic resources of the San Carlos and Papago Reservations reflected both continuities and innovation. Broadly, the continuity was in the general desire of Office of Indian Affairs officials to improve the economic lot of the Indians and their primary strategy of improving the tribal cattle industries. By the beginning of the New Deal, the San Carlos Apaches had made significant strides towards accomplishing that goal, while the Tohono O'odham lagged. The New Deal presented both tribes with vast resources that helped stretch their water and range resources to the limit of their capacity. The change was somewhat more dramatic for the Tohono O'odham only because less had been done for them previously. The New Deal was an innovation in federal-Indian relations because it instituted a large-scale program of investment in the tribes and their land. Few periods offer a comparable program of development.

<sup>112</sup>Booth, "Cactizonian," 321, 324-35.

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### SOUTHERN ARIZONA RANCH HOUSES ARCHITECTURAL CONTEXT

The cattle ranching contexts developed above explored ranching as part of the broad pattern of events that have shaped the development of Arizona. Also noted have been some important persons with significant associations with cattle ranching. This context, and the three that follow, consider aspects of the architecture of ranching. These contexts can be used as a basis for understanding and evaluating the significance of several ranching property types under National Register Criterion C.

Janet Ann Stewart has written extensively on the architectural development of ranch houses in southern Arizona. Her University of Arizona master's thesis, a *Journal of Arizona History* article (Winter, 1970), and her book, *Arizona Ranch Houses: Southern Territorial Styles, 1867-1900*, effectively write the architectural context of these properties, at least for a restricted place and time. These works are summarized below in a mini-architectural context statement.

Although there is a significant discontinuity in cattle raising in southern Arizona between the Spanish-Mexican eras and the pioneer American era, that discontinuity is greatly blurred by the persistence of Spanish-Mexican building traditions. Early Arizona cattlemen, many from New Mexico and Texas had absorbed many cultural practices of Mexican stockmen. This was reinforced by the revival of cattle raising by Hispanic Arizonans as the Indians were slowly subjugated. The influential role of Mexican-Americans, adoption of Spanish-Mexican cattle culture by Anglo-Americans, and the isolation of southern Arizona from mainstream American building trends worked to create a distinctive southern Arizona ranch house evolution.

The Spanish brought into Arizona their ancient Iberian building traditions. Structurally, their common houses were plain, geometric forms of adobe and beams. A frontier ranch house of the Spanish-Mexican era would have looked nothing like the grand mission buildings, of which San Xavier del Bac is the supreme representative. That building—actually of brick—is a distant reflection of Spanish baroque high style. Common buildings like those built in Pimería Alta would have reflected the adobe tradition modified to some extent by local conditions. For example, a Spanish ranchero in Arizona might have modified the form for defense with, perhaps, smaller window openings and thicker walls. The size of rooms is largely determined by the kind of roofing structural materials available. The basic Sonoran form simply placed round or squared beams called *vigas* on the adobe walls. Over the *vigas* are placed saguaro ribs or ocotillo stalks which hold up the dirt roof. Reflecting urban building preferences, ranch houses often adopted the *zaguan* plan which left a gate or corridor between two separate rooms. In its urban model, the *zaguan* plan would have opened out to a courtyard or private open space.

The ideal model of the Mexican rancho is the hacienda. The hacienda is an expression of earlier Mediterranean building forms. The Spanish carried with them to the New World ideas not only about how individual buildings should look, but how towns ought to be planed. The hacienda evolved loosely from the urban town plans enunciated in the Law of the Indies. On a hacienda, the main house served as the focal point and other buildings—the chapel, storehouses, corrals, and shacks—spread out like a miniature town. Stewart notes that in Arizona, ranch houses only vaguely resembled a real hacienda. The farther one went from central Mexico, the more simplified and reduced was the scale of ranch development.

Early pioneer American ranchers adopted many of the features of Spanish-Mexican building traditions. In part this was of necessity. Adobe was simply the most available building material. Lack of wealth also prevented much departure from simple forms. Several early American ranch houses display this cross-cultural reference including the Babocomari ranch house (1887) near Elgin, the Bellota ranch house (1890) near Redington, and (perhaps) the original La Osa House (1889) near Sasabe. Pete Kitchen's ranch house creates something like a courtyard although the building itself is only L-shaped. A wall extended beyond the house to form the courtyard patio. As a

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native of Sonora, Emilio Carrillo built his Tanque Verde ranch house from his native vernacular traditions. The house had three rooms forming an L which formed part of a courtyard patio. Carrillo went to the expense of having a wood floor installed in one room, an almost unprecedented luxury up to that time. Both of these houses were constructed with parapet walls surrounding the roof and extra thick walls for defense.

Henry Hooker began a new era in ranch house development when he laid out his Sierra Bonita ranch as a true hacienda. Hooker was a man of means and the needs of defense were less in 1872 when construction began. The original house surrounded three sides of a long, rectangular patio, the fourth side being an enclosing wall. Today, the Sierra Bonita ranch house has been much added on to, something that has happened to many ranch buildings. It reflects the full adoption by Anglo-Americans of the Spanish-Mexican plan as not only a practical design, but an aesthetically pleasing one as well.

The railroad disrupted this evolution of building styles. Easier transportation suddenly opened up the house builder's world to other building materials like dimensioned lumber and brick. It became possible for a rancher of means to ignore local traditions and construct "American" style buildings. This cultural chauvinism reflected the felt need to make Arizona seem more like the rest of the country so that it could achieve statehood. Colin Cameron's San Rafael ranch house is a brick, three-story building whose elevated main floor and surrounding porch recalls the South.

Between the extremes of ranch houses built by Mexicans-become-Americans within their traditional styles to the ignoring of old forms by newcomers are a number of transitional forms. Houses like those found at Faraway Ranch and San Bernardino ranch retain elements of Spanish-Mexican style, typically in the use of adobe, but abandon flat roofs and add hipped and pyramidal roofs that extend over the walls as porches. These hybrids are sometimes referred to as "Territorial" style, but are more precisely styles in flux. French Colonial Revival was a natural import since so many ranchers had roots in the South. Local necessity both in materials and with who was doing the actual construction modified the carried cultural traditions of what a house ought to look like.

It was not too many years after the construction of the San Rafael ranch house that there began a return to regional design references. Robert Gray's Dos Lomitas ranch house is an early example. Gray hired Mexican laborers and deliberately chose to build a Sonoran-looking house that would appear more "natural" in the desert landscape of the Sonoran desert. While Dos Lomitas is a simple and small building, there continued a trend towards romanticism. One of its highest expressions is the Kinjockity Ranch house built in the 1930s as a show-piece of the Pueblo Revival style. In this instance, the well-to-do owner of this hobby ranch chose the vague references of the Pueblo Indians as his theme, but still reflecting what was believed to be a more Arizona style. Period revival styles are noteworthy, but they reflect only a small portion of post-1900 ranch houses. The majority of Anglo-American ranchers continued to follow contemporary styles such as the Bungalow and later Minimal Traditional and Ranch styles.

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**NORTHERN ARIZONA VERNACULAR LOG BUILDINGS ARCHITECTURAL CONTEXT**

Janet Stewart's valuable work on southern Arizona ranch houses makes more glaring the lack of a similar study of ranch house development in northern Arizona. Fortunately, enough is known to outline at least part of an architectural context for northern portion of the state. This short overview on vernacular log buildings is derived from Johns & Strittmatter, Inc.'s *Historic Resources Inventory of Pine, Arizona* (1996). Unlike the south, northern Arizona received little cultural influence from the Spanish-Mexican eras. The region was well beyond the frontier of Pimería Alta. Although native pueblo architecture thrived, incoming ranchers made no architectural reference to those communal structures. Instead, Anglo-Americans entered a land well wooded compared to the south. When they entered the forest, these pioneers drew on a cultural experience that dated back to the first European settlers exploring beyond the colonial Atlantic coastline.

By the time they reached Arizona, American pioneers carried in their cultural baggage a set of building practices for log buildings. The log cabin is almost a cultural icon, a building that nearly anyone can visualize. This shared, cultural image of the way a frontier house in the forest ought to look actually represents generations of practice and change. The term "vernacular" can be used to describe any building whose design is a result of common assumptions about the way the building should be. Vernacular architecture is not designed by formally trained architects, nor is it the product of formal building plans. The log cabin summons up a common vision—like a one-room schoolhouse or a barn—one on which almost anyone could draw to design a building. Log cabins were the product of individuals and families having to put up shelters in wooded environments where cut lumber was impossible to obtain and speed was often of the essence.



Log ranch house at Horse Valley Ranch. SHPO photo collection.

American log construction methods have their origins in wooded parts of Europe such as Germany and Scandinavia. German settlers in Pennsylvania probably transferred their inherited ideas to the colonists of other nations, particularly the English, Welsh, and Scotch-Irish. German and subsequent American log construction utilized logs notched towards the end to allow them to rest on top of each other. Often these logs were squared to split to allow them to rest more evenly on each other. The space between the logs was "chinked" or filled in with some material like mud to cut off unwanted circulation. Logs were often left round where the builder was in a hurry or for simple outbuildings. The logs might be left with the bark on or peeled depending on the finish the builder desired. In pre-industrial America, when nails were still hand-made, a log cabin using no nails or spikes was particularly practical for the typical poor pioneer.

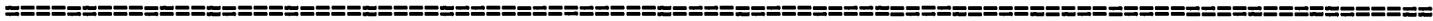
One of the most distinctive features of log construction is different ways to cut notches. It is the notch that holds the logs together and actually bears their weight as they typically do not set fully on top of each other. In fact, contrary to what one might first think, the weight of a log is not born by the log immediately below it, but by the log below the notch on the other wall. The simplest notch and the one most often used on round logs is the saddle notch. The saddle notch is a rounded coving of the log so that it rests smoothly over the curvature of the lower log. A log might have a single saddle notch or two. Square notching requires a higher degree of skill to accomplish, as do other notches like the dovetail, V-notch, and diamond notch. The reward for the greater effort

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in cutting notches is a sturdier building. The round notch could probably be accomplished by just about anyone with an ax. More complex notches required specialized tools like the adz or even some milling.

A log building, especially an outbuilding, having only a dirt floor, would likely have no foundation. The bottom log, called the sill log, was laid directly on the ground. If a wooden floor was wanted, a foundation of either stone or vertically set logs at the corners would first be set. The finish of a building depended on its use, the skills and tools of its builder, and the amount of time that could be invested in its construction. Houses usually were better constructed than barns, sheds, or outhouses. Stronger notches might be cut on the house and the ends of the logs evened to give it a better look. Whether a log building has a foundation or not is very important for preservationists. Logs in contact with the ground will certainly suffer more from water related rotting and insects. It is not unusual for sill logs to have to be replaced during a restoration.

Several Arizona log buildings have been listed in the National Register, including the simple, vernacular Dunning Log Cabin in Prescott and the Rustic romanticism of El Tovar at the Grand Canyon. Perhaps the best example of log buildings in a ranch-related context is Fern Mountain Ranch near Flagstaff. This ranch, now preserved by the Nature Conservancy, reflects how a ranch developed using the woodland materials around it. It is a distinctive northern Arizona ranch type. Log construction is also used at Hull Cabin, Horse Valley Ranch, and the Colter Ranch Historic District. The main house at Horse Valley Ranch illustrates an unusual construction method, one that does not use notches. Built ca. 1918-1920, it has what are called "hog-trough" corners where the logs don't actually connect. Instead, the logs on each wall are sawn smooth and stabilized with a length of milled lumber. This was perhaps a much less time-consuming construction method than cutting notches, but it is probably less stable.

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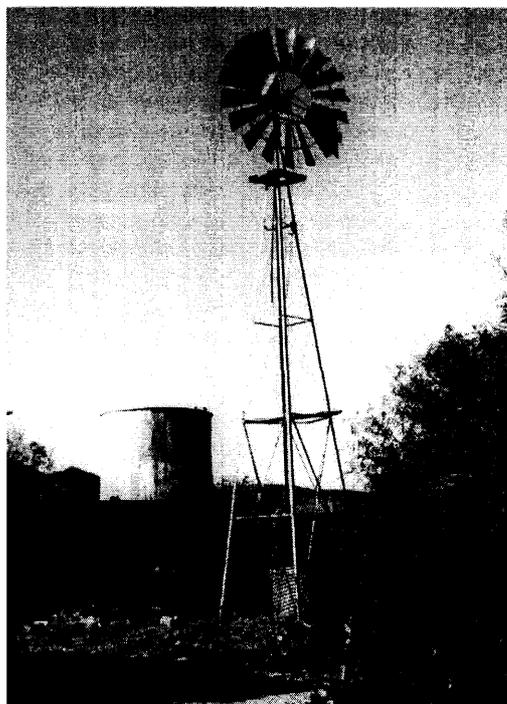
**WINDMILL DESIGN ARCHITECTURAL CONTEXT<sup>113</sup>**

The windmill is one of the most visually distinct property types associated with ranching in Arizona. Whether found in a ranch complex or isolated on a barren landscape, windmills provided a necessary technology to overcome the arid environment by drawing up ground water for cattle. The windmill allowed ranchers to range far beyond the limited course of reliable surface water. Windmills still find modern favor simply because they require less attention to their operation, a crucial factor considering that they are spread out over thousands of square miles.

The concept of using the power of the wind to drive machinery dates back at least to early medieval times. As the name implies, they were originally built to turn grinding stones in grain mills. Europeans developed a tremendous variety of designs over the centuries, one of the most famous being the classic Dutch windmill. The principle behind them is relatively simple—a set of sails or fan blades is turned by the wind in a vertical plan which turns a horizontal shaft. This rotational energy is transferred by gears and shafts into the rotation of the grindstone (or water pump or generator). Technological developments revolved around the most efficient blades to capture the wind, speed governing systems, and ways to prevent damage from high winds. Many windmills operated in substantial buildings housing all of the mill works.

The Dutch were among the first to use windmills to move water. By using the wind to turn a scoop wheel or an Archimedean screw they lifted water to drain land for agricultural use. This need to drain land accounts for the prominence of the windmill in Holland and the Netherlands. The Dutch also pioneered in the use of wind power for other industrial uses. The earliest wind-driven sawmill dates back to the late 16<sup>th</sup> century. Wind power did not prove quite the spur to early industrial development in the Low Countries and England as water power primarily because it is both less reliable and less powerful.

The British began experimenting with windmills to drive water pumps, but it was the Americans who developed this into its primary use and who modified its support structure and design to maximize pumping power. The wind-driven pump has its greatest value in the open and arid lands of the American West where surface water is insufficient to supply agriculture or to maximize livestock production. The historian, Walter Prescott Webb, credited the windmill as one of the crucial inventions (along with barbed wire, the Colt revolver, and the railroad) with the successful settlement of the arid West. The unique problems facing windmill design in the West were how to get the pump started and continue operating in a light wind, how to turn it to face winds from any direction, and how to govern their speed or even stop when the wind blew too hard.



Windmill at Bates Well, Organ Pipe National Monument. SHPO photo collection.

Early windmills in the West date back to the 1850s. That decade saw a number of technological innovations with over

<sup>113</sup> The context in this section is a summary of Richard L. Hill, *Power from Wind: A History of Windmill Technology*, (Cambridge University Press, 1994).

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fifty new designs submitted to the U.S. Patent Office. In about 1853, Daniel Halladay set out to design a self-regulating windmill that would turn into the wind by itself and also regulate its speed to as not to be damaged by high winds. The solution to the first problem was to attach a wind vane behind the blades and mount the blades and vane on a pivoting radial rod in a central casting. The governing system progressively turned the blades out of the wind as the wind speed increased. The design was manufactured by the Halladay Wind Mill Company, which was later incorporated into the U.S. Wind Engine Company operating out of Chicago. The basic Halladay design was modified little for many decades and the type became common in the West.

Competitors offered different technical solutions to windmill problems. Leonard H. Wheeler worked from 1866 to 1868 designing another influential model. His windmill incorporated a new governing system that connected the vane to a hinge so that it could move into a parallel position with the rotor. Under normal winds the vane was kept away from the rotor by a weight or spring. Wheeler added a second vane, smaller and fixed, along the plane of the wind blades. As the wind picked up, it would push against this smaller vane and begin to turn the rotor out of the wind. This also pushed the larger vane into the wind creating an opposing force. The combination of the wind pushing against two opposing vanes and the force of the weight or spring came into balance with the blades at a safe angle to the wind. While Wheeler's two-vane governor worked well and was copied by competitors, a single vane design arose by off-placing the axle of the rotor to one side of the centerline of the main pivot. Higher winds then forced the whole mill to turn. Who invented this design is not clear.

These early windmills were primarily built of wood. In 1872, J.S. Risdon of Illinois patented the first all-steel windmill and began to market them in 1876. Called the Iron Turbine, it was manufactured by the firm of Mast, Foss, and Company of Ohio. The design also incorporated buckets instead of straight blades which the company claimed gave "more power than any other wind wheel of the same diameter on the market." The Iron Turbine was a great success and proved much more durable than its wooden competitors. Still, wooden mills remained popular, perhaps because of lower costs, well into the 20<sup>th</sup> century. Innovations in design continued as hundreds of rims arose from 1880 to 1910. Experimentation improved the efficiency of the blade design, gear mechanisms were added that eventually became enclosed and self-oiling.

The slow replacement of wood with steel was facilitated by design experiments conducted by Thomas O. Perry in 1882-83. Perry, an employee of the U.S. Wind Engine and Pump Company spent over a year conducting over five thousand tests on over fifty different types of rotors. Many windmill designers had used what they thought was common sense and tried to increase the power of the windmill by increasing the surface area of the blades. By overlapping the blades, the total blade area was greater than the annular area they rotated within. Perry empirically found that power efficiency was maximized where the blade area was only about 75 percent of the annular area. Other test results found that it was better to have fewer large blades, than many narrow ones. In one test, a wheel with six blades gave 2.5 times the efficiency of another with 60 blades. At the end of his experiments, Perry had a new design for a steel rotor that was 87 percent more efficient than previous wooden ones. When the U.S. Wind Engine and Pump Company refused to back the new design, Perry and an entrepreneur, La Verne W. Noyes, formed their own company and began to market the design they named the Aeromotor. Perry's Aeromotor also proved versatile enough to be modified for special purpose uses, an important marketing advantage. Aeromotor windmills continued to be produced into the 1980s.

Whether wood or metal, the gears and shafts of any windmill required periodic maintenance. One of the important jobs of a cowboy was to make sure that all of the ranch's windmills were properly lubricated. This might involve having to regularly climb on top of the mill to check its oil level. Manufacturers competed to come up with designs to minimize this chore. The Aeromotor Company, for example, had a tilting tower with the top portion hinged so it could be lowered for servicing. Another way to reduce windmill climbing was to put a larger oil reservoir on top with a valve that could be operated from the ground to release the oil. The Elgin Wind Power and Pump Company

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introduced an important innovation in 1906 with its enclosed bearings and shafts with enough oil to last over a year. Further developments led to the total enclosure of all moving parts, bathed in an oil bath, so that they were essentially self-oiling. The Elgin Wind Power and Pump Company successfully sold its self-oiling designs up to World War II.

One windmill has been recognized by the National Register individually for its historical significance—the Iron Turbine windmill now standing on the grounds of the Sharlot Hall Museum in Prescott. It is the only known surviving example of the first mass-produced all-metal windmill in Arizona and perhaps in the United States. It was nominated to the Register under Criterion C for the significance of its historical design. The National Park Service has made an important contribution to the preservation of historic ranches with its nomination of ranching properties associated with the Robert Gray family in Organ Pipe Cactus National Monument. Its nominations recognize the significance of preserving complexes of buildings and structures in order to fully illustrate the nature of a working ranch. Windmills have been a part of two of these nominations. There are contributing windmills and wells at Dos Lomitas Ranch and at Bates Well. The Sun-Up Ranch nomination also has a contributing windmill.

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**BARBED WIRE FENCING AND CATTLE GUARD DESIGN ARCHITECTURAL CONTEXT<sup>114</sup>**

The practice of tending livestock has many cultural variations. One of these revolves around the use of fencing to control the movement of livestock. Some cultures, such as nomadic people, do not use fences as that would hinder their movement across the land. In the pioneer American West, the situation was similar. Cattlemen needed access to vast acreages to graze their herds. The open range system in America was promoted by the fact that practically all of the land cattlemen used in the early period was public domain. There was also the fact that fencing up to the 1870s was an expensive investment in the land. In Europe and the American West, fences delineated property lines and controlled the movement of people and animals. Stone, wood, and hedges were common fencing materials; all required a great deal of labor and expense to put up. On the frontier, fences often cost more than the rest of the farm, hence animals tended to be allowed to roam more or less free.

The technological breakthrough came in 1873 with the invention of double-twist barbed wire (patented by Joseph Glidden in 1874). In its first year of production, just ten miles of this barbed wire was sold, but in following years tens of thousands of miles of wire were sold. It was in the Great Plains and Far West that barbed wire quickly proved its worth. Ranchers in particular were eager to give up open range ranching and began stringing thousands of miles of barbed wire. With fences, or course, came the need for gates. The simplest gage was simply lengths of barbed wire attached to a pole to latch to the fence post. Problems began to arise as ranchers and other rural people began having to go through more and more gates. One was simply the time it took to dismount, open the gate, move through the gate, and close it. While this might not seem a major chore, if one had to go through several gates during a day it eventually amounted to a considerable quantity of time. The problem became particularly serious during the early twentieth century when automobiles became increasingly prevalent. The following anecdote by an old cowhand, Glenn Ohrlin, describes what a typical Arizona cattleman thought about gates:

In the summer of 1943 I was working for the Rabbit Ears brand (Mullins and Dozier) at Kingman, Arizona. We were hauling fence posts about 100 miles from some mountains southwest of Seligman. There were several gates to open on one route home and no brakes on the truck. I road the sunning board while the driver, Jack Mullins, slowed down the best he could in second gear. I'd jump off and run like hell to the gate and open it. (All down hill this way.) We finally wrecked one gate and eventually the truck. We sure could have used some cattle guards on that road.

Gates that were too taut could also be difficult to close, especially for women and children. Throughout the country, ranchers experimented on new gates that would be easier to operate and require less time to pass. An ingenious assortment of automatic gates appeared, but none proved satisfactory. The answer proved to be the cattle guard, a device that allows a permanent opening in the fence over which humans and vehicles can pass, but which frightens livestock.

No one knows who invented the cattle guard; it was probably devised in several places at the same time. It was common knowledge that cattle are afraid of pits. One could dig a pit in an opening in a fence and cattle would not pass through. That left the problem of how to get a vehicle over the pit. One method was to build wheel troughs over the pit that were just wide enough to hold the automobile. Another method used a series of spaced bars, something like a ladder for each side of the automobile, laid over the pit to drive over. Some did not want to dig a pit and so built a little bridge or overpass over the fence. This worked for small, light vehicles like the Model T, but

<sup>114</sup> This section is a summary of information found in James F. Hoy, *The Cattle Guard: Its History and Lore*, (Lawrence: University Press of Kansas, 1982).

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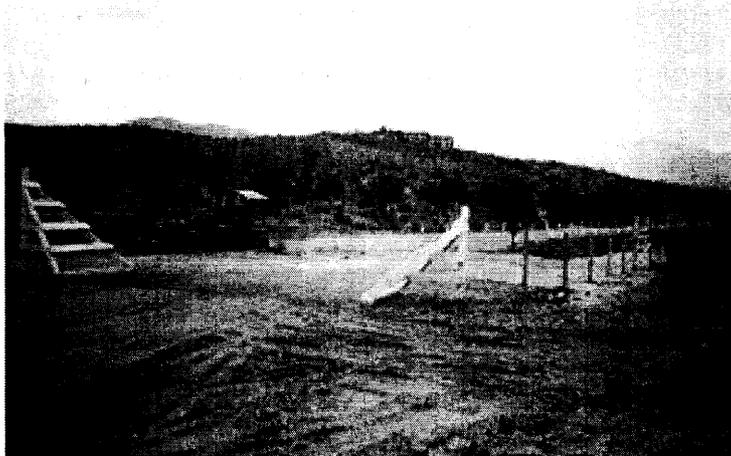
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as cars and trucks became heavier and people wanted to drive faster, these little overpasses quickly became obsolete.

Perhaps inspired by railroad cattle guards, rural people eventually settled on the pit-and-pole or bar-grill design. This is the common type of cattle guard that most everyone has rattled their car over. It consists generally of a pit of varying depth and a grill or lattice of wood, piping, rails, or concrete. For whatever reason, cattle are afraid to cross over this grill. On many modern roads, county and state highway departments place heavy-duty cattle guards that can handle very large vehicles. Since about 1960, Arizona has also used simple painted stripes across roads whose visual effect also tends to scare livestock from crossing.

By 1920, automobiles were already an important presence in rural Arizona. The U.S. Department of Agriculture's *Yearbook* for 1920 and 1921 reported that in 1919 there were 28,919 registered automobiles in Arizona. Over 45 percent of Arizona farms had automobiles, over five percent had trucks, and over eight had tractors. Wherever possible, ranchers preferred to replace gates with cattle guards. Many of these they would have built themselves out of the material they had or could afford. Metal pipe or rails were more durable, but lumber was far cheaper.



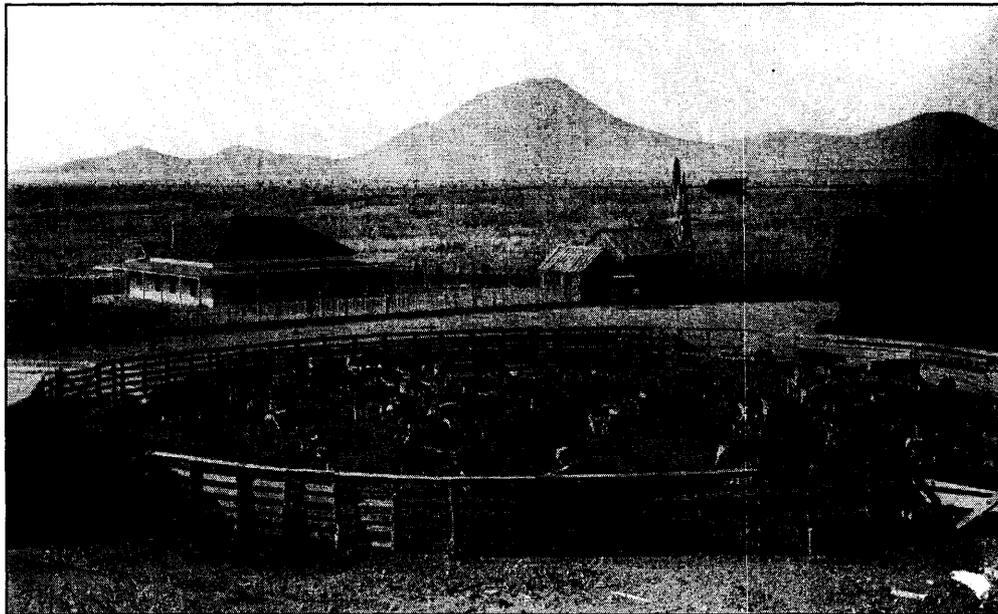
Cattle guard along Highway 82, under construction by workers of the Federal Emergency Relief Administration, 1935. Arizona State Library, Archives and Public Records, History and Archives Division.

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Cattle Ranch. Arizona State Library, Archives and Public Records, History and Archives Division.

**PROPERTY TYPES**

This section describes the kinds of properties associated with cattle ranching that may be considered potentially worthy of preservation. The criteria of the National Register of Historic Places are applied to these property types in order to provide guidelines for evaluating eligibility of these property types to the register. The following list includes many properties commonly associated with cattle ranching.

1. Ranch Houses
2. Watering Facilities and Windmills
3. Fences and Cattle Guards
4. Stockyards
5. Auxiliary Ranch Buildings and Structures
6. Line Camps
7. Agricultural Fields, Orchards, and Other Agricultural Features
8. Miscellaneous Features
9. Ranch Districts
10. Ranch Landscapes

While the criteria for evaluation will provide guidance in determining which properties may be considered eligible for the National Register individually, it is expected that the eligibility of most properties will depend on their context within ranch districts. Districts contain a significant concentration, linkage, or continuity of sites, buildings,

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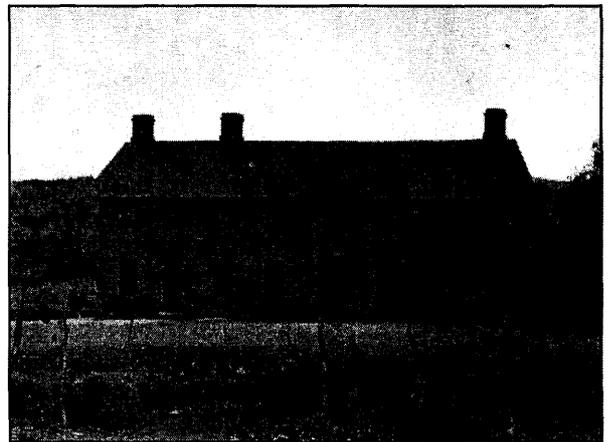
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structures, or objects united historically or aesthetically by plan or physical development. Some ranching properties not individually significant may be considered eligible if they are part of a larger concentration of buildings, structures, objects, or sites that convey significant aspects of ranching history. Because of the size of many historic ranches, ranch districts create unique challenges in applying the National Register criteria. A historic ranch may have encompassed many thousands of acres and many of its individual buildings and structures may have been isolated. How such properties might convey a larger story of ranching will be discussed below. Cattle ranching's use of the land is another unique aspect of its history. In most ranches, only a fairly small proportion of the land is intensely developed with buildings, structures, fields, and other property types. Most ranch acreage is simply left relatively undeveloped and the cattle allowed to graze. Isolated properties such as stock tanks, fences, and cattle guards often provide the only evidence that the land is a ranch. However, it would be a mistake to classify rangelands as completely natural. Cattle have grazed throughout Arizona for more than a century and it has been demonstrated that many changes in flora and fauna have resulted. Because ranching has altered the land in fundamental ways, it is important to consider whether some historic ranches may be classified as rural historic landscapes.

1. Ranch Houses

Description: The ranch house is the building that served as the primary residence of the owner or operator. In addition to serving as a house, the ranch house typically also served as the business office of the ranch. This dual function makes the ranch house the focal point of the ranch. Because they were many times the residence of family, the ranch house was often the most substantial building in terms of size, workmanship, and style. A great variety of styles characterize ranch houses. Some are vernacular in their use of local materials, simple workmanship, and cultural character; others are ostentatious displays of wealth. This property type most often fits the National Register functional category of domestic, with the subcategory of single dwelling. National Register significance category would usually be agriculture, although there will certainly arise opportunities to apply architecture, and others as well.



Fort Rock Ranch, Yavapai County, 1913. Arizona State Library, Archives and Public Records, History and Archives Division.

Significance: These properties are associated primarily with the context of cattle ranching and must relate in a significant way. Most of these properties would be considered eligible under Criterion A for their association with the broad pattern of cattle ranching history in Arizona. Some properties might be considered eligible under Criterion B for association with a person important in the history of cattle ranching. The Pete Kitchen ranch house, for example is a property with an association with an important person in the history of southern Arizona ranching in the early 1860s. A ranch house could also be considered eligible under criterion C as a typical, representative, or outstanding example of domestic architecture or design. The Kinjockity Ranch House is a listed property that is an outstanding example of Pueblo Revival architecture. A ranch house may also be considered eligible under Criterion D if it has yielded, or has the potential to yield, important information about the history of cattle ranching. There are no standing buildings related to cattle ranching in the Spanish or Mexican eras of Arizona's history, but there may be archaeological sites of former ranch houses that may contain information retrievable through archaeological methods.

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**Registration Requirements:** The first requirement that a property must meet to be eligible for listing in the National Register is that it have significance under one or more of the criteria. Given that a particular property may have significance, it must also have integrity as well. Integrity is the ability of a property to convey its significance. Under Criteria A, B, and C, this usually means the ability to *visually* convey its significance. The National Register defines seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. A property with enough integrity in one or more of these aspects to convey its significance may be eligible. Determining which of these aspects are most important to a particular property requires knowing why, where, and when the property is significant.

The ruin of a Spanish colonial era ranch house may be a property that is significant under Criterion D. As a ruin it may retain little or no integrity of design or workmanship; its setting and feeling may have changed greatly over the intervening centuries. The property may, however, be eligible if it retains integrity of materials, location, and association so that it may yield important information to the proper methods. In Arizona, sites positively associated with the Spanish colonial era are very rare and our knowledge of that time period is so limited that it is likely that any such site whose association can be demonstrated will be eligible as long as it retains historic period material in their historic location.

Eligibility under one or more of the other criteria of significance will require a broader evaluation of all seven aspects of integrity. For a property significant under Criterion C, integrity of design will be very important. Integrity of design will perhaps be of less importance for a house associated simply with the broad pattern of the history of cattle ranching. Location will usually be important in any evaluation of eligibility. Although the National Register has guidelines under Criterion Consideration B for how relocated properties may be eligible for listing, in most cases a ranch house that has been moved will be ineligible for listing. Integrity of setting may or may not be of great significance depending on how the property's significance is defined. As an example, the small log cabin in which Arizona's first senator, William F. Ashurst was born has been relocated from its forest setting in northern Arizona to a new site in the desert near Phoenix. Not only has it lost integrity of location, but also the setting has been so altered that its significance as a log building or even as the birthplace of one of northern Arizona's most prominent politicians is difficult to convey.

It is extremely rare for a historic ranch house to have survived to the present time with no alterations or deterioration. Perfect integrity, therefore, is very unlikely. Alterations such as replacement of historic materials in windows or the roof are not unusual. It is also common to find ranch houses that have had substantial additions made to them over the years. The evaluation of such properties' integrity will depend, again, on the definition of their significance. A log cabin that was a ranch house may be significant under Criterion C as an example of vernacular architecture, but it will not be eligible if it has been sheathed with an inappropriate material that hides its materials and design. On the other hand, there may be examples of historically significant ranch houses that were built as the result of a number of additions to an early, small building. If these additions fall within the defined period of significance, then the property may be eligible.



Manzo Ranch, concrete water tank. Arizona State Library, Archives, and Public Records, History and Archives Division.

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2. Watering Facilities and Windmills

These properties are described as structures and places where water is taken from the ground for use by cattle or by people. Natural springs are places where water comes to the surface without artificial power. Springs may have improvements to make them more serviceable to cattle. A well is a dug or drilled hole that provides access to ground water. A windmill is particular device for pumping water out of the ground. Not all wells will have windmills, but they are a fairly common combination that can be found throughout the state. The property type meets the National Register functional category of Agriculture/Subsistence with the subcategories of energy facility and water works. The National Register significance categories would include primarily Agriculture, but may also include Engineering.

Subtype: Springs

A spring is a naturally occurring place where water comes to the surface without the aid of pumps. In much of Arizona, where the land is arid, a natural spring is a tremendously valuable resource. In pioneer times, the location of springs often determined the location of ranches and limited the extent of grazing. Pipe Spring National Monument is an example of a pioneer fort built literally over a spring to guard its valuable issue. It was not unusual for a rancher to make improvements around a spring in order to minimize water loss or to transfer water to stock tanks. In the Seven Springs area north of Phoenix, concrete channels were constructed to carry off a portion of the issuing water for use by cattle.

Subtype: Wells

A well is a place where water is drawn up from the ground for use. It differs from a spring in that it is not a natural occurrence and usually is made be either digging or drilling a hole into the ground. The simplest well is little more than a deep hole into which groundwater seeps. The image of a well as a hole where water is drawn up with a bucket secured to a small pulley built over the well is well known, but such wells are rare in Arizona. More often, wells are drilled deep into the ground and a pipe connects the groundwater to the surface. Furthermore, most wells have to have some sort of pump to draw up the water. The twentieth century introduced electric and gas powered pumps, many wells depend on the power of the wind to draw up water.

Subtype: Windmills

As described in the context above, windmills are a common means for powering pumps, particularly in isolated areas where other sources of power are difficult to obtain. A windmill is a structure with large fan blades that are turned by the wind. This rotational energy is transmitted through gears and shafts to the pump which draws up the water.

Subtype: Well house

A well house is a structure built over a well to protect it from the elements. A well house may also function as a storage shed.

Subtype: Water tank

A water tank is a structure built to hold the water that is drawn from the well so make it available for cattle to drink. Water tanks may be constructed of concrete, metal, wood, or other materials. This property subtype differs from

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the property type Stock Tank, described below, in that it is functionally tied to the well and is usually located in close proximity. A Stock Tank may be a much larger structure that gets its water from sources other than a well.

Subtype: Dams

A small dam on a stream served as another source of water. Dams in connection with canals or pipelines could also distribute water to fields and orchards.

Subtype: Canals

A canal is an open, built waterway for carrying water from a source like a reservoir behind a dam, a well, or a spring. Many ranchers developed extensive irrigated fields and orchards to support and diversify their cattle operation.

Subtype: Pipelines

Pipelines are another system for moving water from a source like a well or reservoir to a tank or to fields. A pipeline can be an important part of a ranch irrigation and watering system.

Significance:

These properties must be associated in a significant way with the context of cattle ranching. Since water is a critical resource for ranching throughout the state, they do have importance. However, it is rare that a particular well and/or windmill are of such importance that it can be considered individually eligible for the National Register. More likely, a well and/or windmill may be eligible if it is part of an eligible ranch district or ranch landscape. An exception is a property such as the Iron Turbine Windmill in Prescott that is individually listed in the National Register under Criterion C as a unique example of a particular kind of windmill technology.

Registration Requirements:

For a windmill individually eligible under Criterion C, integrity of design is the critical aspect. The Iron Turbine Windmill was listed despite its move from its historic location to the Sharlot Hall Museum in Prescott. This property has also lost some of its integrity of materials since it is now on top of a metal structure rather than the wood structure it original was on. The key to this property's eligibility despite the loss of these aspects of integrity is that its mechanical structure displays a unique solution to the problem of regulating the speed of its rotation in winds that can come from any direction.

Most wells and/or windmills will only be eligible for the National Register as part of an eligible ranch district or ranch landscape. In such cases integrity of association, location, and materials, as well as design, will be of greater importance. Workmanship is not likely to be an important aspect of integrity as most windmills represent factory production. Well houses are unlikely to be individually eligible. A well house that is eligible as part of a ranch district or ranch landscape will retain integrity of association, location, and materials. Water tanks are also unlikely to be individually eligible. A water tank that is eligible as part of a ranch district or ranch landscape will retain integrity of association, location, materials, and perhaps design in some cases.

A natural spring is most likely to be classified as a site, a place where ground water naturally comes to the surface and is then used by ranchers. A small number of springs in Arizona are listed in the National Register. These are variously associated with historic exploration, the military, and early land uses such as cattle ranching. The Pipe

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Spring National Monument, with its imposing, fortress-like building constructed directly over the spring is associated with pioneer Mormon settlement and cattle ranching in the Arizona Strip region. For a natural spring to be listed individually, it must retain integrity of association, location, setting, and feeling. It is not necessary that water continues to issue from the spring since it is the historic place where water came, rather than its continued modern issuance that is significant. As natural occurrences, natural geological processes that shift the path of water flow underground can affect springs. They can also be adversely affected by man-made occurrences such as overuse of groundwater that reduces the water table. Pipe Spring is an example of a place where in 1999, water ceased flowing from the spring. An initial study by a National Park Service geologist indicates that this may have been the result of natural underground shifts, rather than a lowering of the water table. In addition to individually significant springs, some springs may be eligible for listing as contributing elements to a ranch district or ranch landscape.

3. Fences and Cattle Guards

Description:

A fence is a structure built to demarcate a boundary and to limit movement from one area to another. The most common fence associated with cattle ranching is the barbed wire fence, constructed of barbed wire strung between metal or wooden poles. A ranch may contain many miles of such fencing that define grazing areas, boundaries to other land jurisdictions, or that limit cattle access to other ranch properties such as fields or homes. Closer to the ranch house, there may be fences of wood, stone, or other materials. Such fences are usually more costly, limited to the domestic area, and serve a decorative purpose as well. As stated in the context above, a cattle guard is a structure designed to prevent passage by cattle. They are usually integral parts of fences and typically located where a road passes through the fence. Cattle guards are effective in preventing cattle from leaving the fenced area so gates are unnecessary except to prevent passage of people.



Vernacular log fence, Organ Pipe Cactus National Monument.  
SHPO photo collection.

Significance:

The presence of fencing on ranches is one of the primary distinguishing property types between the pioneer era and modern cattle ranching. In the Spanish, Mexican, and pioneer American eras, cattle were left to graze on the open range. Particularly before the invention of barbed wire, fences were expensive to build and were limited to the areas around the ranch house where cattle were not wanted, such as the house or garden. The modernization of the cattle industry involved the delineation of property boundaries between ranchers and other land managers. The Taylor Grazing Act created grazing districts and the Forest Service and Bureau of Land Management regulated a system of controlled land access. Extensive fencing, along with the system of grazing permits,

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allowed land managers to control how many cattle were grazing in a particular area. The invention of cattle guards allowed fencing to occur without hindering transportation with innumerable gates.

Registration Requirements:

Despite their importance, fences and cattle guards present several difficulties in evaluating their eligibility. Because they are boundary markers, location is a crucial aspect of integrity. This implies that the boundary itself must be historic. Fences may mark many changes in land use. Construction of roads, highways, and expansion of towns and cities has required the construction of hundreds of miles of fences. Only those fences and boundaries associated with the historic period of significance may be eligible. In many cases, cattle guards are modern structures placed where modern roads were run through historic fences. The opposite situation may also occur where modern fences and cattle guards are placed along historic roads. After location, integrity of materials is important. Unfortunately, by their nature and because they are exposed to the elements, barbed wire and wooden poles usually have to be replaced to remain functional. Historic materials may remain on the ground, but they are no longer a standing structure. Whether such 'ruins' of fences are eligible under Criterion D depends on whether they may yield important information. This might be the case where such materials are all that indicates the location of an important boundary. It is unlikely that a fence and/or cattle guard will be considered individually eligible for listing in the National Register. A historic fence and/or cattle guard that retain integrity of location and materials may be eligible if it is part of an eligible ranch district or ranch landscape.

The eligibility of a cattle guard as a contributing element to a ranch district or ranch landscape depends on who built the guard. Railroad guards and guards put on public right-of-ways by highway departments would not be eligible under a ranching context because their priority purpose is not to serve the ranch but to move traffic through cattle country. A historic railroad cattle guard, for instance, may be eligible under a historic context of railroad transportation as an example of a distinctive piece of roadwork. For a cattle guard to be eligible it ought to have been built or installed by the rancher to serve his immediate needs. A rancher might have built the guard himself or he might have bought it and had it put in place. The more interesting from a historical standpoint would be a home built one since it would reflect the personal resources and ingenuity of the rancher.

4. Stockyards

Description:

A stockyard is a property type separate from a ranch. Stockyards are typically associated with places where cattle are gathered such as at railroads for transportation or near cities for meat processing. Stockyards contain buildings where people work, auxiliary structures such as storage sheds, pens for holding cattle, cattle shoots for the orderly movement of cattle, scales for weighing cattle, and feed structures. A stockyard may also be associated with a transportation facility such as a rail siding, or a meat processing plant.

Significance:

Stockyards serve a critical economic function connecting Arizona ranches to other states where cattle are fattened or processed. At times, Arizona has had stockyards that were large even by national standards. Two examples include the Tovrea stockyards formerly located along the railroad between Phoenix and Tempe, and a large stockyard located near Casa Grande that was once owned by Hollywood's leading cowboy, John Wayne. These properties would be considered significant under Criterion A for their association with agricultural processing and transportation. They may also be significant for their contribution to local economies of some towns. Winslow in

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northern Arizona and Willcox in southern Arizona are examples of towns where historic stockyards gathered cattle from surrounding ranches for transportation by the railroads.

Registration Requirements:

For stockyards, integrity of location, association, design, and materials will be important. Workmanship, setting, and feeling will probably be of lesser importance. The presence of stock pens is probably the crucial feature that conveys the association with cattle ranching. An office building, where the business work of the stockyards may have been done, may not be eligible by itself without some other properties that convey the specificity of the business to cattle. The presence of historic transportation facilities, such as a rail siding, may be important. It is not necessary that the stockyard or transportation facility remain in operation. A rail siding that has had its rails removed, but retains the right-of-way, railbed, and perhaps the wooden ties, should still convey the association with railroad transportation.

5. Auxiliary Ranch Buildings and Structures:

Description: A working ranch requires a number of auxiliary buildings and structures, such as corrals, bunkhouses, barns, and sheds. These provide working and living space for ranch employees, storage space for equipment, and specialized structures for the management of cattle. Few such buildings and structures are likely to exhibit elements of style, or even necessarily of quality. Utility is their primary character and they are typically built of simple materials and with a minimum of decoration. Some properties may show local vernacular characteristics, such as the use of local materials and methods of construction. These properties tend to be concentrated around the main ranch house so that the ranch owner/manager can maintain control over the primary ranch functions.



Ruin of an old adobe building at the Pete Kitchen Ranch. Arizona State Library, Archives and Public Records, History and Archives Division.

Registration Requirements:

In general, auxiliary buildings and structures are unlikely to be considered individually eligible. Since their purpose is to house or facilitate a specialized function, their significance lies in the combination of all such properties in conveying how a ranch functions. In other words, they may be eligible as contributing properties to a ranching district. They must retain sufficient integrity of association, design, materials, location, workmanship, setting, and feeling to convey the significance of a historic ranch complex. One example of a listed ranch complex is the Colter Ranch Historic District, located near Eagar. This district is listed under Criterion B for its association with Fred Colter, a figure important in the history of Arizona's decades-long fight to secure rights to Colorado River water and in the creation of the Central Arizona Project. This district contains a number of auxiliary buildings and structures such as a granary, a large barn, a small barn, several sheds, and a bunkhouse. Conspicuously absent from this district is the main house in which Colter lived. While the ranch complex conveys a working cattle ranch

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from the first third of the twentieth century, the lack of the house makes its ability to convey its association with Colter problematic. It is the opinion of the writer of this document that this precedent should be carefully examined before being repeated.

6. Line Camps

Description: Line camps are a distinctive class of auxiliary buildings. Unlike the above listed auxiliary buildings, line camps are not part of the central ranch complex. They were built on the ranch at widespread distances as places where ranch employees could reside while riding the fences, maintaining windmill, and other tasks necessary on the range. More than the central ranch complex, the line camp conveys an essential feature of Arizona ranching with its reliance on large spaces in order to overcome the arid climate. In the era when the horse was the primary means of transportation, line camps were necessary because cowboys might need many days to travel the extent of a large ranch. Line camps are typically small and simple buildings with little or no ornamentation. Vernacular characteristics may include use of local materials and workmanship. For example, in northern Arizona line camps are more likely to be log cabins, while in the south they may be adobe. Line camps typically occur in association with other features such as a well and windmill.

Registration Requirements:

Because of their isolation, line camps are unlikely to be eligible as contributors to ranch districts. Their eligibility will depend on either their ability to individually convey their significance, or to convey as contributors to a ranching landscape. An example of a line camp individually listed is the Gachado Well and Line Camp located in Organ Pipe Cactus National Monument. This place consists of the abandoned well, the small, one-room adobe house, and a corral. These properties admirably convey an important aspect of historic ranching in southern Arizona. The employee at the line camp must perform such functions as maintenance of the water source and handling of cattle in the vicinity. The vernacular aspects of this property can be seen in its use of locally available materials. The house is of adobe, a common building material in southern Arizona. The corral is built of mesquite, palo verde, and other local materials. In order to convey its significance, a line camp must retain integrity of association, location, materials, setting, and feeling. Workmanship and design may be important if the vernacular aspects of the property are significant.

7. Agricultural Fields, Orchards, and Other Agricultural Features

Description:

Many cattle ranches also include other agricultural features. It is not atypical for a ranch to include an irrigated field to provide limited pasture for horses, cattle, or other animals. A ranch with more extensive fields could raise a significant portion of alfalfa for feeding cattle, an important supplement for the natural grasses of the range. Since arid Arizona has historically been important for breeding cattle rather than fattening for final market, these fields rarely could provide the full feed necessary for a profitable herd. Orchards and other agriculture fields can also represent a diversification of the ranch's production. This is particularly important for historic ranches, or smaller family-owned ranches, where self-sufficiency was more valuable than economic specialization. Supporting agricultural features can include small canals to convey water for irrigation. While fields, orchards, and other agricultural features are likely to be widespread over many acres, however, they are likely to be in relatively close proximity to the main ranch complex. This is for two reasons. First, such agriculture requires more intense labor and management than the widespread cattle operation. Also, many ranches have a limited water supply and so agricultural and domestic uses tend to concentrate around it.

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Registration Requirements:

Agricultural fields, orchards, and other agricultural features are likely to be eligible as contributing features of either a ranch district or a ranch landscape. Without an association with other ranch property types, it would be difficult for such properties to convey the context of cattle ranching. These agricultural features must retain integrity of association, location, and setting. Materials, design, and workmanship will likely be of lesser importance. It is not necessary that a field remain in use. A former field can still convey its historic agricultural use as long as it remains relatively free of native vegetation and retains its original contour. The survival of related features such as the canal that transferred water to the field is important in conveying how agriculture was accomplished in an arid environment. It is not necessary that a feature such as a canal fully retain integrity of material as long as it conveys its primary characteristics. An open ditch in its historic location can still convey its significance even if it has been modernized with concrete lining.

8. Miscellaneous Features

Subtype: Stock trails

Stock trails are routes used to transport livestock on hoof. The most famous of these are the "long drive" trails immortalized in Western fiction. The few long drive trails in Arizona were used to transport cattle from New Mexico and Texas to California. All were variations on the Gila River trail; very few cattle were moved across northern Arizona. With the completion of the transcontinental railroads the era of long trail drives ended. Within the state are a number of "short drive" trails over which cattle moved to different pasturage or to shipping points. LaRue's 1918 survey for the U.S. Geological Service mapped most of the livestock trails existing in the state at that time and distinguishes between cattle and sheep trails.

Registration Requirements:

A significant stock trail is likely to be eligible either individually, or as a contributing element to a ranch landscape. A stock trail is not necessarily linked historically to a single ranch. For example, a trail may have served to transport cattle from many ranches to a railroad shipping point. Trails, therefore, may represent a somewhat different historic context than individual ranches. For an extended discussion on the eligibility of historic trails, see the SHPO context study *Historic Trails in Arizona From Coronado to 1940* (1994).

Subtype: Cemeteries and Graves

It was not uncommon for rural people to bury their deceased on their home places. Many historic ranches, particularly from the earliest periods have known graves, although formal cemeteries are rare. Graves may occur as small family plots near the main ranch house, or as isolated graves on the range.

Registration Requirements:

While graves are often seen as lasting memorials to important persons, the National Register restricts the eligibility of cemeteries and graves because it prefers to select properties associated with a person's productive life. There are exceptions to this rule. For example, if a ranch was significant because of its association with a historically outstanding rancher and his grave was on that property, the grave would be an eligible element of the ranch complex. Cemeteries are usually not eligible unless they hold the remains of persons of transcendent importance, have distinctive design, or have special association with historic events. Burial places may be contributing elements of historic districts if they are integral to the district, but not its focal point.

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Subtype: Privies and dumps

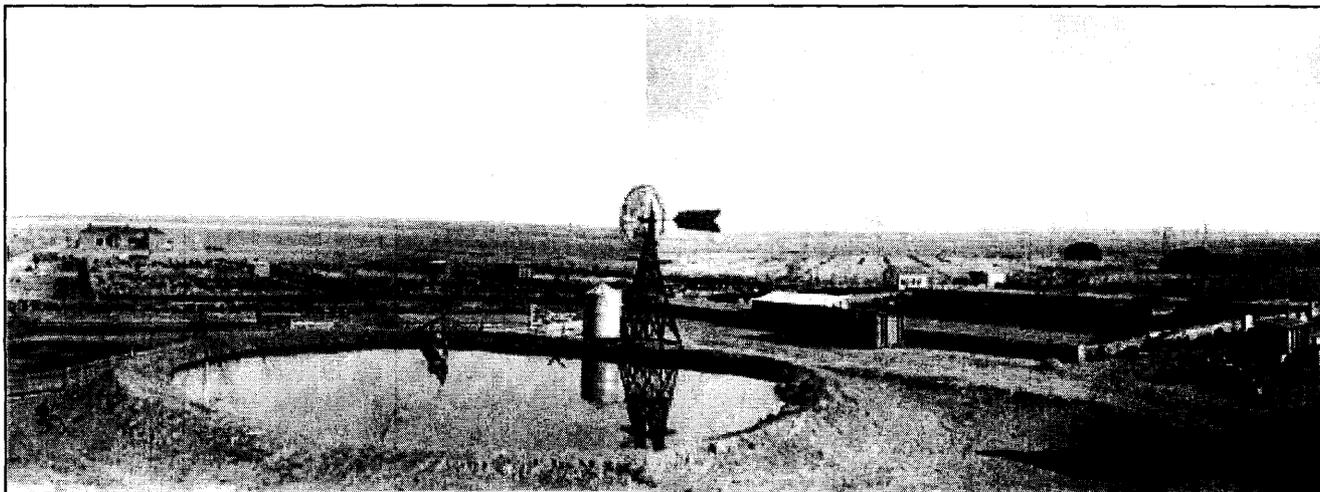
Archaeologists have found that privies often served as convenient dumpsites for ranch trash. Ranches may have also had special dump areas as well.

Registration Requirements:

These properties may be eligible under Criterion D for their potential to yield significant information as long as the sites retain integrity of association, materials, and location.

Subtype: Landing strips

Private airplanes have given even the remotest ranches access to the outside world. Many modern ranches now include landing strips. As time passes and these strips start to become fifty years old, they may be considered contributing elements to ranching complexes.



Cattle Ranch, ca. 1900. Arizona State Library, Archives and Public Records, History and Archives Division

9. Ranch Districts

Description:

The National Register defines a historic district as a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. A historic district for a cattle ranch could contain any of the above property types. This document has attempted to limit the idea of a ranch district to the area around the primary scene of ranch activities. These would include the main house, auxiliary buildings and structures, some fences and cattle guards, watering facilities and windmills, and other agricultural fields and features. These buildings, sites, structures, or objects can as a district convey the full

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sense of ranch activities. While a line camp might be technically a historic district if it includes more than one feature, it conveys only a very limited aspect of ranch operations. The most important features of an historic ranch likely to be omitted from a ranch district are those, like the line camp, that are spread a great distance from the ranch headquarters.

Registration Requirements:

In order to be eligible as a district, the concentration of ranch-related properties must be able to convey their historic significance. The district as a whole must retain integrity of association, location, design, materials, workmanship, setting, and feeling. It is not necessary that every contributing element fully retain enough integrity that it could individually convey its significance. The Colter Ranch Historic District, for example, lacks its historic main house, but retains enough other buildings and structures that it continues to convey much of what constituted an important historic ranch. A historic ranch that continues to operate is likely to also include a number of modern features or historic features that have been modified. The ranch might include a modern home, its well might be pumped with a gasoline motor rather than a windmill, or it might have modern metal sheds. The presence of modern features will not disqualify a ranch district from listing as long as the district as a whole largely conveys its historic characteristic, that is, it retains sufficient integrity of feeling. It has been common practice in Arizona to use the fifty-one percent rule. This rule states that a district can be eligible as long as a majority of the properties within it are contributing. A problematic use of this rule has been to gerrymander district boundaries to exclude non-historic properties and ensure that a majority are contributors. A better method is to examine the whole area of historic development and draw the boundary around that. If a majority of properties are not contributors, then it is unlikely that the district retains integrity of feeling and so should not be considered eligible.

Properties within an historic ranch district are likely to have been built over a number of years. Care must be taken to property define the district's period of significance so that its contributing properties reflect this evolution through time. A particular problem may arise with the conversion of an historic cattle ranch into a later tourist facility, or "Dude" ranch. Such a change may reflect an important change in context. The evaluation should be made as to whether the general feeling conveyed by the property is one of a working cattle ranch or a tourist facility. The latter context has not been covered within this document.

10. Ranch Landscapes

The broadest category of ranch-related properties is the ranch landscape. This category can include all of the above property types, including one or more ranch districts. As yet, there are no listed ranch landscapes, however, this category is described because there is an increasing desire in Arizona to preserve more of the state's natural and historic landscapes. One of the distinguishing features of Arizona cattle ranching is its use of tremendous areas of land as range. In the earliest eras, this range was open and limited only by the rancher's ability to manage his herds and the availability of water. In the twentieth century the open range was fenced, but this only regulated land use, it did not mean that cattle did not roam over ranches of many thousands of acres. There is some misconception that beyond the confines of the ranch headquarters and associated buildings and fields, the range consists of natural landscape. The above historic context, however, describes how ranching has altered the land in many ways. The ranch landscape includes the full range of property types, including distant line camps, cattle trails, and miles of fences and roads. In the landscape, it is the land itself that is the unifying feature, the range over which cattle historically roamed is the property. The realization that cattle have altered the land is not a new discovery. Ranchers at the turn of the last century observed how overgrazing changed vegetation patterns and caused erosion. There are vast expanses of Arizona that are taken to be natural landscape that are in reality historic cattle ranching landscapes.

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Registration Requirements:

Since there are no listed ranch landscapes, the criteria for eligibility listed here must necessarily be tentative and academic. The closest thing to a listed ranching landscape in Arizona is in Organ Pipe Cactus National Monument where a number of historic ranching properties have been individually nominated. These include Bates Well Ranch, Gachado Well and Line Camp, Bull Pasture, and the Dos Lomitas Ranch. Several of these properties are associated with the Robert L. Gray family that ranched in that region for many years. It might be possible to nominate these properties, other similarly associated properties, and the intervening range as a ranching landscape. The key would be to identify how the land visually conveys changes wrought by cattle ranching. If the land is scientifically shown to have been significantly altered by decades of cattle grazing, then the range may be a historic landscape. On the other hand, if the land remains fairly natural with little trace of cattle activity, then it lacks the necessary character to convey cattle ranching. A ranching landscape must retain integrity of association, location, setting, and feeling. Integrity of materials, design, and, perhaps, workmanship, will be of lesser importance. Almost certainly a ranching landscape will contain a number of non-contributing elements. These must be in a small enough proportion so as to not alter the general historic character of the landscape.

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**Geographical Data**

This multiple property documentation form refers to resources and properties located within the present boundary of the State of Arizona.

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**Summary of identification and evaluation methods**

This multiple property documentation form was prepared using resources and documentation located at the Arizona State Department of Library, Archives, and Public Records, the Arizona State Historic Preservation Office (SHPO), Arizona State University, Northern Arizona University, and the University of Arizona. Although SHPO has not conducted a historic building survey specifically targeting cattle ranching properties, its historic property inventory contains information about many historic ranches. Many of these are listed in the National Register of Historic Places. Much of the narrative is derived from published works about cattle ranching in Arizona, some from government reports, and some from primary materials such as census records and individual property files. This work was undertaken by William S. Collins, historian for the Arizona SHPO in 1995 and 1996, and revised in 2000 for this MPDF.

The historic contexts are divided both geographically and temporally, and cover the full extent of historic cattle ranching throughout the State of Arizona. Temporally, the state was divided into specific eras. The first, the Spanish and Mexican era represents a distinct period when cattle were first introduced to the region. It is distinct from the later Anglo-American periods by a period of about two decades from the mid 1830s to the 1850s when Mexican cattle ranching all but ceased in the area. Anglo-American ranching is divided into three broad periods: the pioneer, the boom period, and the modern era. Innovations such as the introduction of railroad transportation and natural events such as the drought of the 1890s were important in defining these periods. The contexts were also defined geographically. The state was divided into three sections. The northern-most section is the Arizona Strip which is separated from the rest of the state by the Grand Canyon and is cultural and economically linked to southern Utah. The remainder of the state was divided into approximately northern and southern halves. The justification for this division is that cattle marketing in Arizona is intimately linked to the two transcontinental railroads that cross the northern and southern parts of the state. The southern part of the state is also characterized by desert range ranching in the Sonoran desert, while in the north are the higher elevations of the Mogollon Rim and Colorado Plateau.

In 1998, the Arizona SHPO contracted with Arizona Preservation Consultants to produce a Multiple Property Documentation Form for historic cattle ranching in northern Arizona. Although that project was not completed, preliminary work by the consultant resulted in the pre-inventory of cattle ranches in northern Arizona, based on *Ranch Histories of Living Pioneer Stockmen, Volumes I-XVIII*. This pre-inventory is included in the present document.

Although the Arizona SHPO sponsored this MPDF, it does not have the resources to prepare nominations of individual properties to submit with it in the form of a multiple property submission. This MPDF is intended to facilitate nomination by private citizens and government agencies by publishing a broad overview of ranching history in the state, and defining registration guidelines.

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