INTERMOUNTAIN CULTURAL RESOURCES MANAGEMENT
ARCHEOLOGY PROGRAM

315/D-97

The Historic Period at Bandelier National Monument

Monica L. Smith



Intermountain Cultural Resources Management
Professional Paper No. 63

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5/21/2003

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Contribution No. 11 of the Bandelier Archeological Survey

Anthropology Projects
Intermountain Support Office
Intermountain Region
National Park Service
Department of the Interior
2002

To the Friends of Bandelier
for their support
of archeological research
at Bandelier National Monument

Contributions of the Bandelier Archeological Survey

1 **MATHIEN, FRANCES JOAN, CHARLIE R. STEEN, AND CRAIG D. ALLEN**
1993 *The Pajarito Plateau: A Bibliography.* Southwest Cultural Resources Center Professional Paper No. 49. Santa Fe.

2 **KOHLER, TIMOTHY A. (editor)**
1989 *Bandelier Archaeological Excavation Project: Research Design and Summer 1988 Sampling.* Reports of Investigations No. 61. Department of Anthropology, Washington State University, Pullman.

3 **TOLL, H. WOLCOTT**
1995 *An Analysis of Variability and Condition of Cavate Structures in Bandelier National Monument.* Intermountain Cultural Resources Center Professional Paper No. 53. Santa Fe.

4 **MATHIEN, FRANCES JOAN**
1991 Glimpses into the History of the 1908 Fieldwork at Yapashi, Bandelier National Monument. In *Puebloan Past and Present: Papers in Honor of Stewart Peckham,* edited by Meliha S. Duran and David T. Kirkpatrick, pp. 121-132. Papers of the Archeological Society of New Mexico: 17. Albuquerque.

5 **KOHLER, TIMOTHY A. (editor)**
1990 *Bandelier Archaeological Excavation Project: Summer 1989 Excavations at Burnt Mesa Pueblo.* Reports of Investigations No. 62. Department of Anthropology, Washington State University, Pullman.

6 **KOHLER, TIMOTHY A., AND MATTHEW J. ROOT (editors)**
1992 *Bandelier Archaeological Excavation Project: Summer 1990 Excavations at Burnt Mesa Pueblo and Casa del Rito.* Reports of Investigations No. 64. Department of Anthropology, Washington State University, Pullman.

7 **WHITE, JOSEPH COURTNEY**
1992 *In the Land of the Delight Makers: An Archaeological Survey in the American West.* University of Utah Press, Salt Lake City.

8 **KOHLER, TIMOTHY A., AND ANGELA R. LINSE (editors)**
1993 *Papers on the Early Classic Period Prehistory of the Pajarito Plateau, New Mexico.* Reports of Investigations No. 65. Department of Anthropology, Washington State University, Pullman.

9 POWERS, ROBERT P., AND JANET D. ORCUTT (editors)
1999 *The Bandelier Archeological Survey, Volumes I and II.* Intermountain Cultural Resources Management, Professional Paper No. 57. Santa Fe.

10 SMITH, MONICA L.
2001 The Archaeology of a "Destroyed" Site: Surface Survey and Historical Documents at the Civilian Conservation Corps Camp, Bandelier National Monument, New Mexico. *Historical Archaeology* 35(2):31-40.

11 SMITH, MONICA L.
2002 *The Historic Period at Bandelier National Monument.* Intermountain Cultural Resources Management, Professional Paper No. 63. Santa Fe.

12 KOHLER, TIMOTHY A. (editor)
In Press *Village Formation on the Pajarito Plateau, New Mexico: Archaeology of Bandelier National Monument.* University of New Mexico Press, Albuquerque.

Foreword

In 1916 Bandelier National Monument was established by proclamation of President Woodrow Wilson to protect and preserve for public enjoyment and education the large Pueblo settlements and spectacular cave dwellings of the southern Pajarito Plateau. At the time, the monument and its archeological resources enjoyed considerable national recognition both in the public eye and within the emerging discipline of archeology. This prominence was the product of the pioneering explorations of Adolph Bandelier and the later excavations and preservation efforts of the politically influential Edgar L. Hewett.

Since its establishment, the monument has ceded much of its eminence in southwestern prehistory, as the focus of archeological research has shifted to other regions and other portions of the Rio Grande Valley. Although sporadic investigations have occurred within the park over the last 75 years, the extent to which Bandelier had been forgotten was exemplified by the modest number of identified sites. In 1985 fewer than 500 sites were known in the 51 square miles of the monument, and knowledge of most of these was poor at best.

Because of this dearth of information, the Bandelier Survey was initiated with the goal of recovering both cultural resource management and research data needed to better protect, preserve, and interpret the monument's archeological resources. These overarching objectives have provided a useful framework for a variety of archeological studies and publications that address specific resource management and research needs at Bandelier. The present volume is the eleventh of several National Park Service and Washington State University contributions that describe and interpret the results of the Bandelier Survey. A synthesis of the excavation results, edited by Timothy Kohler, will complete the series. Through these publications we hope to renew public and professional awareness of the significance of the monument's archeological resources.

The Pajarito Plateau: A Bibliography, by F. Joan Mathien, Charlie Steen, and Craig Allen (1993) provides a comprehensive bibliography on the cultural and natural resources of Bandelier and the Pajarito Plateau, as well as brief introductions to the history of archeological investigation (Mathien) and the physical environment (Allen) of the Plateau. More detailed analyses of archeological history and the paleoenvironment are provided by Mathien and Allen in the forthcoming synthesis by Timothy Kohler.

The almost complete lack of systematic and quantitative data on cavate architecture and on the condition of these unique structures provided the impetus for H. Wolcott Toll's analysis of a sample of cavate pueblos in Frijoles Canyon and Tsankawi. The results of this study, published as *An Analysis of Variability and Condition of Cavate Structures in Bandelier National Monument* (Toll 1995) have proved invaluable as a baseline data source for more detailed architectural conservation studies now underway at the park.

A series of archeological excavations conducted by the Washington State University (WSU) Field School, under the direction of Timothy A. Kohler were enabled by a cooperative agreement between Washington State University and the National Park Service. The excavations were designed to recover Coalition and Classic period chronologic, stratigraphic, subsistence, paleoenvironmental, architectural, and artifact population data needed to amplify and comple-

ment the surface data collected by the inventory survey proper. As part of the overall survey research design, the focus of Kohler's analyses is explanation of why aggregation occurs, and what cultural changes occur as a consequence of aggregation.

The results of Kohler's work are presented in a series of descriptive reports (Kohler 1989, 1990; Kohler and Root 1992; Kohler and Linse 1993), and in the forthcoming synthesis, *Village Formation on the Pajarito Plateau, New Mexico: Archaeology of Bandelier National Monument* (in press). Although limited funding, logistics, and modern research ethics have made it impossible as well as undesirable to conduct large-scale excavation at a sample of sites, the excavation data recovered by Kohler and his team, provide for the first time, a body of archeological information from Bandelier that is fully systematic, probabilistically drawn, and therefore comparable with other areas of the Southwest.

The results of the archeological survey, edited by Powers and Orcutt (1999) are the subject of a two-volume monograph entitled *The Bandelier Survey, Volumes I and II.* The survey report not only describes most of the 1,959 sites documented within the 5,692 hectares (14,064 acres) surveyed, but it uses the surface data to examine the same research problem: what are the causes and consequences of aggregation? Our problem orientation has resulted in a report which is tightly focussed on examination of a hypothetical model designed to explain aggregation during the period of Puebloan (Anasazi) occupation between A.D. 1150-1600. At the same time the report is general enough to include chronological and typological analyses needed to structure the analysis data, and examine a variety of questions congruent with the aggregation model, but not originally anticipated. Because the survey volumes concentrate almost exclusively on the Puebloan period of occupation, the data recovered from the few Archaic sites identified are not treated.

The cultural resource management data recovered by the survey are comprehensively presented by Elizabeth Mozzillo in *A Management Summary of the Bandelier Archeological Survey, 1987-1991* (Mozzillo 1998). Her treatment provides a fine example of how archeological inventory data may be used to address specific cultural resource management problems.

The present volume, the last in the Bandelier series, is by Monica L. Smith. It addresses in a thorough and innovative manner, the historic period archeological sites and artifactual materials documented by the survey. Smith's analysis examines historic archeological materials ranging in age from the late Classic period (early 1500s) to the second half of the 20th century. She focuses on four topics: the archeological materials deposited by native people after contact with the Spanish; the archeological manifestations of an extractive economy dominated by livestock raising, logging, and mining; the effects of the industrial economy and modern transportation on material culture; and finally, the impact of federal land management on the southern Pajarito Plateau landscape.

Robert P. Powers, Director
Bandelier Archeological Survey
January, 2002

Acknowledgments

The National Park Service archeological survey project, of which this volume forms a part, was an undertaking that relied on the support of many individuals and agencies.

The process of field recording for historic materials was complex, and it was developed over time into an exacting procedure. I would like to thank my colleagues in the field for patiently and faithfully recording all of those cans, wire fragments, and bottles.

Archival and historical research was critical to the structure of this volume. I would like to thank Lou Haecker and Dedie Snow of the Archaeological Records Management Section of the Historic Preservation Division in Santa Fe. At the Laboratory of Anthropology library, I benefited from the unstinting help provided by Laura Holt and Mara Yarbrough. I also benefitted from looking at materials at the School of American Research, in the Southwest Room at the University of New Mexico, and in the Southwest Room at the Santa Fe Public Library. Arthur Olivas of the Fray Angélico Chávez Photo Archives at the Palace of the Governors provided welcome access to the materials and some of the photographs that illustrate this volume.

I would also like to thank the numerous staff members at Bandelier National Monument who gave ongoing support to this project. Gary Roybal and David McNeece were instrumental in providing texts and photographs from the Bandelier archives. Craig Allen's encouragement was also appreciated.

For their insightful comments, which have improved the volume, I would like to thank Patty Crown, Rory Gauthier, Charles Haecker, Jane Kepp, and Dedie Snow. I would especially like to thank Tim Kohler for his comments as well as for his continued support of the Bandelier Archeological Project. Conversations with Dick Ford, Mark Lycett, Bob Preucel, Ann Ramenofsky, Dave Thomas, Heather Trigg, and Chip Wills have provided information and source materials for many of the new archeological projects focused on the historic period in northern New Mexico.

It is hard to adequately acknowledge in just a few words the contributions of my fellow Bandelier project members. We were brought together by Bob Powers, who created a team that was greater than the sum of its parts. Throughout the years of this project, Bob's unfailing dedication as project director provided a model for high standards in archaeological fieldwork. The teamwork and solidarity of the Bandelier survey endures in the many friendships we have carried forward from the days of long hikes across canyons. For their encouragement, companionship, and good cheer in the process, I thank in particular Genevieve Head, Howard Newman, Tineke Van Zandt, Jim Vint, and Courtney White. Finally, and most especially, I thank James Snead for the best form of scholarly companionship and for sharing many a starry night on the Pajarito.

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1

Introduction

This volume explores the use of the area that is now Bandelier National Monument (Figures 1.1, 1.2) after the incursion of Spaniards into New Mexico, from the first impacts of the European presence to the present day. Relatively densely occupied in the prehistoric period, this region saw a dramatic drop in settlement by the 1600s but continued to play an important role in the social and economic landscape of northern New Mexico. The use of the area reflects broader historical developments, including large-scale changes in land use for ranching and farming, changes in the structure of landownership, and demographic shifts that brought new settlers into Native American domains and created what is today a multiethnic regional identity.

At Bandelier National Monument, data from the 1987–1991 archeological survey project provide an opportunity to evaluate our understanding of the historic period in northern New Mexico by highlighting the actions of ordinary people who lived and worked in a zone affected by the dramatic economic shifts associated with the modern world. These data can be used to address three principal realms of inquiry: the archeological manifestations of native people in the postcontact era; the economic implications of dispersed work loci in the extractive economy of the late-nineteenth-century American West; and the impact on material culture and landscapes of twentieth-century developments such as the federal government's involvement in land management.

The analysis of the historic-period materials at Bandelier National Monument was encompassed within a data recovery project that was largely focused on prehistoric settlement patterns, economic activities, and social groupings (Powers and Orcutt 1999). This structure of data recovery is common to archeological research projects in the American West, which often center on the region's abundant prehistoric materials. In the analysis phase, however, it is both possible and necessary to treat historic-period materials with a different site categorization process: one that reflects the greater complexities of postcontact economies, including regular long-distance transportation, new technologies, and new uses of the landscape for extractive industries such as herding, logging, and mining. All of these activities took place in the physical realm, resulting in discernible changes in artifact assemblages and spatial organization.

The volume begins with an overview of the post-Columbian history of the Bandelier region (chapter 2). The written record nearly always precedes–and conditions–our understanding of archeological remains from periods for which documents are available. Documents provide insights about political conditions, record the details of specific events, and chronicle prescriptive or descriptive statements about social organization as noted and understood by people living in that time period. As such, they provide an invaluable structure for understanding the context of archeological remains. However, documents also have limitations: they are generally written from the point of view of those in positions of leadership or authority; their scope may be limited to a small range of local conditions; and they may record

2 HISTORIC BANDELIER

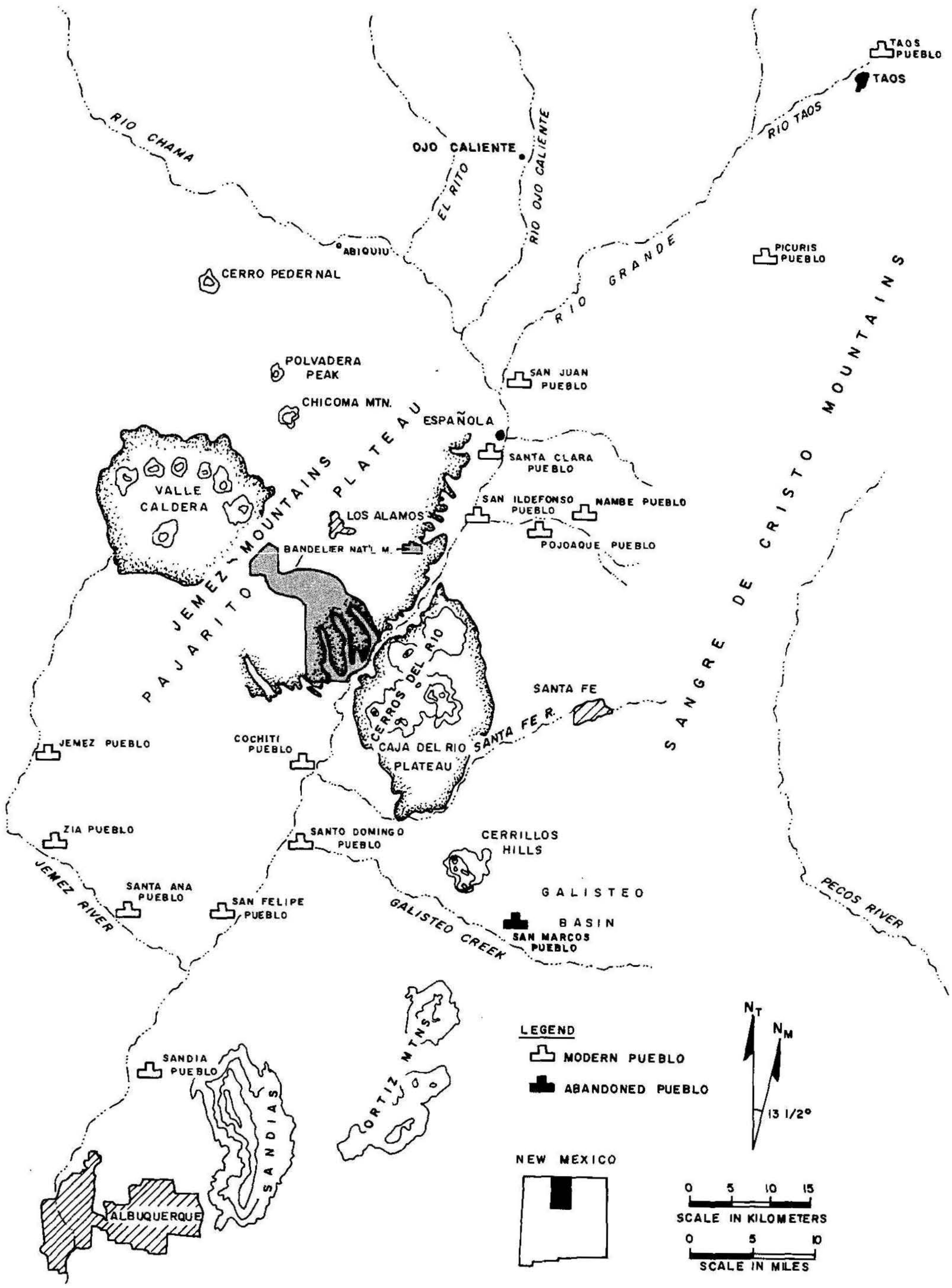


Figure 1.1. ***The northern Rio Grande and Bandelier National Monument (adapted from Powers and Van Zandt 1999:8).***

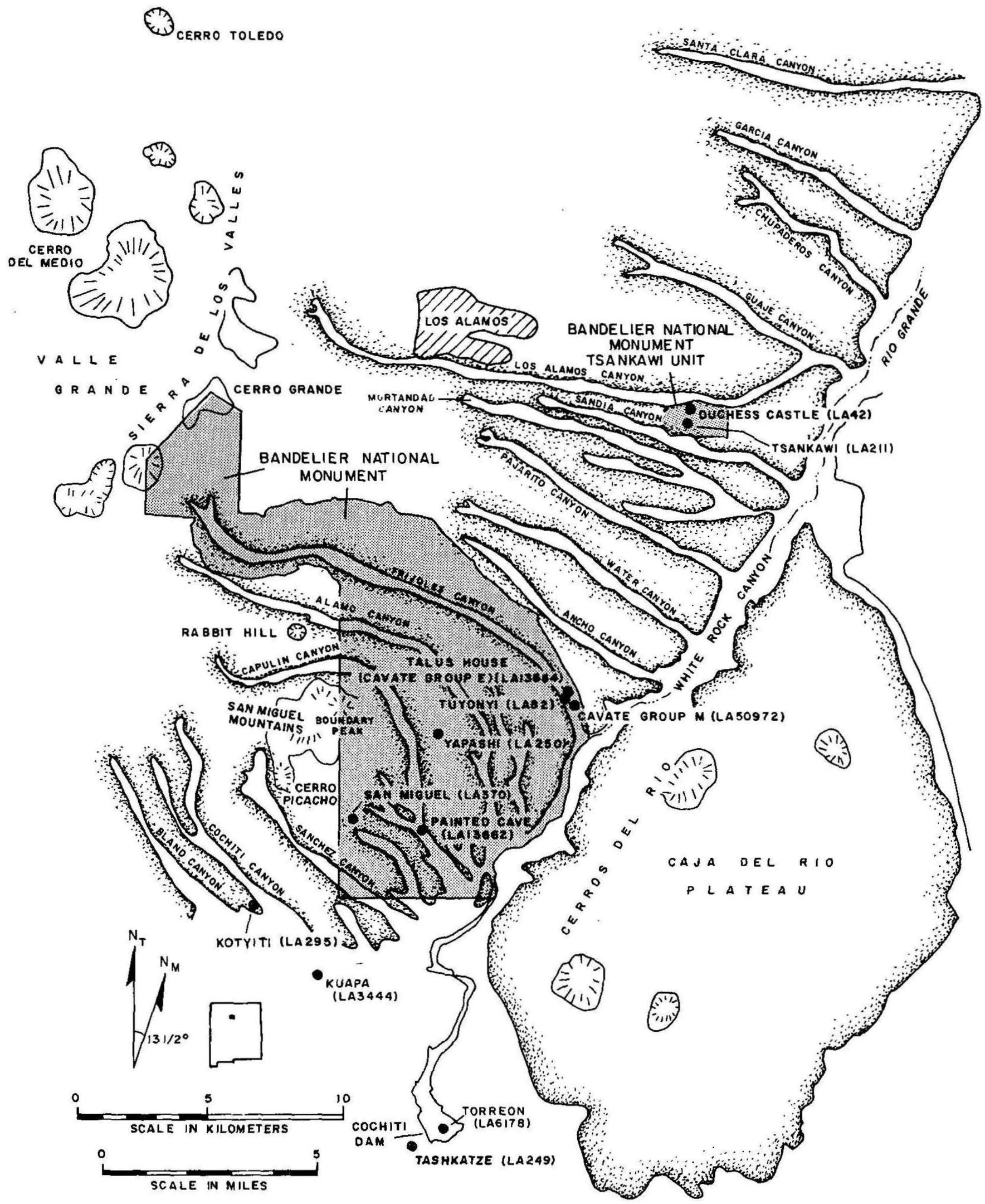


Figure 1.2. Bandelier National Monument and the Pajarito Plateau (reproduced from Powers and Van Zandt 1999:9).

desired, rather than actual, conditions. By assessing what is known from historic records and the biases that archeologists may unwittingly incorporate into their interpretations, we can use the historical record as a testable model for a larger-scale understanding of historic-period societies.

In chapter 3, I discuss the methodological implications of the archeological recording of historic-period sites and artifacts. The field data for the historic period at Bandelier National Monument, collected within a project framework created for prehistoric remains, are analyzed through a visual clustering process that brings isolated artifacts and recorded sites into a larger analytical unit suitable for the understanding of human activities in the complex regional economies of the historic period. These economies include the introduction of domestic mammals (cattle, horses, and sheep) with their specialized requirements and ancillary artifact assemblages; the extraction of natural resources through logging and mining; and the development of new transportation modes in the form of the railroad and the automobile.

The subsequent discussion of the archeological materials recorded in the Bandelier survey is presented in chapter 4 in terms of four time periods: the postcontact Early Historic 1 (from the early 1500s to c. 1700); the Early Historic 2 (from c. 1700 to c. 1850); the Sheepherding/Ranching period (from c. 1850 to c. 1919), and the subsequent twentieth century (including the area's transition to an archeological preserve along with federal land-management activities). Each of these four periods has a distinctive signature of material culture, architectural features, settlement patterns, and land use that can be elicited from the archeological record.

For the postcontact Early Historic 1 period, a decline in the Native American population is evidenced in the Bandelier survey data by the relatively small number of sites with ceramics that date to that era. Continuing a prehistoric trend toward the consolidation of settlement along the Rio Grande, the area now encompassed in the monument seems to have supported no large, permanent settlements after the mid-1500s (Powers and Van Zandt 1999:28). Much of what we know about the larger settlements of this period comes from investigations to the south of the monument's boundary, in the area of what is now Cochiti Pueblo (e.g., Biella 1979; Biella and Chapman 1977; Hubbell and Traylor 1982; Lange 1968; D. Snow 1976). However, the presence of historic ceramics in small amounts throughout the Bandelier area indicates that the region was traversed and used by inhabitants of the northern Rio Grande region.

For the Early Historic 2 period, evidence of human activity within the current monument's boundaries declines dramatically. There is modest evidence for the adoption of herding as an economic strategy. Although habitations continued to be located to the south and north, herders began to make use of the permanent water sources and grazing land on the Pajarito Plateau, including areas of the present-day monument. The development of formal land claims also began in this era, bringing the first legal descriptions of property boundaries across the Pajarito; these land grants would continue to shape the uses of the landscape in subsequent centuries.

The first substantial quantity of historic-period materials comes after the mid-nineteenth century, when archeological evidence for small-scale herding camps increases. The temporary and ephemeral nature of most of these camps indicates a transient lifestyle with limited access to consumer goods such as commercially prepared foodstuffs. For this Sheepherding/Ranching period, a comparison with contemporaneous villages and hamlets outside the monument boundary indicates that people living in these temporary habitations participated in the emerging market economy that accompanied the introduction of the railroad and other reliable modes of long-distance transportation. However, the archeological data from Bandelier challenge the view that this prosperity was both widespread and immediate. Instead, the data indicate that the availability of consumer goods was limited and that many people in the ranching and herding workforce lived at subsistence levels.

In the twentieth century, significant shifts in land use resulted in economic and social changes in

the archeologically known landscape. The permanent settlement of a farming family in the central portion of Frijoles Canyon–one of the many canyons that dissect the Parajito Pleatau–in 1907 was coincidentally accompanied by increased interest in the archeological resources of the region, culminating in the first excavations of the large prehistoric site of Tyuonyi. Shortly afterward, the land was placed under the protection of the US Forest Service for the sake of its cultural resources. The area that is now at the core of Bandelier National Monument became the focus of increased public attention following the transfer of jurisdiction to the National Park Service in 1932. Facilities for visitors were increased, beginning with a privately run inn and followed by the construction of a visitor center complex with the assistance of the Civilian Conservation Corps, a Depression-era jobs program. No less than any other historic activities in the area, the projects associated with the construction of visitor facilities at Bandelier left discernible traces on the landscape that have joined the archeological record in their own right.

The Pajarito Plateau of northern New Mexico is a dramatic landscape of deeply carved canyons interspersed with high mesas. Bandelier National Monument is located on the southern side of this plateau and consists of two administrative units (see Figure 1.2). The main portion of the monument covers 13,328 ha (32,934 acres), with the Rio Grande forming its southeastern boundary. Though the canyons draining the plateau empty into the Rio Grande, not all canyons have permanent water; the only two year-round watercourses in Bandelier are those in Frijoles Canyon and Capulin Canyon. Additional water is found in the uplands where the geologic zones of the Jemez Mountains meet the overlying tuff of later volcanic eruptions (Hoard 1983:42). The main portion of the monument contains elevations ranging from 1,621 m (5,320 ft) at the Rio Grande to 3,109 m (10,199 ft) at the top of the mountain known as Cerro Grande on the monument's western edge (Powers and Van Zandt 1999:7). The second portion of the monument consists of the Tsankawi subunit, measuring a total of 321 ha (793 acres). It is located 11 km (7 mi.) northeast of the main portion of the monument (please note that for convenience in this volume, maps of archeological remains sometimes show both administrative units on a single page).

The climate of the plateau in general is semiarid, with precipitation directly correlated to elevation. The higher the elevation, the higher the average annual rainfall, which ranges from 30 cm (11.8 in.) at the lowest elevations of the Pajarito Plateau to 90 cm (35.4 in.) in the highest elevations (Allen 1993:6). More important for human activities than the "average" precipitation in a given locale is the potential range of precipitation, which affects resources year to year. Orcutt (1999b) has examined the Palmer Drought Severity Index (PDSI) for the Rio Grande region for the period from 1150 to 1600 A.D.; this index shows how annual fluctuations around a mean resulted in a sequence of climatic conditions that can be characterized as normal, slightly wetter, and slightly drier years.

Human occupants of the plateau have altered the vegetation and produced changes in the landscape over time. In the prehistoric period, the sources of these alterations included agriculture, land modifications such as terracing (to redirect the flow of water), burning (to clear fields), and selective hunting (affecting the population of wild species, including predators as well as animals utilized as food) (Powers and Van Zandt 1999). The environment changed steadily as the population of native people declined, and by the mid-1800s there was probably more grassland than would have been seen previously (Powers and Van Zandt 1999:19–21). The grasslands provided a welcoming environment for grazing at a time when livestock was increasingly in demand in the nineteenth century to feed growing numbers of settlers in the American West. However, use of the area for grazing subsequently led to other changes, including significant erosion as grass cover was removed (Allen 1989:165).

Although Bandelier National Monument has been a declared wilderness area since 1976, human settlement patterns in the greater Pajarito region continue to affect the environment. The federal government's policy of fire suppression, beginning as early as 1905–1910, has allowed a greater proportion of tree growth throughout the Pajarito

Plateau than would have occurred naturally (Allen 1984:144). The higher fuel load from unchecked tree growth results in a fire pattern that is less frequent but more intense, with significant effects on vegetation patterns when large areas of trees are replaced with open grassland. Other environmental changes in the immediate vicinity of Bandelier National Monument have resulted from the collection of water behind Cochiti Dam on the Rio Grande south of (downstream from) the monument. In sum, the landscape seen by archeologists must be envisioned differently for the earlier periods of human occupation on the plateau. As Allen (1989:297) has noted, today's environment is "an artifact of historic human land use practices, not the pristine, 'natural' wilderness envisioned by most park visitors."

2

A Short History of the Bandelier Area

The historical record of the northern Rio Grande region provides a background from which to evaluate the archeological evidence at Bandelier National Monument. Until the twentieth century, the historical record was largely the product of a Euro-American perspective, in which documents were created and used in the process of colonial expansion and land management. They provide an essential chronological framework for understanding social and economic trends during the Spanish and subsequent eras.

Spanish explorations into what is now New Mexico took place relatively early in the European expansion into the New World, beginning less than 50 years after Columbus's initial voyage and 20 years after the first permanent Spanish habitation in Mexico. Cabeza de Vaca, in 1536, was the first Spanish explorer to circulate vague rumors of northern wealth, after his journey through what is now Texas and Louisiana. In 1539, Marcos de Niza went north and reached the Zuni village of Hawikuh, in west-central New Mexico (Hammond and Rey 1940; Reeve 1961). Although his expedition met with setbacks, including the death of one of its leaders at the hands of the Zuni, the potential for wealth in the area continued to spur interest in the northern Rio Grande region.

During subsequent Spanish explorations, three expeditions approached the southern vicinity of what is now Bandelier National Monument when they visited Cochiti Pueblo: Coronado in about 1540, Rodríguez-Chamuscado in 1581, and Espejo in 1582 (Abbink and Stein 1977). These expeditions were precursors to the establishment of settlements, the first at San Gabriel de Yunque at San Juan Pueblo, followed by the establishment of the Spanish settlement's capital in Santa Fe in 1610. From the colonial headquarters of the Spanish Crown in Mexico City, the journey northward was long, difficult, and slow, but the convoys of people and animals were impressive in size. Coronado brought approximately 1,000 men with him, and a witness to Oñate's San Gabriel colony in 1601 reported that it had 1,000 horses, 1,000 head of cattle, 300 mules, and some 3,000 goats and sheep (Hammond and Rey 1953:628; Ramenofsky 1996).

Although in retrospect these expeditions appear to have been launched with great investment of effort, they were in many senses peripheral to larger Spanish concerns with central Mexico. In a frank and plaintive letter describing his expedition, Coronado wrote: "Judging by the outcome, I feel sure that it was fortunate that I did not employ the whole of the army in this undertaking, because the hardships have been so very great and the lack of food such that I do not believe this enterprise could have been completed before the end of this year, and even if it should be accomplished, it would be with a great loss of life" (Hammond and Rey 1940:162). A sentiment of hardship affected Oñate as well; among other things, he received less money and fewer armaments and recruited fewer men for his expedition than had been contracted (Hammond and Rey 1953:8, 14). Excavations at settlements such as San Gabriel de Yunque have also revealed that some Spaniards were using older, probably secondhand armor—another sign that the northern

reaches of the Spanish domain were furnished as an afterthought to the principal focus on Mexico (Ellis and Ellis 1992:175). Even after settlements were established, the official convoy of supplies from Mexico City appeared only once every three to four years (Scholes 1930:186).

The Spaniards did not find the abundant mineral wealth they sought, but they continued their investment in the Rio Grande region because they perceived native Pueblo people as potential Christian converts and sources of labor (Abbink and Stein 1977). The proportion of non-native people also increased, and by 1680 there were as many as 2,500 persons of Spanish descent in New Mexico (D. Snow 1992:188). Spanish settlements, often fortified, were established close to Native American villages that themselves had been consolidated, either forcibly or through population loss. As Mera (1940:40) astutely observed, the Spaniards would have encouraged Pueblo groups to consolidate both for more effective protection from raiders and for more effective control of Pueblo labor and activities.

The economic and social controls that the Spaniards imposed on the Puebloan groups prompted the well-organized Pueblo Revolt of 1680. Former interpueblo ties were reaffirmed when groups from Santo Domingo, San Felipe, Taos, Picuris, and San Marcos allied themselves with the Cochiti to build and occupy the large site of Kotyiti (LA 295) about 14 km (8 mi.) south of Frijoles Canyon (Flynn and Judge 1973; see also Preucel 2000). In addition to evicting the Spanish settlers from the northern Rio Grande region, the activities of the revolt effectively destroyed many historic records in Santa Fe, limiting our ability to understand pre-revolt Spanish policies. Don Diego de Vargas returned the region to Spanish control in 1692, but as documents show, the next several years were marked by continued Pueblo attempts to displace the Spaniards (summarized in Pruecel 1998). Apachean groups also continued to harass settlers, restricting Spanish influence to a narrow zone of valley bottom from Socorro to Taos (Abbink and Stein 1977:157). Mexico City remained the colonial headquarters, once again sending convoys of supplies and reinforcements to the northern Rio Grande. In return, the settlers of New Mexico exported thousands of hides and finished leather garments to Mexico, including significant numbers of skins from wild animals such as buffalo, antelope, and deer (Levine 1991:164).

Subsequent changes in Spanish colonial administration were largely the result of policies designed to encourage coexistence in place of reliance on more expensive armed protection for Spanish colonists. A system of land grants was initiated to officially identify tracts of land with individuals, families, or groups. The verbal descriptions of the grants, however, were often vague. For example, consider the following definition of the parcel in a successful grant request from one Pedro Sanchez to Governor Juan Domingo de Mendoza in 1742 for the property that was eventually to be known as the Ramón Vigil grant: "A tract of land on the other side of the Rio del Norte, uncultivated and abandoned, and hence royal domain to which no one has a right, its boundaries being on the north the lands which the Indians of San Ildefonso enjoy by right, on the south those of Captain Andrés Montoya, the Rio del Norte on the east, and the mountain range on the west" (Jenkins 1972:123; see also Ebright 1994:225–246; Morley 1938:149). Often, boundaries between grants were not formally measured for years. As a result, overlapping grants became subjects of numerous legal cases and water-rights disputes, some of which continue to this day (Abbink and Stein 1977; DuMars, O'Leary, and Utton 1984; Ebright 1994; Hall 1987; Jenkins 1972). Figure 2.1 shows the major land grants in the present-day area of Bandelier National Monument.

The Pueblos were officially granted their lands by the Spanish provincial administration in the early eighteenth century (Abbink and Stein 1977; DuMars, O'Leary, and Utton 1984:140–142). These land grants effectively limited each pueblo's land use to the area in the immediate vicinity of its population center, but they also meant that the Pueblos tended to control the better agricultural land close to the rivers. Land granted to non-Pueblo individuals and groups was primarily devoted to ranching. With specific reference to the Bandelier area, the relatively restricted terms of the grants

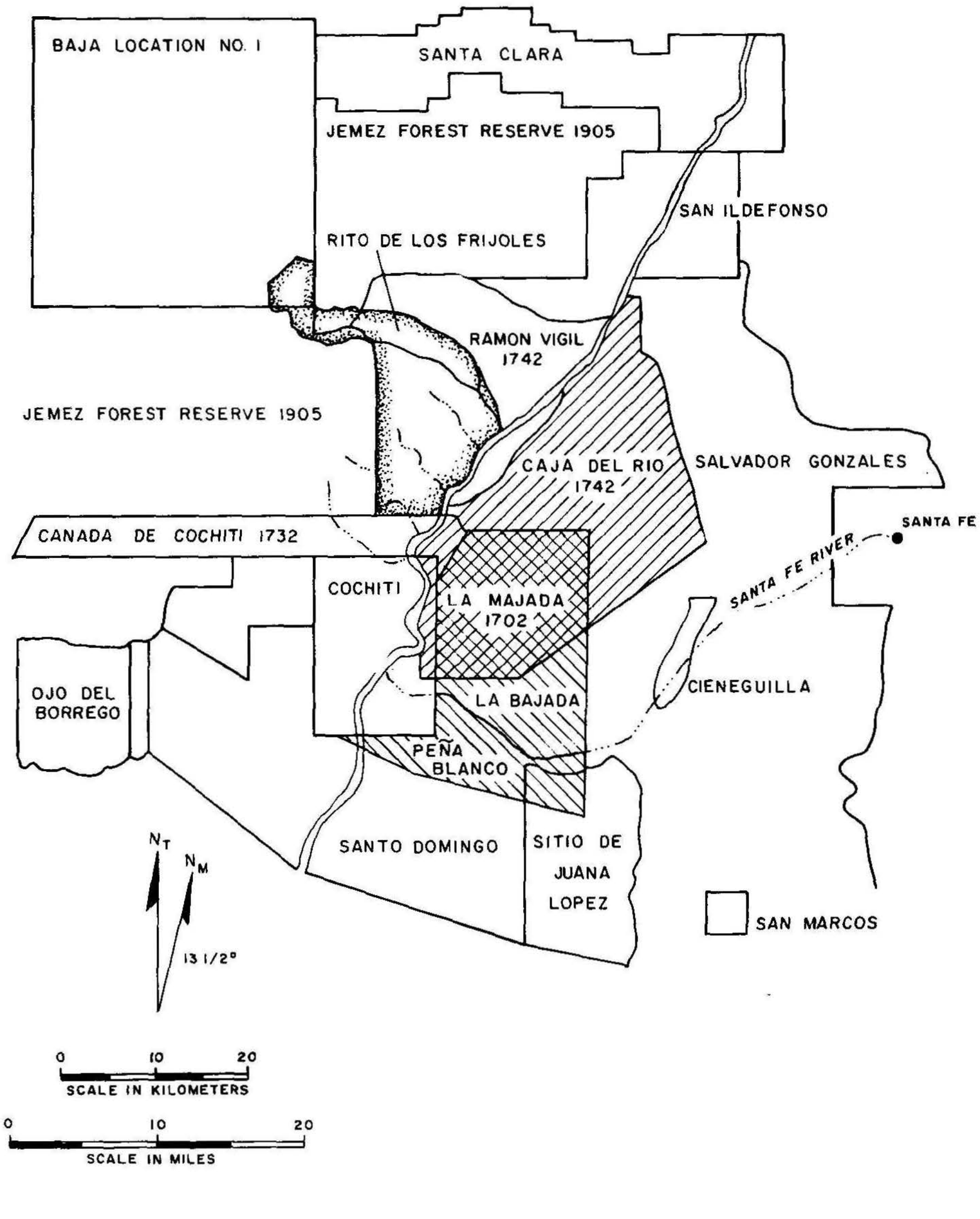


Figure 2.1. ***Land grants in the area around Bandelier National Monument (adapted from Abbink and Stein 1977:158, with additional information from Anonymous 1993 and Congressional Record 1905).***

meant that none of the three modern Pueblo groups (San Ildefonso, Santa Çlara, and Cochiti) was granted land that is now within the monument, although the Tsankawi unit is immediately adjacent to San Ildefonso sacred land. Spanish documents show instead that the area of the Rito de los Frijoles (Frijoles Canyon) was claimed by one Andrés Montoya sometime prior to 1740, but that it remained uncultivated and otherwise unworked until at least 1780 (Morley 1938).

Throughout the northern Rio Grande region, population growth remained relatively slow in the eighteenth century. Census data from the post-revolt era show that in 1750 there were 16 centers of population, of which the largest was Santa Fe with 271 families (a total of about 1,500 persons). Most settlements were considerably smaller, such as Abiquiu with its "twenty scattered families" and Ojo Caliente with 46 families (Pratt and Snow 1988:225–226). Economic reports from the 1700s and early 1800s indicate that colonial inhabitants in New Mexico remained chronically undersupplied by Mexico City. They mitigated this shortfall through informal trade networks with native Plains peoples, through which both "Pueblo and Hispanic New Mexicans gained valuable hides, horses, slaves, and livestock—goods that were needed for domestic comforts in New Mexican settlements" (Levine 1991:164).

These overlapping exchange systems offer a glimpse of the complexities of northern New Mexico's political economy throughout the eighteenth century. Documentary sources note that raiding by Navajo groups was a considerable problem, but at the same time, small ranches and homesteads were also thriving (Pratt and Snow 1988: chapter 6; Quintana and Snow 1980). Contacts between groups were frequent, and trade between inhabitants of the Rio Grande region and the Great Plains was also substantial (Levine 1991). Native Pueblo peoples, migratory Apachean groups, immigrant Spaniards and other Europeans, and the by then well-established Hispanic people engaged in a symbiotic economic and social relationship that was at times relatively precarious. The history of any individual settlement might show a record of continuous residence or a cyclical series of abandonments and reoccupations (especially on the farther western edges of Spanish control).

The Spanish Crown was not the only government with interest in the region. The United States grew rapidly westward in the early 1800s, coming into competition with the Spanish as well as the French. Both European powers were, however, in a relatively weak position: France lost its principal North American landholdings with the sale of the enormous Louisiana Territory in 1803, and Spain faced considerable pressure from its Mexican colonies, culminating in Mexican Independence in 1821.

For New Mexico, the effects of Mexican independence were relatively minor. Already located on the periphery of the Spanish colonial system, New Mexico was not a principal participant in the independence movement and received correspondingly little attention from a government that continued to be centered in Mexico City. The only substantial change in government was an increase in land-grant activity, with an attempt to redistribute common lands to private ownership (Hall 1987:85). Raiding, which disproportionately affected the smaller settlements, increased because of the lack of Mexican government investment (see Abbink and Stein 1977:161). Carlson (1969) has calculated that the Rio Grande area was the principal source of the half-million sheep owned by the Navajo by the middle of the nineteenth century. At the same time, the overall population of both people and livestock was increasing, and the economy was characterized by expanding mercantilism (Cordell 1979; Levine 1991).

A growing number of Americans became involved in trading in New Mexico in the early years of the nineteenth century. The Santa Fe Trail, running from St. Louis to Santa Fe, traced the steps of William Becknell, a particularly successful trader who made his first trip west in 1821. The trail, the United States portion of which was formally surveyed in 1825, quickly became the route by which American and other traders not only traveled to Santa Fe but also continued on the *Camino Real,* the royal road, north to Taos and south to Chihuahua and beyond (Pratt and Snow 1988:283–286). Merchants on that trail carried an

estimated 150,000 dollars' worth of goods by 1828 and 5 million dollars' worth by 1855 (Pratt and Snow 1988:380–381).

Mexico's relatively weak investment soon clashed with the robust United States expansionist movement. In 1846, the US Army, under the command of General Stephen W. Kearny, captured New Mexico as a territory of the United States. Almost immediately, attention turned to protecting the growing economic activity of the region. Kearny's successor had orders to march south to Chihuahua and continue the war against Mexico, but they were almost immediately superseded by orders to march west against the Navajo instead (Pratt and Snow 1988:308). The US government also sponsored the construction of forts, starting with Fort Marcy in Santa Fe in 1846, Fort Union on the eastern side of the Sangre de Cristo Mountains in 1851, and Cantonment Burgwin near Taos in 1852. In many ways, however, the American occupation and administration were superimposed upon a society and economy that were relatively unchanged since the earliest Spanish period. Communities were isolated and relatively dispersed, the economy was still based on extractive activities such as livestock ranching, and there were continuing conflicts between ruling authorities and native people. The difference was primarily one of scale as larger amounts of cash came into the local economy and more resources were devoted to the suppression of raiding.

One significant change, however, is found in the classification and administration of land. Pueblo groups retained their land, but the overlapping grant boundaries inherited from the Spanish period became the subjects of numerous court cases as new Anglo-American settlers sought to adjudicate exact boundaries. This process caused particular difficulties for Hispanic landholders, many of whom lost their lands in the process (Abbink and Stein 1977:165). Another shift in land management resulted from changes in the perception of appropriate land use. As in many other regions of the arid West, Eastern expectations about farming and homesteading in these newly acquired territories were thwarted by climate and topography. The original Homestead Act of 1862 limited land claims to 160 acres, on the basis of assumed family requirements for agriculture east of the Mississippi. When many Western settlers failed to "prove up" on their 160-acre claims, the act was supplemented by further legislation such as the Stock Raising Homestead Act of 1916, which allowed individual claimants an allotment of 640 acres of land suitable only for grazing (Oakes 1983). Even these larger allotments often proved unprofitable for the smallholder and resulted in the sale of land to larger ranch owners once the claims had been proved (a process that usually took about seven years). The result was the reappearance of large land holdings, now based on investors' abilities to consolidate smaller parcels into rangelands capable of supporting large herds.

Starting in the earliest Spanish period, the management of livestock in New Mexico was based in the *partido* system, in which large herd owners parceled out portions of the herd to individuals in exchange for an annual return in lambs and wool (Baxter 1987:28). This system was ideally suited to New Mexico's rugged terrain and to its large numbers of sheep. As Baxter (1987:95) noted, however, the shepherds were frequently placed at a disadvantage, because they absorbed the responsibility of protecting the herd from drought, hunger, and other calamities while the ranchers retained the security of a customary 20-percent return.

Whereas in the Spanish period sheep were routinely driven south to cities such as Durango and Chihuahua, in the territorial period the impetus to stock raising came from expanding markets in the California and Colorado mines (Tainter and Gillio 1980). By 1850 New Mexico had more sheep than any other Western state (Figure 2.2); between 1850 and 1860, the number of sheep grew by one-half million to a total of 830,000 (Carlson 1969). Although wool quality was poor, this was not a concern, because the lack of transport precluded any effective competition with wool from the Midwest and the East. Destined primarily for meat markets, many thousands of these hardy *churro* sheep were herded overland on the Old Spanish Trail through Utah, as well as along southern routes that crossed the Colorado River at Yuma, Arizona (Baxter 1987:112–128).

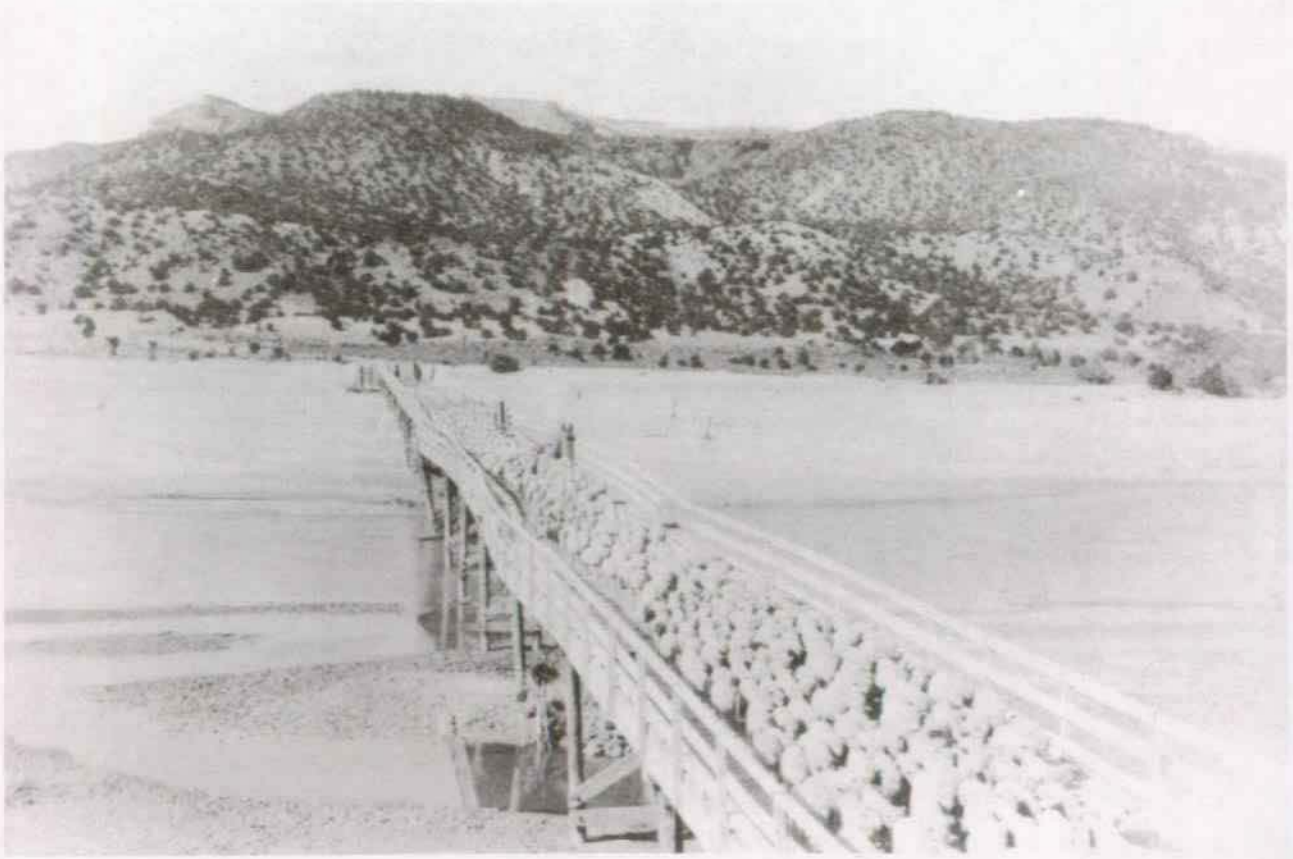


Figure 2.2. Sheep crossing the bridge on the Rio Grande at Buckman. Photograph courtesy of Bandelier National Monument, neg. no. 01608A (1922), cat. 14336.

The coming of the railroad to New Mexico in 1879 initiated significant changes in the West's nascent extractive economies of ranching, mining, and logging. In 1891, the Atchison, Topeka and Santa Fe reported shipping 700,000 sheep in a single year (Carlson 1969). The enormous quantity of domestic livestock indicated by these figures increased local involvement with the external market economy of the expanding United States. Mercantile traders prospered, using the improved transportation networks to bring in desired goods such as food staples, which were exchanged for wool and other products such as beans, lumber, and grain (Kutsche, Van Ness, and Smith 1976; Oakes 1983).

A modified *partido* system continued as merchants now took the place of ranchers and gave out cash and merchandise advances against the value of lambs and wool. The terms of these contracts continued to favor the herd owners, who now often owned the large landholdings on which the sheep were grazed as well as the stores in which shepherds were obliged to purchase desired goods (Rothman 1989:209–211, 1992:128–130).

The railroad was also the first expedient means of hauling bulk freight, and the three industries of mining, logging, and railroads worked in concert: railroads needed wood for ties and trestles; mines needed lumber for props and supports; and the railroad hauled ores, timber, and finished goods (Cordell 1979:129). The effects on the Bandelier region included an increase of population and activity on the peripheries of what are now the monument's boundaries. Timber was cut in southern Taos County, and "a narrow gauge railroad moved the logs to the Peñasco area, where a saw mill cut most of the lumber into ties. The ties were floated down available streams during high water to the Rio

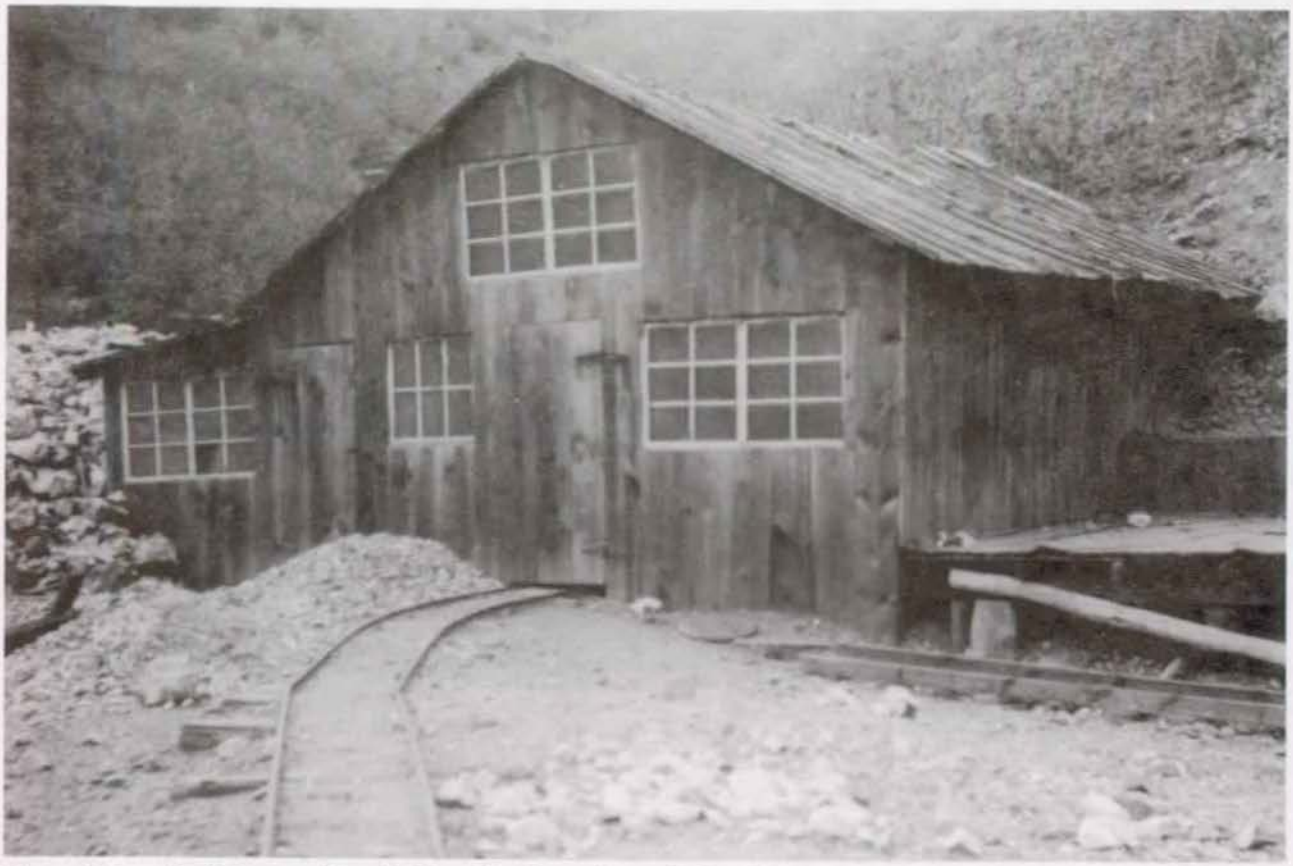


Figure 2.3. Building at Bland, New Mexico, about 1900. Photograph courtest of the Museum of New Mexico, neg. no. 93187.

Grande, and then to about the area of Cochiti Pueblo. There a standard gauge railroad was built to carry ties to the main line of the Santa Fe railroad, which then moved them to the treating plant in Albuquerque" (Cordell 1979:129).

The railway stop of Buckman, on the east side of the Rio Grande across from the Tsankawi area, was built in 1880 as a siding for the Denver and Rio Grande Railroad. It "served as a water stop and lumber and livestock loading station throughout much of its history until its abandonment in 1941" (Wiseman 1978:1; see also Rothman 1989). The specific impact of lumbering on the Pajarito Plateau is less well known than that of mining or the railroad. With few physical modifications to the landscape other than the removal of trees, the precise effects of logging on the archeological landscape are also difficult to trace. In addition to these large-scale commercial activities, local wood haulers in the early part of the twentieth century apparently did a brisk business lumbering from both the higher elevations and the Rio Grande area, and one later source observed that the entire area north of Frijoles Canyon was "checkerboarded with wagon roads where Mexicans have been hauling wood" (Attwell 1933:2).

Among the mining towns on the Pajarito, Bland is perhaps the best known (Figure 2.3). Williamson (1997:7) reported that during the boom years of the late nineteenth century, some 150 mining claims were filed in the two narrow canyons around Bland alone. As it did for ranchers, however, the legacy of Spanish land grants engendered legal difficulties. The Albemarle mine area, located only 2.7 km (1.5 mi.) southwest of Bland, was claimed under four different land grants, a situation that was finally resolved by the US Supreme Court in 1897 (Staley 1981:9). Both of these mines enjoyed a quick boom-

and-bust cycle. At Bland, mining started around 1894, and by 1900 the town had a population of 3,000 people. Shortly after 1904 the mine played out, and the town was abandoned (Julyan 1996:42; Sherman and Sherman 1975:213). Albemarle flourished for an even shorter period, although, like Bland, it had been the subject of considerable building and modification of the landscape to accommodate as many as 500 workers (Sherman and Sherman 1975:2; Staley 1981:9).

While the Pajarito area was the focus of logging, mining, and ranching, there were other economies in which it appears not to have participated. The US Army maintained a considerable presence in northern New Mexico, but forts and military units were located at some distance from the area now encompassed in Bandelier National Monument. The region may, however, have experienced some of the economic effects generally ascribed to the army's presence: army payrolls and government contracts that introduced more cash into the economy, and a demand for meat that helped to fuel the sheepherding boom of the mid-nineteenth century (Cordell 1979:121; see also Crass and Wallsmith 1992).

By the late nineteenth century, the American involvement in New Mexico had grown to include scholarly and scientific inquiry. In particular, the links between living Pueblo peoples and archeological remains captured the attention of early anthropologists. Prominent among them was Adolf Bandelier, the Swiss-born explorer for whom Bandelier National Monument is named. Bandelier visited the region in 1880 and recorded some of the many prehistoric remains on the Pajarito Plateau, producing works of lasting academic interest as well as a fictionalized narration of Pueblo life, *The Delight-Makers*. The gifted and eccentric linguist J. P. Harrington came to study Pueblo peoples and their languages (Harrington 1916). Early archeologists included Edgar Lee Hewett, Barbara Freire-Marreco, Neil Judd, A. V. Kidder, and Sylvanus Morley. They found the Pajarito Plateau, with its well-preserved prehistoric remains in mounds and cavelike structures, or "cavates," especially appealing as a subject of research (Hewett 1909; Judd 1962). Located close to Santa Fe, these archeological remains became a focus of public attention as well as a patriotic rallying point for New Mexicans seeking greater control over resources that were otherwise being appropriated by large Eastern museums (Snead 1999, 2001).

The move to convert New Mexico from a territory into a state came comparatively late, even by Western standards. New Mexico became the forty-seventh state in 1912, but the earliest years of statehood were characterized by the same economic and social configurations as before. Farming continued in areas where it could be practiced, with the availability of water being the significant constraint. Mining activity fluctuated, and stock raising continued to undergo boom-and-bust cycles. During World War I, the War Finance Office encouraged stock raising by giving easy loans on cattle and sheep; in 1919, these loans were called in, and many ranchers in New Mexico lost heavily.

In Frijoles Canyon, Judge A. J. Abbott established the Ranch of the Ten Elders starting in 1907–1908 (Figure 2.4). According to Harrington's (1916:410) Bureau of American Ethnology report, this marked the first time that anyone had lived permanently in the canyon "for many years." The ranch was primarily a farming operation, similar to other farms in the region (south of the present monument's boundary was the farm purchased by James Young in the 1920s and developed as an apple orchard in the 1930s [Wills 1997:11]). In 1925, the Ranch of the Ten Elders was taken over by George Frey and Evelyn Frey. They housed canyon visitors and carried out a small ranching operation; a 1952 document indicates that the farm covered about 50 acres (20 ha) of the canyon floor (Anonymous 1952:12; Figure 2.5).

Farmers reused, modified, and altered the prehistoric landscape and features, including the irrigation ditches (*acequias*) bordering the creek, which Adolph Bandelier had noted in his report of 1892 (1892:141). The prehistoric remains of Frijoles Canyon were also modified by archeologists who came to excavate the site of Tyuonyi in field schools starting in 1908 (Figures 2.6–2.9). Some of these archeologists, including Bandelier himself, even used the canyon's

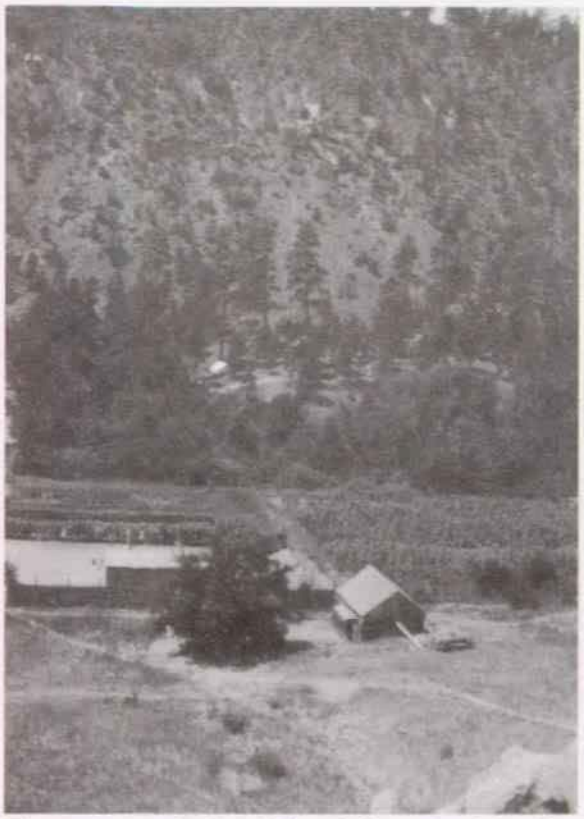


Figure 2.4. Judge Abbott's Ranch of the Ten Elders, Frijoles Canyon. Photograph courtesy of the Museum of New Mexico, neg. no. 83042.

prehistoric cavates as living quarters (Toll 1995:5). Neil Judd, one of the participants in Hewett's excavations of 1910, recalled his residence in a "suite" of cavate rooms in Snake House (cavate Group E) (Judd 1962:140). An early photograph shows one such cavate with a suitcase, bedroll, and other personal items (Figure 2.10).

In addition to investigations of sites, the interaction of Pueblo people and new Anglo-American settlers took the form of creative endeavors and the beginning of what was to become a vibrant arts community in northern New Mexico. The "revival" of native arts and crafts created new economic opportunities and new social configurations sponsored by wealthy patrons. One pair of such patrons was Vera von Blumenthal and her companion Rose Dougan, who, around 1918, constructed a series of dwellings later known as Duchess Castle on the ruins of a prehistoric site near Tsankawi (Anonymous 1959). With the assistance of local Pueblo people, they built a residence, school, and art center, in which they focused their attention on art activities. The complex was occupied until around 1928, when the women left to return to the West Coast.

The increased scholarly activity and public use of the Pajarito area prompted a movement to protect the region and remove it from extractive industries such as ranching and logging. But the active use of the area by people making a living off the land created a built-in opposition to development of the area as a national park, because this threatened to eliminate private grazing rights. When the possibility of Pajarito National Park was first raised in 1899, sentiments against greater federal involvement in local land matters were strong. General opinion in New Mexico held that the government controlled too much land, and specific opposition came from local ranchers who foresaw the closure of their land to cattle and sheep (Rothman 1988). Additional players in the development of a national park were the prominent archeologist Edgar Lee Hewett, the National Park Service, Santa Clara Pueblo, and the US Forest Service. Finally, in 1916, a compromise was reached among all these groups, and a monument of 22,400 acres was established within the Jemez National Forest, with the Forest Service as guardian agency (Rothman 1988). Since the area was to be managed by the Forest Service, grazing rights continued. Not until the monument was transferred to the National Park Service in 1932 was grazing curtailed in the area of Bandelier (Figure 2.11; for a complete administrative history of the monument, see Rothman 1988).

The transfer to National Park Service jurisdiction occurred at a moment of dramatic economic events throughout the nation. Bandelier National Monument, like many other National Park Service properties, was the beneficiary of federally sponsored work programs during the Great Depression. The next occupants of Frijoles Canyon were members of the Civilian Conservation Corps who built and lived in a large camp in the canyon bottom from 1933 to 1940 (Figure 2.12). The CCC

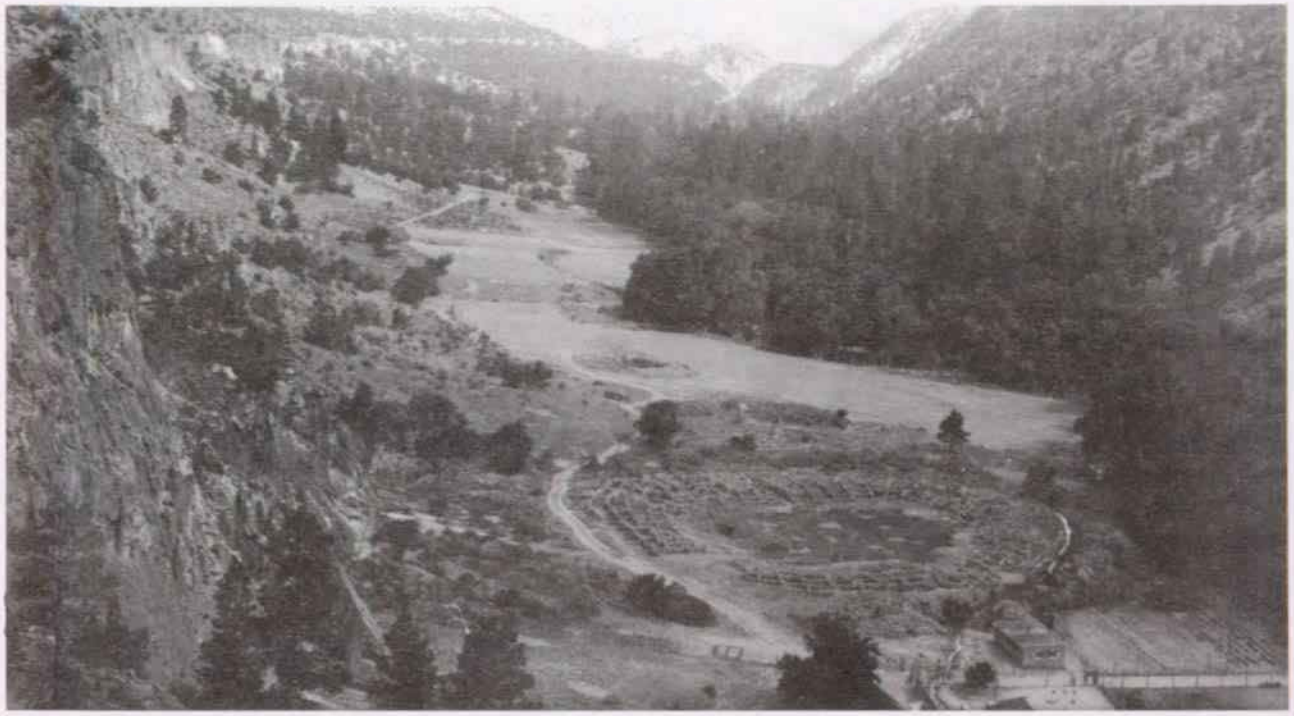


Figure 2.5. Frijoles Canyon with farmland. View toward the east, with Tyuonyi in the foreground. Photograph courtesy of the Museum of New Mexico, neg. no. 94061.



Figure 2.6. Excavations in progress at Tyuonyi, 1910. Photograph courtesy of the Museum of New Mexico, neg. no. 28693.



Figure 2.7. Excavations of Tyuonyi room-blocks, probably about 1910. Photograph courtesy of the Museum of New Mexico, neg. no. 89971.

was one of the most successful Depression-era jobs programs, enrolling young men who were instructed in a trade and paid a nominal wage (Paige 1984; Salmond 1967). At Bandelier National Monument, the enrollees were taught to build fences and roads, quarry stone, and make furniture. The grand culmination of the works project was the creation of the Bandelier visitor center complex, including administration buildings, a museum, and an inn and restaurant to replace the structure that the Freys had owned adjacent to Tyuonyi (Harrison, Copeland, and Buck 1988; Montoya 1995; Rothman 1988; Smith 2001). The CCC also organized the cleanup of previous excavations and performed other actions designed to assist in developing the monument as a center for visitor enjoyment and education.

Throughout the twentieth century, the actions of the federal government have had the greatest impact on the area of Bandelier National Monument and the surrounding region. The presence of government agencies including the Forest Service and the National Park Service brought income, investment, and infrastructure to the area (Rothman 1992). During World War II, the adjacent community of Los Alamos was the site of the Manhattan Project, in which the first nuclear bombs were theorized into existence. The monument became its backyard, one of the few places regularly accessible to scientists and their families (Harrison, Copeland, and Buck 1988:30–33). The relationship between the Los Alamos community and the monument continues to be a close one, as is reflected in support organizations such as the Friends of Bandelier. At the same time, the extractive economies of logging, ranching, and mining continue to have repercussions for social and political activities in northern New Mexico. Logging in particular continues to be a contentious issue in the Jemez Mountains. It was cited as the principal impetus for the National Park Service's acquisition, in 1977, of the headwaters of the Frijoles drainage from the ranch known as Baca Location Number 1 (Figure 2.11). In the summer of 2000, the federal government purchased the entire Baca Location Number 1 (16 USC 698u-7 *et seq.*), another important step in a process of public land acquisition on the Pajarito Plateau that had started nearly a century earlier.



Figure 2.8. Kenneth Chapman recording cavates. Photograph courtesy of the Museum of New Mexico, neg. no. 28089.



Figure 2.9. Early field camp. Photograph courtesy of the Museum of New Mexico, neg. no. 83049.



Figure 2.10. Cavate with suitcase. Photograph courtesy of the Museum of New Mexico, neg. no. 28099.

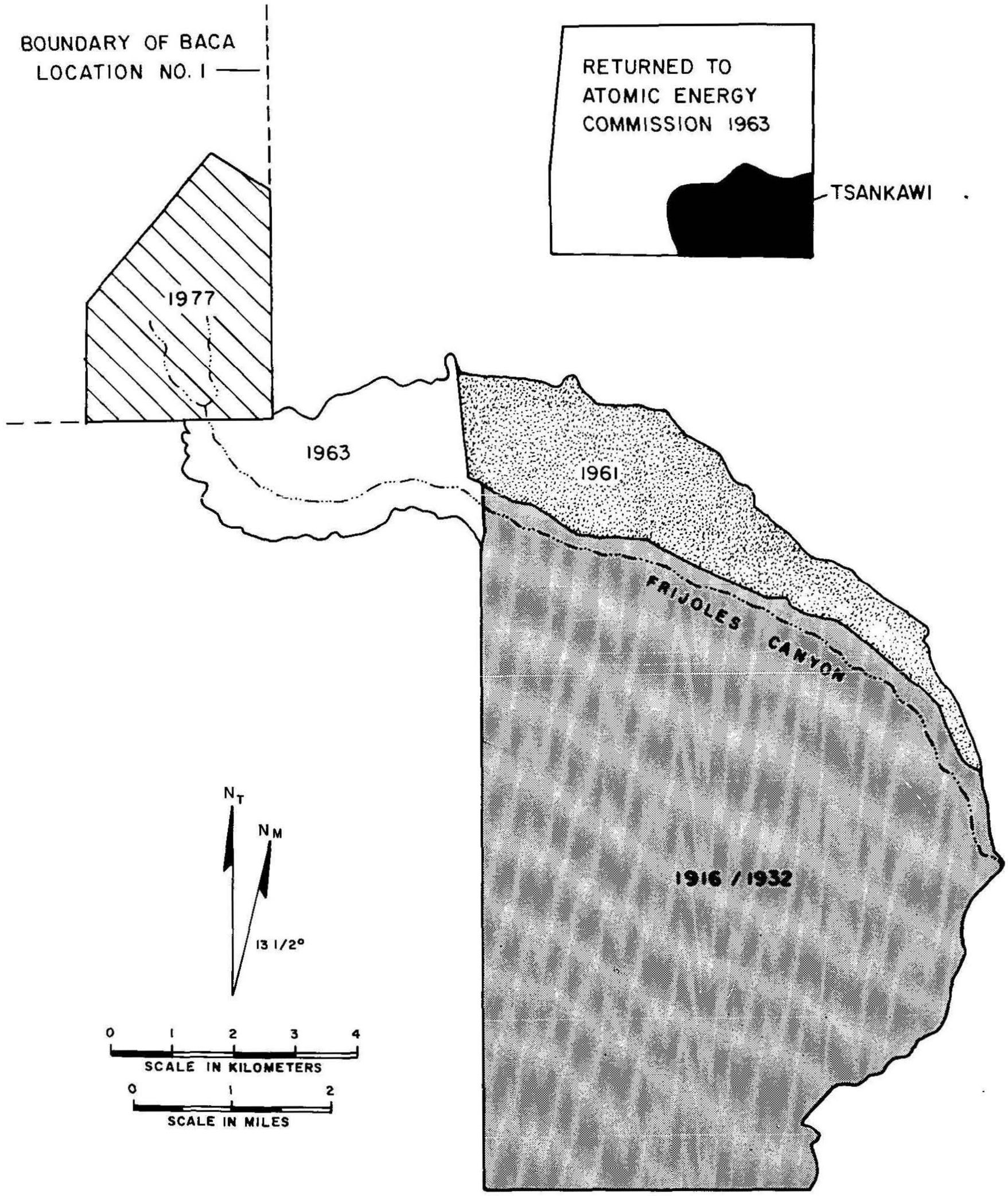


Figure 2.11. Growth of Bandelier National Monument.



Figure 2.12. Civilian Conservation Corps camp in Frijoles Canyon, 1934 or 1936. Photograph courtesy of Bandelier National Monument, neg. no. 02067A, cat. 14020.

3

The Historic Archeological Record and Its Analysis

The appearance of written records in a human cultural tradition generally sheds light on only certain aspects of social, economic, and political organization. Studies of material culture and the organization of space enable a different, often more comprehensive understanding of human cultural activities in the past and present. In northern New Mexico, numerous recent archeological studies have been devoted to the early historic period, using both historical and archeological records (e.g., Foxx and Tierney 1999; Lycett 2000; Preucel 2000, 1998; Thomas 2000; Trigg 1999; Wills 1997, 1998). Principally focused on the effects of Spanish contact, these studies have examined the process of colonization as one that involved many compromises between colonizer and colonized, and they have looked at how new ethnic identities began to be formed as individuals blurred their previously held ethnic boundaries (Trigg 1999).

Archeological manifestations of the historic period at Bandelier National Monument include changes in settlement patterns and material culture in three successive waves. The first significant economic and social change involved the introduction of large domestic mammals, including cattle, horses, and sheep, all of which came into New Mexico during the earliest contact period, after the arrival of the Spaniards. The subsequent widespread adoption of livestock prompted many people to locate their habitations on the basis of herd animals' needs for water and shelter rather than on the basis of agricultural potential, which had overwhelmingly affected choices of site location in the prehistoric period. New architectural features included corrals and pens, facilities for feed storage, and fencing and other means of protecting animals against predators. Tool inventories were increased by the use of harnesses and horseshoes as well as carts, carriages, and wagons. At the same time, basic architectural techniques remained the same, so that dry-stone masonry was employed for constructing walls, and cavate structures were used for habitation and shelter.

The next change in settlement pattern was prompted by the new transportation technologies of the railroad and the extractive economies of logging and mining in the nineteenth century. The impact of these technologies was felt all over the American West, which had become a zone for resource extraction tied to a larger world economy anchored in the eastern United States. The archeological manifestations of these activities tend to be localized in the form of mining and logging encampments and fixed installations such as the railroad. Finally, the twentieth century witnessed new technologies such as automobiles, which permitted autonomous and self-directed travel wherever roads could be carved. The automobile reached the northern Rio Grande less than 30 years after the railroad and had a rapid and significant impact. Roads, culverts, and bridges were built; ancillary facilities such as gasoline stations and garages were constructed and staffed; and the landscape became littered with discarded

automobile parts. Combined with the increased perception of leisure, recreation, and education as personal rights claimed by a growing number of Americans, access to automobiles helped to transform the Pajarito Plateau into a cherished recreational "backyard" for the Santa Fe region.

The Survey Project

The goal of the Bandelier archeological survey project was to survey a large, representative sample of the monument for both management and research purposes. A pilot project was undertaken in 1985 to test logistics and approaches to data recording (McKenna and Powers 1986). The full survey, utilizing teams of archeologists from the National Park Service regional office, ran for five summer field seasons from 1987 to 1991. In this time, a total of 43% of the monument was surveyed, covering all vegetative and topographic zones (Powers and Van Zandt 1999). The standard units for recording archeological information were the "site" and the "isolated occurrence." A site was defined as "one or more structural features and/or six or more associated artifacts," whereas an isolated occurrence was either a single feature without ancillary artifacts or a significant artifact such as a projectile point (Powers 1999:61–62). At the time of recording, sites were identified with descriptive labels (e.g., pueblo, cavate, small structure) as well as evaluations of cultural affiliation (e.g., Archaic, Anasazi, "prehistoric unknown"). Within periods of cultural affiliation, a "component" designation with absolute dates was assigned on the basis of artifacts found at the site. Each site was assigned a New Mexico Laboratory of Anthropology (LA) number; isolated occurrences were given sequential numbers up to three digits in length.

The research questions and survey design of the Bandelier project were intended to address primarily the prehistoric period, a framework for data recovery that has important implications for discussion of the historic data. In the course of the 1985 test survey, it was recognized that there was a potential for the recovery of historic materials (Powers 1988). The standard site form was subsequently expanded to include categories for historic structures (e.g, corrals) and component types linked to historic-period ethnicity (historic Pueblo, historic Spanish, historic Anglo, historic unknown). Historic artifacts such as metal and glass were recorded on specially designed recording forms (see Appendices 1 and 2). To avoid recording purely modern occurrences, a cutoff date for recording "historic" materials was established at 1960. With the exception of some discrepancies in the recording of historic materials in the first survey year (1987), the project achieved a high level of consistency in data recording throughout the five field seasons.

The subsequent analysis of the historic data base at Bandelier had as its goal the elucidation of two very different types of historical phenomena: the presence of Pueblo people in the early historic period and the nature and extent of late-nineteenth- and early-twentieth-century human use of the area. These two types of historic activities, because of the quantities and varieties of physical remains associated with them, required different approaches to the data base. For the earliest historic period, any evidence of human activity was considered significant, because the sum total of such evidence was low. What would otherwise have been treated as the "trailing edge" of archeological data was treated as the principal (and only) evidence for human presence and activity in the area. For later periods, when materials were more abundant, the context permitted a higher threshold for evidence of significant human activity, with the result that more sophisticated questions could be asked of the data set, beyond mere presence or absence.

An initial examination of the data collected by the survey indicated that a very small number of historic Pueblo components had been identified in the field (n = 9). This very low site density resulted from factors both historical and methodological, relating to the actual probable density of Pueblo people in this area after the Spanish incursion as well as the methods of recording field data. One important factor limiting the visibility of historic Pueblo use was the method used to distinguish archeological components. For data-recording purposes, "component" was defined as "the group of structural or refuse features that can be dated to a specific time interval by their association with

dated artifacts, primarily ceramics" (Powers 1999:66). In cases where Pueblo occupation ran continuously from the prehistoric period into the historic period, recorders were instructed to assign the site a single component—Anasazi. The "component" portion of the archeological field data recording form, used afterward to sort the resulting data set by time period, thus unavoidably obscured many instances of historic Pueblo use.

In the Tsankawi area, no sites except for Tsankawi itself (LA 211) were assigned a historic Pueblo component; historic sherds at other sites in the area were probably considered at the time of data recording to be vestiges of Tsankawi's occupation rather than actual historic sites. As will be shown by the list of such sites, the failure to formally indicate historic Pueblo components in the field obscured the rather large occupational "halo" around the site of Tsankawi, where there was probably a great deal more historic occupation than that indicated within the formally delineated site boundaries of LA 211. For future projects, I suggest that the momentous changes brought about by the arrival of Europeans justify separating site components at the prehistoric or protohistoric divide, in order to promote the visibility of historic occupations (for an example, see Kirkpatrick 1980).

The area of Tsankawi was not the only portion of the monument that had historic-period sherds without historic component appellations. Thus, the approach I took for the earliest historic periods was one of data magnification, done by searching for historic-period ceramics throughout the whole site data base and setting a low minimum threshold (n = 1 historic sherd) in order to capture as many indicators of early Pueblo activity as possible. Because few documents from this period have survived, and because the extent of early historic occupation is poorly known, this data maximization procedure allowed any and all evidence for historic Pueblo activity to be documented.

For the later historic period (after 1850), since the objective was to capture large-scale rather than ephemeral activity, I developed criteria to exclude very low-density artifacts and activities from the analytic data base, even though some of those phenomena were clearly historic (e.g., hearths, cans). The rationale was that unlike other periods, such as the Archaic or the earliest historic, for which there could legitimately be questions of presence or absence, for later historic times the availability of written documents from this area left no doubt that people had been active there. Thus, the questions asked of this portion of the historic data base were more complex, addressing topics of settlement location and function, local consumption patterns, and the extent to which herders and ranchers of this area participated in a growing national market economy.

For purposes of analyzing the historic materials for this volume, I made several alterations to the raw field data beyond assessing the impact of recording strategies. The first alteration concerned the definition and minimum-density criteria for historic sites. Given that the survey project was designed to meet research and management goals for the prehistoric period, the concept of the "site" as the field recording unit, representing a locus of past human activity, often fragmented historic-period activity loci into several sites. Once plotted on a map, the nature and proximity of these historic loci indicated that they really represented one site rather than several. Thus, the first step in data management was to consolidate sites into clusters for analysis. The merging of sites into clusters also eliminated the problem of characterizing individual activity loci; in the field, equivalent quantities of historic artifacts and minor features might sometimes be recorded as a "camp" and at other times be labeled "historic trash," a recording dilemma seen in other Bandelier surveys (see Traylor et al. 1990:19, 57). By combining sites into larger activity areas, the labels given to individual loci became less important, and the whole function of the activity cluster became the focus of analysis.

A second alteration of the data base concerned the assignment of ethnicity to the historic components. Although the assignment of ethnicity in the field had been an attempt to gain precision, the resulting identification was often more exclusionary and definite than the artifactual materials could support. The assignment of ethnicity also had the unwitting effect of rendering some

groups less visible than they actually were historically. For example, the tendency to assign a "historic Anglo" ethnicity to farms and property in Frijoles Canyon, as well as to the National Park Service component, implies that Hispanic peoples' involvement at Bandelier ceased with the creation of homesteads and the later development of the area as a national monument. The field-assigned component types of historic Pueblo, historic Spanish, historic Anglo, and historic unknown are somewhat deceiving in their specificity, given the relative paucity of artifactual remains at historic sites at Bandelier and the difficulty of assigning ethnicity solely on the basis of material culture.

In New Mexico generally, there was considerable variability within and between different groups in the historic period with reference to both material culture and space (Cordell 1979:106–107; D. Snow 1992:185). For example, the exclusive association of historic Pueblo people with historic Pueblo ceramics is a potentially misleading correlation, because early Spanish colonists used Pueblo ceramics in lieu of metal and ceramic vessels from Mexico, which were in short supply (D. Snow 1976). Even for later periods, historic Pueblo ceramics have been recovered from sites occupied by non-Pueblo people (Williamson n.d. [1994–1995]). Conversely, Spanish items were traded and given as gifts to non-Europeans, so that any archeological record could contain items of diverse origins. Even markers of ethnicity that are specific to individuals, such as name inscriptions on boulders or cavate walls, are difficult to interpret because of the cultural and familial interconnections among Pueblo and Hispanic people throughout the historic period in northern New Mexico. Nor can the layout and structure of sites provide reliable clues: as Brugge (1983:185) has observed, "continuity of activity patterning across periods of great cultural change cannot be relied upon for demonstrating ethnic identity in archaeological sequences."

Finally, the functions of historic sites as recorded in the field were submitted to modification in the analysis. In the recording process, the evaluation of prehistoric and historic sites at Bandelier had followed different logics. For the prehistoric period, structures were assumed to have been residential, and so the remaining evaluative criteria were quantitative—for example, the number of rooms. The recording procedure for historic sites required a *qualitative* judgment about site function. This was often difficult to make in the field, because historic activity loci were recorded as a number of different "sites" and because the small quantity of remains made any assignment of function difficult. The term "camp" serves as one example of a type that was applied to a variety of structures and features, from cavates (site 60109) to single hearths (site 60110); it was also used interchangeably with the category "historic trash." In the clustering procedure described below, individual site function as assigned in the field was disregarded in the initial stages of the analysis.

Methodology: What Is a "Site" in the Historic Period?

Site-definition strategies vary from project to project and from region to region (e.g., Acklen, Earls, and Kramer 1988; Fox 1992; New Mexico Bureau of Land Management 1987; Ohio Historic Preservaton Office n.d.; Reher 1977; Wemberly and Rogers 1977:58–61). For the historic period in North America, the definition of a site tends to follow temporal rather than regional criteria, with the result that sites are defined using criteria established in the American East. Many types of sites in the American West, however, are not covered by the legalistic site definitions (often of spatially large sites) devised for the East. It is ironic that for time periods before about A.D. 1900, prehistoric sites in the American West often have greater quantities of materials per site and exhibit longer periods of occupation, more substantial architecture, and larger populations than historic sites. Capturing the diverse, extensive, and often materially poor manifestations of historic-period activity requires the development of site-definition criteria that are specific to the region.

The problem of site definition entails five aspects: (1) establishing the minimum quantity of cultural material required to determine that there is a "site"; (2) defining the limits or boundary of a site on the basis of artifact density or other criteria; (3) categorizing individual sites into types for analysis;

(4) establishing the date at which material is considered to be historic rather than contemporary; and (5) recognizing the *potential* diversity of activities in different time periods.

Accompanying the greater potential variety of artifactual materials in the historic period is the greater potential quantity of such goods. At the same time, the higher disposability of such goods increases the frequency of discard. The use-to-discard ratio for the historic period thus encompasses a paradox. On one hand, historic period materials generally represent discard or disposal rather than manufacturing waste (as prehistoric lithic debitage would be, for example). By this standard, *less* historic material is required to demonstrate a locus of activity. Site and component recording often followed this line of reasoning during the archeological survey at Bandelier, resulting in some historic components being defined on the basis of a single artifact. On the other hand, patterns of consumption and discard are different for the historic period, with single use episodes typically followed by immediate discard. One common example of this single-use patterning is food preparation using canned goods, in which one meal could produce a rather large quantity of waste. By this standard, *more* historic material should be required to demonstrate a locus of significant activity (recycling of containers by modification was relatively rare, although metal and glass containers could have been used repeatedly prior to final discard). This paradox cannot easily be resolved.

Observed archeologically, the addition of new items into a material culture complex may result in new deposition behavior in addition to delineating new types of activities and expanding the boundaries of sites. One Southwestern example of changes in trash deposition patterns is seen among the Navajo, for whom the introduction of nonbiodegradable refuse items prompted a change in deposition patterns. "Trash in aboriginal times was of minor consequence or naturally degradable and did not cause problems. . . . In recent years, the accumulation of nontraditional trash presented a problem that has been solved by the establishment of formal trash heaps at a much greater distance from the hogan than is the ash heap" (Brugge 1983:186). In this case, both the locus and the manner of trash disposal were changed. The problem repeated itself throughout the Southwest, with the greater amount of refuse related to Euro-American consumer goods.

Timothy Maxwell made a similar observation for the trash deposits at the Cavenaugh homestead site near Las Vegas, New Mexico. He suggested that nineteenth-century homesteaders did not have space constraints imposed by neighbors and that "the area available for refuse disposal would be much greater than for people living in a town" (Maxwell 1983:94). As a result, the expectation of close-in trash deposition (which seems to be the case for prehistoric Pueblo sites on the Pajarito Plateau) may underestimate the amount of land actually in use around a residential or functional complex when historic sites are recorded using a prehistoric-site paradigm.

Defining historic site boundaries on the basis of historic archeology elsewhere in North America poses a different problem. Eastern sites consist of features and components indicating multiple activities and a certain site longevity, or they have boundaries delimited in legal terms such as the house lot. Writing of the eastern seaboard area, Stanley South characterized "sites" as large-scale entities such as forts, plantations, towns, or farms, whereas any smaller, single-purpose entity (e.g., a dwelling, smokehouse, tavern, smithy, corncrib, or brothel) was identified as a mere "ruin" (South 1979:220, 227). By these standards, most historic activity loci in the western United States could not qualify as "sites." Activities such as ranching and sheepherding do not produce permanent settlements for those accompanying animals to pasturage, and dwellings are often opportunistically located in rockshelters and cavates or are made of easily moved, perishable materials such as canvas or brush.

In other words, prehistoric site definitions as they currently stand will overestimate the number of historic sites, but historic-site definition criteria based on eastern US models will underestimate that number. What appears to be needed is a historic-site

definition and boundary criteria that accurately capture the remains of historic activity in the western United States. The realities of differential site definitions are suggested by Michael Schiffer, who wrote that "the definition of 'site' employed by survey archeologists varies greatly from project to project and is itself a source of variability that needs to be assessed. In general, where the regional archeological record is sparse, investigators tend to use more generous definitions of site that can encompass small artifact scatters" (1987:350).

This acknowledgment that even a basal category such as "site" is subject to regional variability based on prior knowledge poses grave implications for comparability. For the historic-period Southwest, one means by which this could be accomplished is to compare historic sites and residence-to-trash distributions for different types of sites (e.g., prehistoric Pueblo sites, Navajo sites, homestead sites, and temporary encampments). In the absence of such a study, the following analysis of the historic components from Bandelier utilizes a site definition that acknowledges both the greater *potential* quantity and diversity of historic-period materials and the relatively low quantities of those materials actually recovered by the survey. For the purposes of the data analysis undertaken for the Bandelier historic ranching and homesteading materials, a "site" is minimally composed of a historic structure (e.g., a corral, built structure, or reused cavate) *or* a historic minor feature accompanied by a minimum of three historic artifacts. This artifact threshold was chosen to eliminate the "noise" of twentieth-century visitations that have produced a light scatter of historic trash over the entire monument. The analysis of historic-period materials in chapter 4 is based upon the reorganization of recorded data to encompass this site definition.

Methodology: Chronological Considerations

Numerous dating schemes for the historic period in New Mexico have been developed, primarily on the basis of large-scale political shifts such as initial Spanish contact, the Pueblo Revolt, and the beginning of United States territorial administration. The division of the earliest periods of post-Columbian contact is the least consistent. Some scholars, viewing the archeological record from the Puebloan point of view, have identified the period from the mid-fifteenth century to the Pueblo Revolt as the "protohistoric" period (e.g., Haas and Creamer 1992; Wilcox 1991:144–145). Others, placing an emphasis on the European impact, have referred to the same era as the "early Spanish period" (Schroeder 1992:30) or the "Colonization Phase" (Abbink and Stein 1977:154). The period after about A.D. 1700 correspondingly becomes the "late Spanish period" (Boyer 1992:234) or the "Colonial Phase" (Abbink and Stein 1977:157).

These periodizations imply that the Pueblo Revolt (A.D. 1680) is an appropriate dividing line for understanding social organization and cultural change in northern New Mexico. The revolt, along with the Spanish reconquest beginning in 1692, is an event that has subtly guided both historical and archeological scholarship. As Snow (1992:186) observed, Spanish documents "tended to focus archaeological attention on the sixteenth-century entradas, on the 'troublous times' of the seventeenth century, and its August 1680 result, or on the internal or external military and Indian affairs of the eighteenth-century colony." However, it is debatable the extent to which the Pueblo Revolt, although clearly an event of political importance and documentary investment, was responsible for fundamental social and economic changes. Historical documents and archeological remains suggest that many of the same types of economic activities (agriculture, mining, livestock management), social contacts (between Spanish colonists, Pueblo peoples, and nomadic groups), and architecture (churches, haciendas, pueblos) existed both before and after the Pueblo Revolt, meaning that sufficiently distinct differences in material culture may be difficult to identify on the ground.

Indeed, significant demographic and cultural changes could serve to break chronological periods at a variety of intervals. For example, there were droughts and raids from around 1580 to 1610 that resulted in abandonment of some northern pueblos and an increase in the number of southern pueblos (Orcutt 1999b:239; Schroeder 1992:34). There was

massive depopulation of pueblos due to epidemics in the early decades of the seventeenth century (Schroeder 1992:30). If chronological periods were to be divided on the basis of changes in material culture (as is the case for prehistoric periods), then a particularly marked divide is apparent at about 1750, when pottery styles throughout the Southwest changed dramatically in both form and design (Harlow 1973:31).

However, the chronology of many archeologically recovered ceramic types has itself been linked to key historic periods (for example, H. P. Mera in his seminal works often designated historic-period ceramics as "pre-revolt" or "post-revolt"). As a result, a chronological break at around 1700 is unavoidably built into the data set. Future studies of historic-period contexts in which multiple dating techniques are used may provide finer gradations for the historic period in the same manner as for the prehistoric period (e.g., Orcutt 1999a).

For the purposes of analyzing the Bandelier data set, I use a neutral terminology, following Trigg's (1999) assessment of the complexities of interaction between different "ethnic" groups. A similar call for neutrality was implied by Olinger (1992:55), who referred to the 1600s and 1700s as the "early historic period," a designation that encompasses the numerous different peoples engaged in writing the historical documents of the period. The following periodization is based upon changes in material culture linked to political shifts but also to economic and social changes. In addition to these four formal periods, the category "contemporary symbolic sites" was created to capture sites of religious significance to contemporary Pueblo people and others. These sites are discussed at the end of chapter 4.

Early Historic 1 (early 1500s to c. 1700)

This period formally begins with the first face-to-face contact between Europeans and Pueblo people of the northern Rio Grande in 1540. However, the native inhabitants of the area had probably been affected by the European presence in the New World for some decades previously, through both disruptions in trading patterns and the spread of infectious diseases that affected them and their Plains trading partners (Lycett 1989; Reff 1991). Archeologically, this period is marked by the introduction of the domestic mammal complex of sheep, horses, goats, and cattle; Christian religious iconography and architecture; and imported metal implements and ceramic wares. Indigenous ceramics continued to be made, with stylistic differences that permit visual identification of new types (for example, Sankawi Black-on-Cream, Potsuwi'i Incised, and the Glaze E series).

Early Historic 2 (c. 1700 to c. 1850)

The architecture, introduced material culture, and subsistence strategies of the previous period were maintained in this period. Archeologically, the most visible changes in material culture consist of the abandonment of many ceramic styles that characterized the Early Historic 1 and the appearance of new ceramic types such as Kapo Black, Powhoge Polychrome, and Puname Polychrome.

The Sheepherding/Ranching Period (c. 1850 to c. 1919)

This period is identified by the rise in herding and ranching activity that occurred after three nearly simultaneous developments: the acquisition of New Mexico as a US territory in 1846; subsequent US military actions against Apachean raids; and the opening of the California gold fields and the booming demand for provisions after 1849. This period also encompasses the introduction of the railroad and the accompanying increase in settlement and other extractive activities such as logging and mining. For the purposes of this analysis, this period largely terminates with the acquisition of the national monument area by the US Forest Service in 1916 and the crash in the livestock market following World War I, although ranching and woodcutting remained active even within the monument until 1932.

Table 3.1. Historic ceramic types and date ranges for the northern Rio Grande area.

Ceramic Type	Date Range and Source
Carnue Plain	1700–1895 (Dick 1968:84)
Cochiti Polychrome	1830–present (Harlow 1973:83)
Glaze E	
Puaray Glaze-polychrome	1515–1650
Escondido Glaze-polychrome	1515+
Pecos Glaze-polychrome	1515–1700
Glaze F (Kotyiti Glaze-on-Red, Kotyiti Glaze-on-Yellow, Kotyiti Polychrome)	1625–1700 (see Vint 1999), 1650–1700+ (Warren 1979b)
Kapo Black	Post-Revolt (Mera 1932); 1650? (Warren 1979b); 1700–present (Dick 1968:83); 1720–1760? (Harlow 1973:81)
Kiua Polychrome	1750–1900 (Harlow 1973:45–49)
Ogapogé Polychrome	Post-revolt (Mera 1932); 1720–1800+ (Warren 1979b); 1720–1760 (Harlow 1973:78)
Posuge Red	Post-revolt (Mera 1932); 1650–1750 (Harlow 1973:81); 1675? (Warren 1979b)
Potsuwi'i Grey	1450–1550 (Harlow 1973:38)
Potsuwi'i Incised	Pre-revolt (Mera 1932); 1450–1550 (Warren 1979b); pre-1500 (Harlow 1973:37–38)
Powhoge Polychrome	1750–1850 (Harlow 1973:31–34); 1760–1850 (Dick 1968:81)
Puname Polychrome	Post-revolt (Mera 1932); 1680–1780 (Warren 1979b); 1700–1750 (Harlow 1973:52); also became major Rio Grande trade ware in later 19th century (Warren 1979b:243)
Sankawi'i Black-on-Cream	Pre-revolt (Mera 1932); 1550–1650 (Harlow 1973:76–77)
San Pablo Polychrome	1740–1800 (Harlow 1973:53)
Sapawi'i Washboard	Pueblo IV (1325–1550; Mera 1935)
Soup Plate	Postcolonization (Warren 1979b)
Tewa Polychrome	Pre-revolt (Mera 1932); 1650–1730 (Harlow 1973:77); 1675–1720 (Warren 1979b)
Zia Polychrome	1840-1940 (Batkin 1987:121)

The Twentieth Century (c. 1900 to the Present)

This term is applied to all permanent settlements in Frijoles Canyon, beginning with Abbott's Farm in 1907, as well as to the subsequent management of the region as a US Forest Service and later National Park Service property. The archeological manifestations of the era include roads, ranger cabins, building foundations, trash dumps, pipelines, and the current visitor center complex.

Material Culture of the Historic Period

For Early Historic periods 1 and 2, historic ceramics constituted the most common artifact type. Historic pottery types were identified in the Bandelier ceramic manual so that ceramic analysts in the field would be able to refer to the technical descriptions of wares that might not be seen frequently. Because the survey followed a no-collection policy, the principal data set for the evaluation of artifacts consists of observations recorded in the field. A total of 21 historic ceramic types was recognized in the survey materials, with dates ranging from around A.D. 1515 to the later nineteenth century (Table 3.1). In some cases, "biofacts" (such as dung from domesticated animals) were used to separate prehistoric from historic components. Clearly, the presence of European manufactured goods and machine-manufactured goods, as well as objects of historic composition (metal, glass, ceramic), indicated historic use.

For the Sheepherding/Ranching period and the twentieth-century, diagnostic artifacts recorded by the survey included metal cans and glass fragments. The recording forms for metal and glass objects documented a number of variables, such as style of opening, types of seams, and base profile. Most of these variables were not considered in the present analysis, primarily because labels and can sizes were judged to be the most efficient variables for determining site dates. Dates assigned for can opening styles were based on the information in the recording manual for metal artifacts. Although the sizes of cans are often indicative of contents, their use for dating purposes is questionable; the only secure division appears to be in the size of milk cans (Duran and McKeown 1980). Measurements of can sizes appear to have been taken during the survey for crushed and dented as well as whole specimens, which would explain the enormous number of single exemplars of can sizes other than the standard sizes recognized for the industry (see Appendix 3).

Very little glass was recovered by the survey, in comparison with the quantity of metal items. The most striking example is the historic dump site (LA 84092), which yielded 215 cans and only three pieces of glass. In contrast, other archeological projects dealing with the historic period have noted that glass was the prevalent container type (e.g., Oakes 1983; Vogler, Gilpin, and Anderson 1983). The relative lack of glass in the Bandelier materials may be due to several factors: glass containers were more fragile and thus less useful to itinerant shepherds, and cans could be reused and/or modified with straightforward techniques (several sites, including LA 70812, 70907 and 71052, had large tins made into buckets through the use of a baling wire handle). In addition, the food staples that were most often used at the Bandelier sites (baking powder, tobacco, lard, sardines) were commonly packed in metal containers. Glass containers were often used to pack luxury goods such as condiments and alcohol, which may have been too expensive relative to basic subsistence goods such as lard and baking powder. Site (de)formation processes may also have affected the number of glass vessels seen, since whole bottles may have been picked up and collected by park visitors as curios. If this were the case, however, one would still expect to see a larger number of glass shards on sites, and more glass vessels in remote locations of the monument.

For glass artifacts, color proved to be the single best criterion for dating, although a number of other variables were recorded in the field, such as presence of pontil or finishing marks, seam location, label type, and surface texture. The examples of glass that do appear in the monument area are overwhelmingly of two types: purple and clear. Many types of glass were manufactured as colorless but were rendered different colors upon exposure to the sun, owing to the mineral content of the glass mixture. The date range for glass colors was adapted from Ward, Abbink, and Stein 1977 and Berge 1980: "black" or dark green, 1815–1885; aqua, 1880–1910; purple, 1880–1917/1925; brown, 1880–present; amber, 1914–1930; and clear/colorless, 1930–present. Unexposed (e.g., buried) manganese glass remains colorless until it is exposed to light for a sufficient amount of time, when it turns purple. However, since all of the artifacts from the survey were surface finds, it was assumed that colorless glass was "truly" colorless, that is, manufactured after 1930.

Some ammunition was also recorded, but not systematically; nonetheless, all potentially diagnostic ammunition was retrieved from the site forms in a form-by-form search, to add to the dating potential of sites.

Data Analysis

Sites, isolated occurrences, and historic components were all retrieved from the data base of sites recorded by the 1987–1991 Bandelier archeological survey project. The original site forms were examined in order to determine recording inconsistencies, and site comments, maps, and structural categories scrutinized to eliminate those historic occurrences that were below the minimum threshold site-definition criteria developed for this analysis. The data base was supplemented by questioning other project data analysts to identify sites and isolated occurrences that were not formally recorded with historic components but that had vestiges of historic-period activity. This resulted in

the addition of several sites, including two historic shrines and another shrine with possible modern use.

The original isolated occurrence (IO) forms were individually examined to identify historic items and features. A keyword search was also undertaken to examine the comments section of the Oracle computerized site file for all sites in the Bandelier data base. The following words were included in the search: historic, cans, telephone, insulator, bullet, and old road. Many sites came up that had some historic aspect; it is clear that in some cases historic hearths were recorded as separate components, but in others they appeared only as "impacts" or as comments. In addition, three sites were identified that contained historic components (in the form of animal husbandry) that were indicated by the comments on the site forms but not actually encoded into the structure of the form. While the original site recording forms were not physically altered, these three new components were considered in the analysis.

The determination of historic-period use for sites and isolated occurrences retrieved in this manner was relatively straightforward. However, cairns (small rock piles), because they are very difficult to date, were ignored in the data analysis unless they were accompanied by other features that could be dated to the historic period. Some features, such as shelters with animal dung, were clearly historic, but further distinction was difficult to assign. The low quantity of any type of artifactual remains from some sites, and the frequent reuse of cavates and other Anasazi components, meant that differentiation between historic and prehistoric use was difficult, as an example shows: "It is difficult in many cases to determine whether features (especially stairs) were originally prehistoric or are of solely historic origin" (site form for 65743, p. 5).

The historic use of trails was also difficult, if not impossible, to establish with certainty, since many trails were located in naturally occurring access points in areas of rugged terrain. In only one case was it possible to group segments of trails into a historic-period cluster; the presence of an animal bell in association with these segments further suggested a route traveled by animal herders in the Bandelier area (see special use cluster 4 in chapter 4).

All of the sites identified through the various means noted above, as well as historic IOs, were then plotted on a map of the Bandelier area. This process indicated that historic sites tended to cluster together, with large spaces of little historic activity intervening. Most of the clusters were less than 200 m (650 ft) in diameter, although some linear features, such as the fenceline and telephone line, were grouped into functional clusters for the purposes of this analysis.

The use of visual clustering of site occurrences for the Bandelier data set is justified for the following reasons. (1) Chronological differentiation often could not be made between historic sites, because of either recording procedure or ambiguity of finds. (2) The area was not 100% surveyed, and thus there is the possibility that some sites or artifacts on the edges of the surveyed areas are actually parts of clusters rather than isolates. (3) Clustering through computerized means as an alternative to visual clustering does not necessarily eliminate subjectivity, because some clustering programs require the user to specify the number of clusters to be found (e.g., FASTCLUS [Wandsnider and Larralde 1986]).

The clustering process for historic sites brought together sites and IOs that had been recorded as dispersed activity loci; one measure of the validity of this approach is that nearly all of the historic IOs could be grouped into clusters. Altogether, 22 clusters that were functionally integrated loci of "sites" and IOs were identified in the data set. In addition, 81 sites had evidence for historic-period use. A separate set of 13 sites and 8 IOs represented material culture that dated to National Park Service activities.

4

Historical Clusters at Bandelier

The archeological record of the historic period can be divided into four chronological groupings: Early Historic 1 (early 1500s to c. 1700); Early Historic 2 (c. 1700 to 1850); the Sheep-herding/Ranching period (1850 to c. 1919); and the twentieth century (c. 1900 to the present). Each of these four periods is characterized archeologically by distinct types of material culture, architectural features, and settlement patterns. In addition to addressing these chronological periods, this chapter briefly describes the category "contemporary symbolic sites." These sites, which include shrines used by native and non-native people, often have prehistoric antecedents but have been subject to continuing use in the historic period.

Early Historic 1 (early 1500s to c. 1700)

Sites of the Early Historic 1 period at Bandelier are designated almost exclusively on the basis of historic-period ceramics (Table 4.1). Except at the site of Tsankawi (LA 211), the proportion of historic sherds is relatively modest, but it indicates a pattern of occupation that covers nearly all of the monument. The most prevalent ceramic type recovered at Bandelier for this period is Sankawi Black-on-cream (A.D. 1550–1650 [Harlow 1973:76–77]). Architectural forms in this period consist primarily of reuses of prehistoric architecture, with little discernable construction undertaken by the Early Historic 1 inhabitants. Since there were at least two locations (Frijoles Canyon and Tsankawi) with good shelter in the form of cavates, these areas would not have required additional architectural investment. In addition to historic-period ceramics, definite evidence of postcontact use of the Tsankawi cavates is indicated by the appearance of European quadrupeds and a mounted horseman in rock art at LA 65741 (Figure 4.1). At LA 13662 (Painted Cave), painted designs include churches and a possible horse among a large number of geometrics and handprints. Other well-known examples of historic-period parietal art, including horses, riders, and Christian crosses, can been seen in Frijoles Canyon (Chapman 1938:147).

The distribution of Early Historic 1 sites is shown in Figure 4.2. Analysis of the distribution of historic-period ceramics shows that use of the monument area in the postcontact era continued a trend observed in the Bandelier survey data for the latest prehistoric period (Period 10, A.D. 1440–1525). During this period, the widespread and dispersed population of earlier eras was becoming concentrated in a few areas of very large structures, notably at Tsankawi, Frijoles Canyon, Yapashi, and San Miguel (Powers et al. 1999:201). By Period 11 (A.D. 1525–1600), the last period for which Powers and his colleagues analyzed architectural data, the habitation of major structures was limited to Tsankawi and Frijoles Canyon (Powers et al. 1999:203). The continuity of materials in the immediate postcontact period indicates that far from a complete abandonment of the Pajarito Plateau by native people, the demographic shifts of the 1500s and 1600s continued a prehistoric trend toward riverside aggregation (Cordell 1984; Haas and Creamer 1992; Mera 1940:23).

Table 4.1. Sites in Bandelier National Monument with Early Historic 1 materials (early A.D. 1500s to c. 1700).

Site Number	Sherds
Tsankawi area	
211	22 Potsuwi'i Incised, 333 Sankawi'i B/C, 46 Sapawi'i Washboard
61036	3 Potsuwi'i Incised, 39 Sankawi'i B/C
65681	1 Kapo Black, 60 Sankawi'i B/C
65684	23 Sankawi'i B/C, 1 Sapawi'i Washboard
65686	6 Sankawi'i B/C
65703	3 Sankawi'i B/C
65714	9 Potsuwi'i Incised, 69 Sankawi'i B/C, 1 Sapawi'i Washboard
65715	53 Sankawi'i B/C
65716	4 Sankawi'i B/C, 4 Sapawi Washboard
65722	3 Sankawi'i B/C
65726	1 Potsuwi'i Incised, 5 Sankawi'i B/C
65730	6 Potsuwi'i Incised, 28 Sankawi'i B/C, 3 Sapawi'i Washboard
65738	2 Sankawi'i B/C
65739	2 Sankawi'i B/C
65742	4 Sankawi'i B/C, 5 Sapawi'i Washboard
65743	29 Sankawi'i B/C, 3 Sapawi'i Washboard
65747	5 Potsuwi'i Incised. 63 Sankawi'i B/C, 19 Sapawi'i Washboard
65755	8 Sankawi'i B/C, 1 Sapawi'i Washboard
65756	16 Sankawi'i B/C, 1 Sapawi'i Washboard
70957	30 Sankawi'i B/C
70970	3 Potsuwi'i Incised, 24 Sankawi'i B/C
70971	15 Sankawi'i B/C
70981	1 Potsuwi'i Incised, 14 Sankawi'i B/C
84121	3 Sankawi'i B/C
Frijoles area	
78	1 Sankawi'i B/C
50970	1 Puaray G/P
50971	2 Escondido G/P, 3 Kapo Black, 1 Tewa Polychrome, 1 Sankawi'i B/C
50972	1 Escondido G/P, 4 Kapo Black, 3 Potsuwi'i Incised, 11 Sankawi'i B/C, 5 Sapawi'i Washboard
77691	2 Puaray G/P, 2 Tewa Polychrome, 3 Sankawi'i B/C
77723	3 Puaray G/P, 1 Potsuwi'i Incised, 1 Sankawi'i B/C
84090	1 Escondido G/P, 3 Puaray G/P, 7 Kapo Black, 3 Potsuwi'i Incised, 4 Tewa Polychrome, 12 Sankawi'i B/C, 5 Sapawi'i Washboard
Between Lummis and Frijoles Canyons	
53168	24 Potsuwi'i Incised, 2 Sankawi'i B/C
60242	5 Sankawi'i B/C (min. 2 vessels)
60462	24 Potsuwi'i Incised, 2 Sankawi'i B/C
77775	2 Sankawi'i B/C
Burnt Mesa	
60377	1 Sankawi'i B/C
60431	1 Sankawi'i B/C
Between Yapashi and Stone Lions	
70818	5 Sankawi'i B/C (min. 2 vessels)
Between Capulin and Medio Canyons	
70888	1 Sankawi'i B/C
Northwest of San Miguel	
70901	1 Tewa
Between Alamo and Capulin Canyons	
84037	"Two enlarged natural cavates in tuff bedrock…classified as Anasazi (PIV) because only 1 Sankawi'i B/C found, not enough to comfortably say historic pueblo... sheep dung in [cavate structure 01] indicates possible historic reuse."
NW of Upper Frijoles trail crossing	
84118	5 Sankawi'i B/C

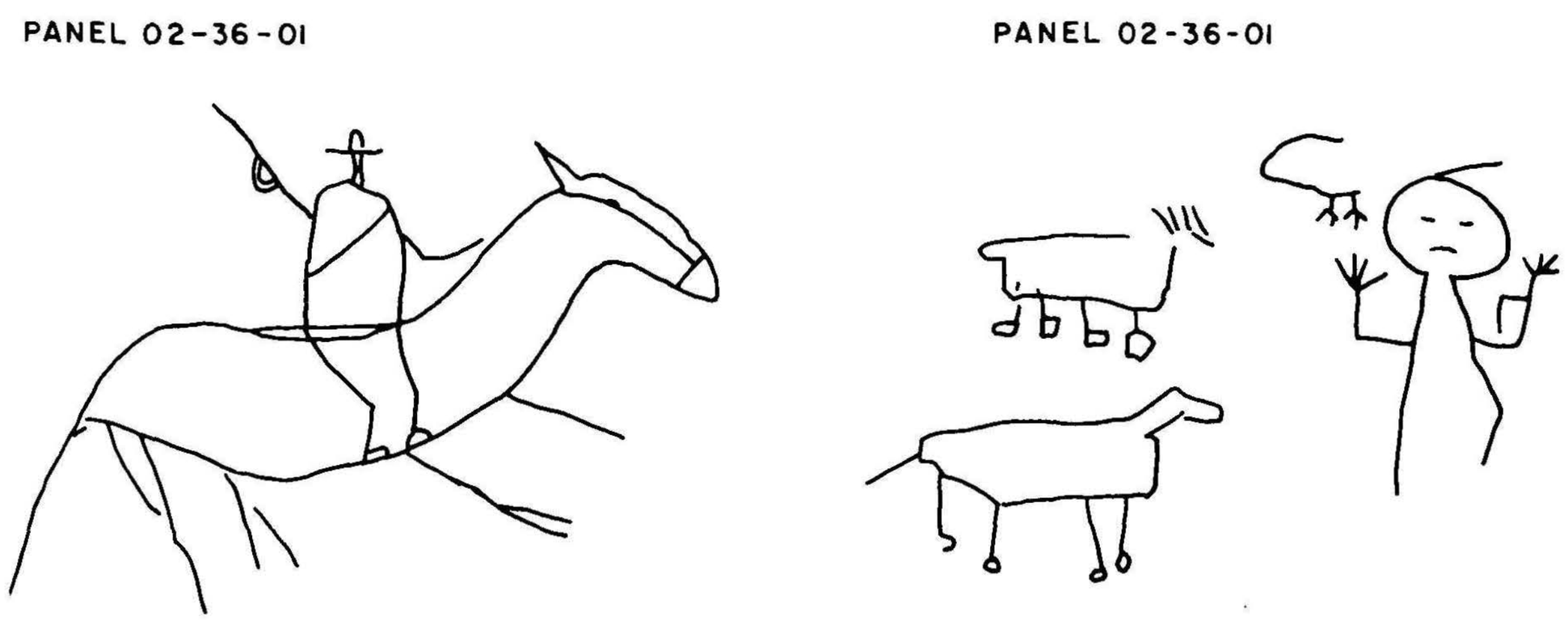


Figure 4.1. Petroglyph panels at LA 65741 (Tsankawi area).

The presence of a limited distribution of historic sherds on the mesa tops indicates that there was some overland movement of people. Five Sankawi'i Black-on-cream sherds from a single vessel, recovered at the higher-elevation site of LA 84118 (elevation 2,438 m [8,000 ft]), offer evidence of historic-period uses beyond settlement zones. It is to be emphasized, however, that the monument was not 100% surveyed, so that patterns of occupation may be filled out by additional surveys elsewhere in the monument.

The distribution of historic-period sherds shows a dramatic difference between the Tsankawi subunit and the remainder of Bandelier National Monument. At LA 211 and other sites in the Tsankawi area, the predominant Early Historic sherd type is Sankawi'i Black-on-cream, with only two other ceramic types present: Potsuwi'i Incised and Sapawi'i Washboard. At Frijoles Canyon, the other area in which Early Historic 1 sherds appear in substantial numbers, a greater variety of ceramic types is represented, although Sankawi'i Black-on-cream sherds are again the most numerous (n = 29). Other historic types, including two varieties of Glaze E and variants of Tewa ware, were found at several sites in the canyon bottom. These sherd distributions indicate that the users of early historic-period ceramics tended to be highly concentrated in specific locales whose attractions appear to have been their defensive capabilities (Tsankawi) or permanent water supplies (Frijoles, Painted Cave).

Early Historic 2 (c. 1700 to c. 1850)

After about 1700, use of the area within the monument boundary, as assessed by the recovery of artifacts, dropped dramatically. In addition, the modest amount of occupation was associated with new patterns of use related to the domestic-mammal complex, especially sheep. Using the proximity-based clustering procedure described in chapter 3,

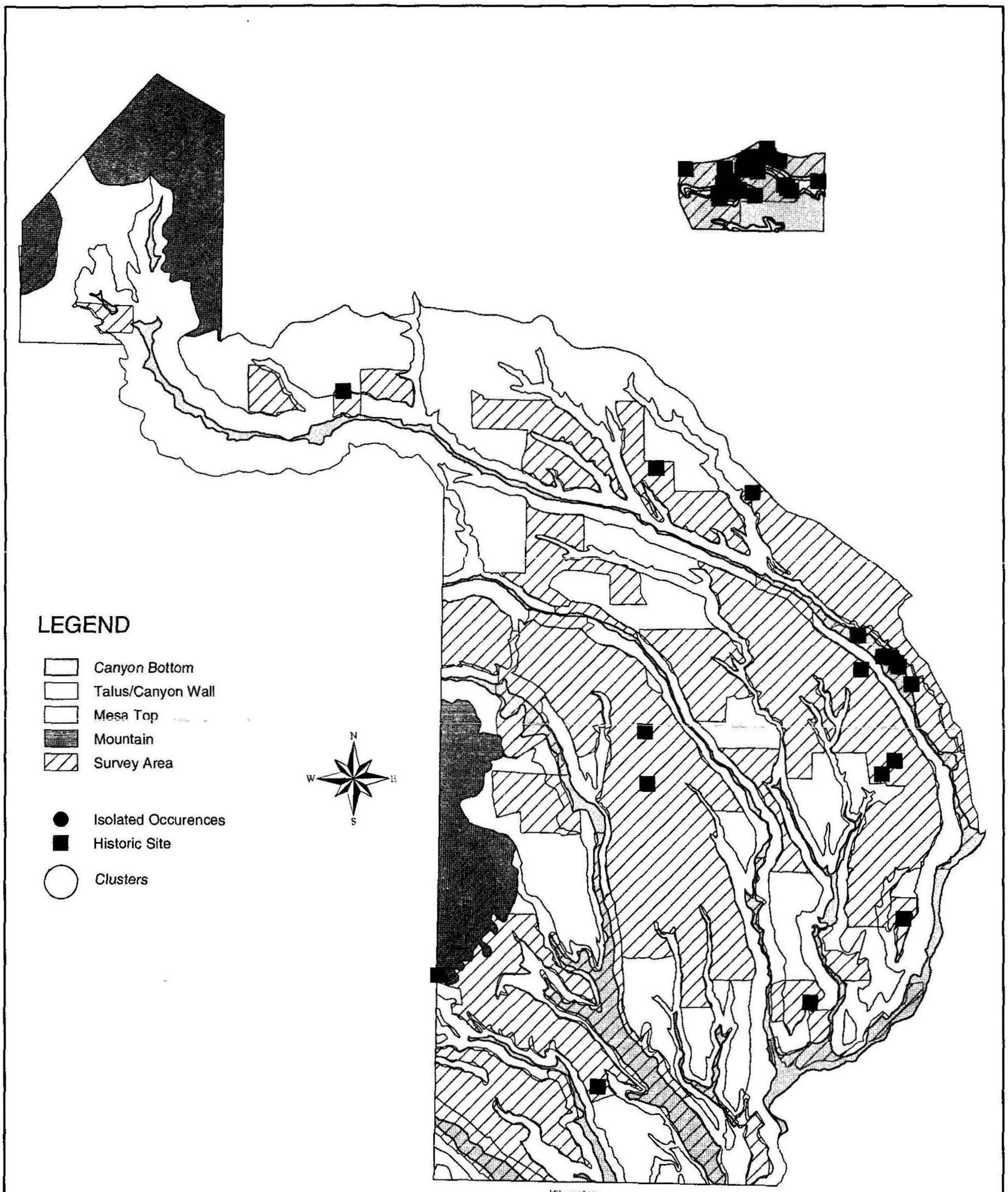


Figure 4.2. Distribution of Early Historic 1 sites in Bandelier National Monument.

two clusters (clusters 11 and 13) were identified as belonging to the Early Historic 2 period (see Figure 4.3, Table 4.2). Both of these clusters include ceramic types that are very late in the historic sequence, such as Carnue (date range 1700–1895 [Dick 1968]) and Kiua Polychrome (San Pablo Polychrome, date range 1740–1800 [Vint 1999]).

Cluster 11 consists of cavates (reused from a previous prehistoric occupation), the historic-period use of which is marked by the presence of sheep dung, cooking utensils, and an enclosure possibly used for animals. Repeated use of this area during the historic period is indicated by the presence of a number of historic-period sherds as well as graffiti from the 1930s. Cluster 13 also consists of a series of cavates and a rockshelter, but with a much lower artifact count. The presence of Carnue and San Pablo Polychrome sherds, as well as wood preserved in the rockshelter, indicates historic-period use.

Beyond the two clusters, only six other sites had ceramics dating to the Early Historic 2 period. Does the paucity of historic Pueblo sherds truly reflect the population density of Native Americans in this area? Historical and archeological sources for northern New Mexico indicate that native population loss and changes in land tenure systems were two factors that produced low actual population densities on the Pajarito Plateau. Furthermore, changes in material culture, with a corresponding decrease in the production of items such as ceramics, have artificially reduced the visibility of native people in the area after Spanish contact. Still, these limited quantities of materials provide information about the complexities of human activity on the Pajarito Plateau.

Puname Polychrome, represented by only three sherds in Frijoles Canyon, may increase in abundance as one moves south: Warren (1979b:243) reported that it was present in all 16 sites examined in her analysis of the Cochiti study area, and it was predominant in several of those sites. The low occurrence of this historic pottery type within the monument boundary may be another indication that there was low use of the area compared with surrounding land (Warren 1979b). Although the total sample of sherds is small both within and beyond the monument, the presence of different sherd types in the Frijoles area and southward may indicate a historic continuation of the ceramic distribution trend, indicative of a possible ethnic (Tewa-Keresan) divide (see Vint 1999:443–444). In the ethnohistoric accounts compiled by Harrington in 1907–1908, the Keres-Tewa divide was described as lying between Frijoles Canyon and Ancho Canyon, the next major canyon to the north (Harrington 1916).

Population loss can be measured in both absolute and relative terms. Certainly, the depredations of disease accounted for a significant amount of native population decrease in the first two centuries after the Spanish incursions (Lycett 1989; Reff 1991; for a modified view that places introduced disease in context, however, see Ramenofsky 1996). Warfare and skirmishes between Spaniards and Pueblo people also took their toll on the populace. As indicated in chapter 2, Navajos continued their predatory raids in the northern Rio Grande region. The archeological effects of raiding and defense are seen to the south of the monument. In the Cochiti area, excavations at the Torreon Site indicate that it was "a temporary outpost established by Governor Cuervo y Valdez in the early eighteenth century, as part of a chain of outposts along the western frontier built as protection against marauding Apaches and Navajos" (Pratt and Snow 1988:239). The authors also note that there is possibly a *torreon,* or tower, at Taskatze Ruin (LA 240) near Cochiti, as well as at Kuapa Ruin (LA 3444) in the Cañada de Cochiti (Pratt and Snow 1988:256) (see Figure 1.2). Within the monument, some indicators of raiding are found as well: Adolf Bandelier's *Final Report* mentions trails on the Pajarito Plateau "formerly much used by the Navajo Indians on their incursions against the Spanish and Pueblo settlements" (1892, 2:146–147).

Population decline in relative terms also occurred as people shifted away from the Pajarito area, at least some of them moving toward the consolidated population centers that form the basis of the modern inhabited pueblos. Within the Rio Grande area, the movement toward consolidation was further bolstered by Spanish land grant policies

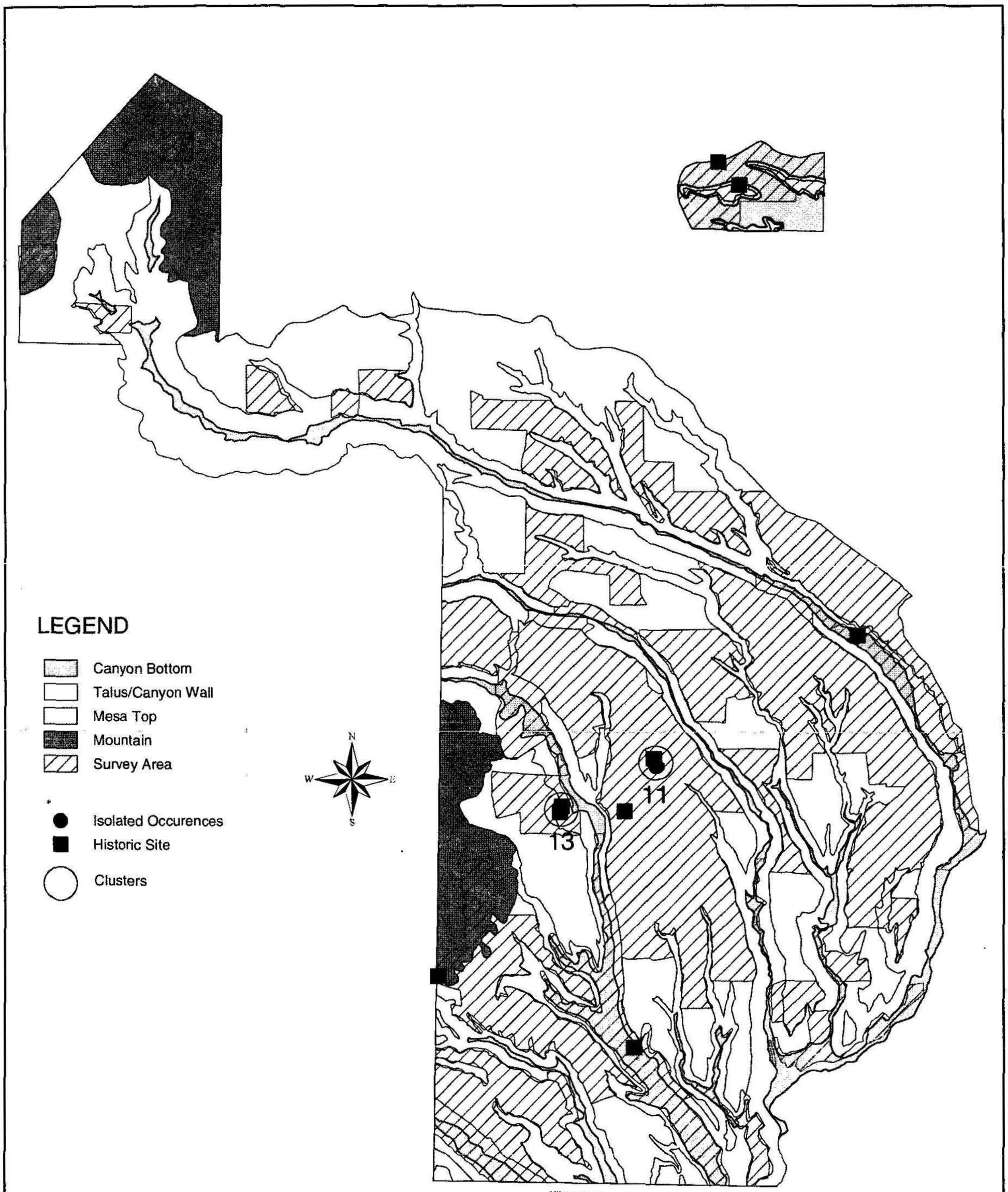


Figure 4.3. Distribution of Early Historic 2 site clusters in Bandelier National Monument.

Table 4.2. Sites in Bandelier National Monument with Early Historic 2 materials (c. A.D. 1700–1850).

LA/IO Number	Major Features	Minor Features	Ceramic Types	Metal Artifacts	Glass Fragments	Inscriptions	Reuse of Anasazi Structure?	Other Materials
Cluster 11								
70863	Cavates (with dung)	Hearth (recent)	61 Carnue 12 Powhoge Polychrome 5 Historic Tewa 10 Kiua Polychrome	2 cans 1 frying pan 1 enamel pot	—	"1930" "1934"	Yes	—
IO 590	—	Enclosure	—	—	—	—	—	Lightning stone
Cluster 13								
71149	Cavates	—	8 Carnue 6 San Pablo Polychrome	—	—	—	No	—
71155	Rockshelter	2 alignments	—	—	—	—	—	Wood
Tsankawi area								
65710	—	—	1 Kapo Black	—	—	—	—	—
65712	—	—	9 Kapo Black	—	—	—	—	—
Painted Cave area								
50949	—	—	1 Puname Polychrome	—	—	—	—	—
60523	—	—	5 Puname Polychrome	—	—	—	—	—
Frijoles area								
50970	—	—	24 Carnue, 3 Puname Polychrome, 2 Tewa Historic, 2 Tewa (other), 1 Soup Plate	—	—	—	—	—
Northwest of San Miguel								
70901	—	—	21 Carnue, 1 Kapo Black, 1 Powhoge, 15 Zia Polychrome (recorded in field as "Zia Red Ware")	—	—	—	—	—
Sanchez Canyon								
65600	Rockshelter	Enclosure	3 Puname Polychrome, 2 historic utility					

after the Pueblo Revolt, which associated Pueblo groups with specific parcels of land, mostly along the Rio Grande (Abbink and Stein 1977). Ties between mobile and sedentary native peoples continued; for example, after the Pueblo Revolt, many villagers from the Rio Grande area fled north and joined the Navajo (e.g., Ward, Abbink and Stein 1977). After 1692, when Spaniards "reconquered" the region, documents show that mobile groups continued to trade with (and raid) Pueblo settlements. Although much of this activity took place along the Rio Grande, there are also reports of an Apache presence in the Rio Chama region (Schaafsma 1992).

Another factor in the low visibility of Early Historic 2 sites concerns changes in material culture, especially the adoption of European goods by native people of the Rio Grande. This factor is not as great as might be supposed, however, since pottery continued to be used long into the historic period and was not completely replaced by metal pans and buckets until around 1850 (Ellis 1978). Even at this juncture, pottery manufacture was not completely abandoned, and throughout the nineteenth century a limited quantity of new vessels was manufactured (Batkin 1987; Harlow 1973). The assignment of ethnicity on the basis of material culture becomes particularly difficult in this period, and not all recovered historic ceramics should be assumed to be the result of early historic activity; continued use of some historic Pueblo locations as contemporary shrines and use areas by the modern inhabitants of nearby Pueblo communities such as Cochiti and Santa Clara should not be ruled out. Such usage may involve the transport of sherds to sites beyond the original distribution zone of that pottery type, but this is difficult to quantify.

The distinct difference in population density in the Early Historic 2 period, relative to prehispanic times, can also be analyzed as the product of economic shifts. Prior to the Pueblo Revolt, European interference with preexisting economic patterns on the Pajarito Plateau was limited, and Spaniards did not control the natives' new activities, such as raising livestock. Demographic losses on the part of native inhabitants were probably offset by influxes of new people, so that overall population density was steady. After the early 1700s, new land grant policies and greater numbers of new settlers placed political and legal constraints on natives' demographic movements. As Abbink and Stein (1977:155) concluded, the Spanish practice of taking over the middleman role in trade between Pueblos and mobile Apachean groups increased the amount of raiding when the latter were allotted inadequate supplies and opportunities for exchange. Throughout the eighteenth and early nineteenth centuries, this problem was exacerbated, and occupation away from population centers was considered to be unsafe. Historical census documents show that there was a lower population density in the Pajarito area than in other locations along the Rio Grande.

Although the historic record indicates that large numbers of sheep were being raised in northern New Mexico by the seventeenth century, not all areas that would eventually be used for grazing appear to have been affected by such activities even as late as about 1850. Not only had the Pajarito been affected by population loss and demographic shifts, but access to domestic mammals that could have made use of the mesa tops might also have been limited under the *partido* system, in which wealthy owners parceled out animals to herders. Finally, herding as a mode of life, compared with agriculture, might not have been desired by or within reach of everyone in the region. Good agricultural land was in limited supply, and Pueblo groups had prior claim; in the Cochiti area, for example, the pueblo owned "virtually all of the irrigable land in the area" (C. Snow 1979:219). As a result, specialization in herding was associated with people of Navajo or Hispanic ethnicity rather than with Puebloan groups. Finally, the greater desirability of other regions for farming and large-scale ranching is implied by the fact that little of what is now Bandelier National Monument was ever part of any land grant (see Figure 2.1).

The Sheepherding/Ranching Period (c. 1850–1919)

This period is best represented in the archeological record at Bandelier by the clusters of sites created around animal husbandry loci (such as



Figure 4.4. Sheep in the Jemez Mountains, early twentieth century. Photograph courtesy of the Museum of New Mexico, neg. no. 5454.

corrals) in association with temporary or opportunistic habitation loci (such as cavates; see Figures 4.4–4.5 and Tables 4.3–4.4). Although the material culture of these clusters is generally sparse, some highly sensitive chronological indicators, usually in the form of can or glass bottle labels, are present and serve to assign dates to some of the clusters. Other dating indications are provided by inscriptions in the plaster of reused cavates. Cluster function is indicated by the presence of animal dung in cavates and modifications such as wire-and-post enclosures for animals. Contents analysis of cans found on the sites indicates that food was consumed in the area of the temporary or makeshift shelters (for a complete list of can sizes and contents, see Appendix 3).

Generally, historic-period constructions tended to exhibit very little labor investment (see figures 4.6–4.8 for examples). Camps could be made on the bare ground, in cavates and rockshelters, or, as in the case of site LA 60505, on a boulder topped with an alignment of rocks suitable for the upper anchor of a tarpaulin. Reuse of prehistoric cavates was relatively common, with sheep dung or historic artifacts showing the presence of historic-period activity. New constructions that were undertaken in the historic period are often distinctive in construction type, location, and/or structure size. Historic modifications and new structures of this time period tended to be made with boulders and rocks several times larger than average prehistoric construction materials (e.g., LA 50909, 60509, 70812, 71032, IO 601).

An exception to this pattern is the well-built structure at LA 71090, which appears to have received substantial labor investment. This structure, which was not associated with any other historic-period feature, was quite elaborate in

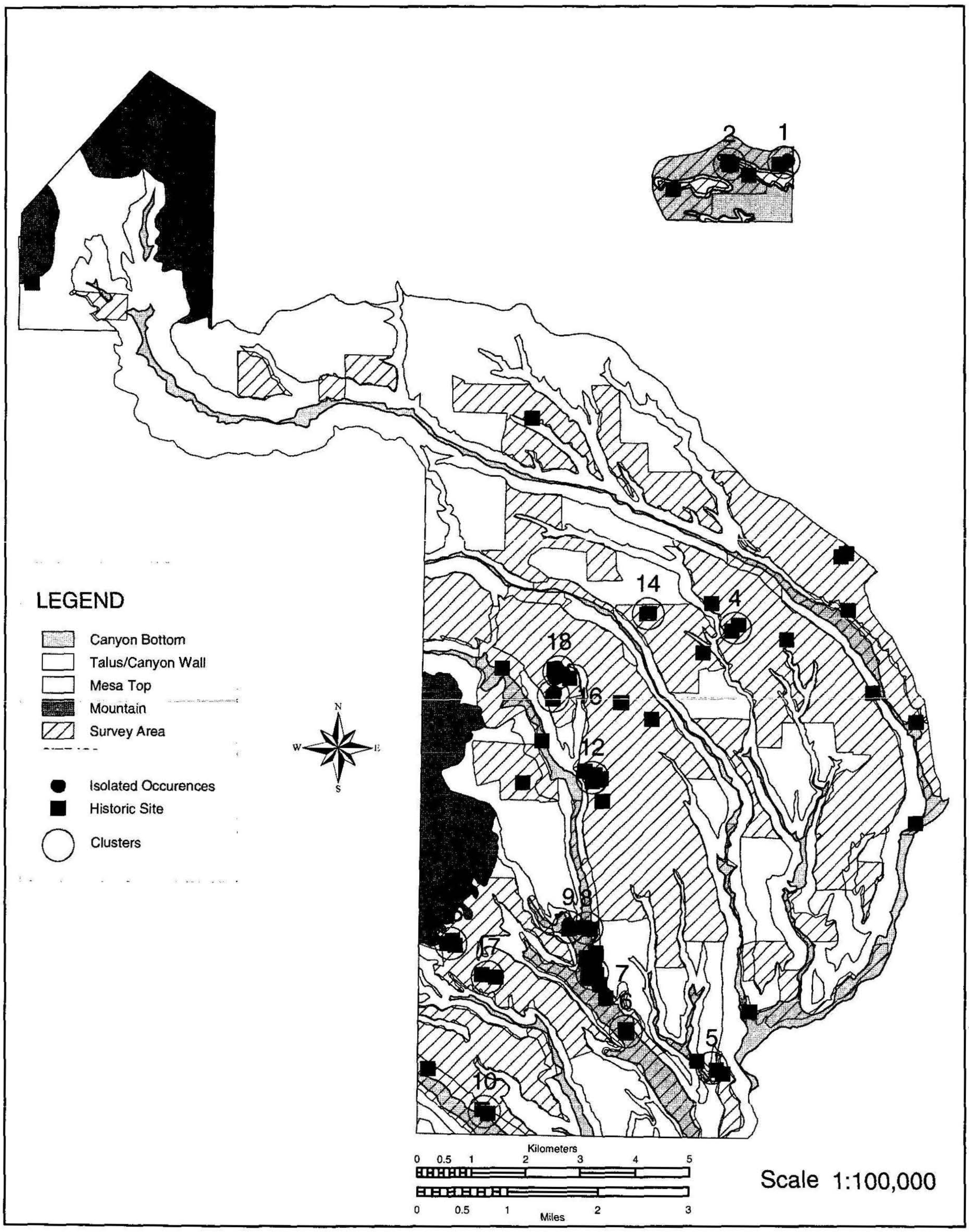


Figure 4.5. Distribution of Sheepherding/Ranching site clusters in Bandelier National Monument.

Table 4.3. Historic Sheepherding/Ranching clusters.

LA/IO Number	Major Features	Minor Features	Metal Artifacts	Glass Fragments	Inscriptions	Reuse of Anasazi Structure?	Other Materials
Cluster 1 (Tsankawi subunit)							
70980	—	2 sheep pens	1 lard can[1] 1 can fragment	—	—	No	2 porcelain fragments
IO 600	—	Unshaped tuff wall	—	—	—	—	—
IO 601	—	Corral/sheep pen	—	—	—	—	—
Cluster 2 (Tsankawi subunit)							
65742	Cavate	—	28 cans 2 cartridges[2]	1 clear	—	Yes	—
65743	Cavate	—	46 cans 1 shell[3]	8 amber 12 aqua 2 white 15 pink 5 other	"B" "EH" Hearts	Yes	—
65745	—	Rubble pile 2 trash piles	—	—	—	No	—
IO 565	—	—	6 cans	—	—	—	—
Cluster 3 (Frijoles Canyon)							
10942	—	Hearth	7 milk cans 1 sardine can[6]	1 clear[4]	—	—[5]	—
84091	Rockshelter (sheep pen?)	Fence Trail Retaining wall	—	—	—	—	—
840995	—	Hearth Wall	4 cans[7]	—	—	—	—
Cluster 4 (Corral Hill)							
60109	Cavate	—	"Trash"	"Trash"[8]	—	Yes	—
60113	—	Corral	—	—	—	—	—
Cluster 5 (Capulin Mesa toe)							
71032	—	2 enclosures	—	—	—	No	—
71050	—	Wall	—	—	—	—	—
71052	Rockshelter	Wall	1 lard can 1 .30-30 shell	—	—	Yes	—
84115	2 rockshelters	Wall	1 lard can[9]	—	—	Yes	—
Cluster 6 (Capulin Canyon bottom)							
65638	—	Corral	5 cans[10] 2 buckets	1 aqua jar	—	No	—
65639	—	Hearth	27 cans[11] 11 shells[12]	67 purple[13]	—	No	—

Table 4.3. (Continued).

LA/IO Number	Major Features	Minor Features	Metal Artifacts	Glass Fragments	Inscriptions	Reuse of Anasazi Structure?	Other Materials
Cluster 7 (Capulin Canyon bottom)							
50967	—	Corral	1 can 3 hand-wrought nails 21 wire nails	—	—	No	—
60466	—	—	2 cans	—	"B . . . B . . . N"	No	—
60467	Rockshelter	—	3 cans[14]	—	—	?	—
60500	Rockshelter	—	—	—	"San Jose"	Yes	—
60502	—	—	5 cans[15]	—	—	—	—
60507	Forked-stick frame	Hearth Trail	8 cans	1 purple	—	No	—
60508	—	Corral Trail	1 sheet metal barbed wire	—	—	—	1 copper car cable
60524	4 rockshelters	—	—	—	—	?	—
65630	—	—	25 cans 1 washtub 1 spoon 1 piece bent wire	20 purple	—	—	—
Cluster 8 (Capulin Canyon bottom)							
60505	Shelter	—	3 cans	—	—	No	—
60509	—	Corral?	—	—	—	No	—
Cluster 9 (Capulin Canyon bottom)							
60512	—	—	9 cans[16]	—	—	No	1 canvas/wood box
IO 407	—	Fence Trail	—	—	—	—	—
Cluster 10 (north of Sanchez Canyon)							
60221	Rockshelter with dung	—	—	—	—	No	—
65598	Cavates with dung	—	1 lard can	—	—	Yes	—
Cluster 12 (Hondo Canyon)							
50949	—	Wall/enclosure between 2 canyons	62 cans[17] 4 shells[18]	3 purple 46 clear[19]	"TC," "PG," "JOR" (all stylized and probably copied from animal brands)	?	5-gallon barrel fragments
65860	—	7 cairns 1 hearth	19 cans	2 clear jars	—	—	—
65863	Cavate	—	16 cans[20]	2 clear	—	Yes	—
65864	—	2 enclosures	4 cans	—	—	—	—
65865	—	—	1 shovel 1 piece heavy chain wire	—	—	—	—

Table 4.3. (Continued).

LA/IO Number	Major Features	Minor Features	Metal Artifacts	Glass Fragments	Inscriptions	Reuse of Anasazi Structure?	Other Materials
Cluster 14 (east of Alamo Canyon)							
50909	Cavate	3 storage rooms	42 cans[21] 2 shells[22]	2 light green	See list, chapter 4	Yes	1 leather sole
77630	Rockshelter	—	1 can	—	—	Yes	—
Cluster 15 (San Miguel area)							
70871	—	Corral	—	—	—	—	—
70872	—	—	6 cans	2 purple	—	?	—
70894	—	—	2 cans	2 clear	—	Yes	—
70937	—	—	8 cans 1 horseshoe 1 bucket bail	—	—	No	—
Cluster 16 (northwest of Stone Lions)							
16032	Small structure	—	—	—	—	Yes	—
IO 871	—	Corral	1 can	—	—	—	—
Cluster 17 (southeast of San Miguel)							
3835	—	—	34 cans[23]	—	—	No	—
70940	Cavate	—	20 cans[24] 1 stove 1 stovepipe 1 horseshoe w/ nail 1 'mat' insulated wire 2 shells[25]	—	Yes (3)[26]	Yes	1 buckle with canvas, leather and wire
Cluster 18 (west of Alamo)							
77830	Cavate	—	3 cans 1 shell[27]	—	—	No	—
IO 877	—	Wall	—	—	—	—	—
IO 878	—	Blind/wall	—	—	—	—	—

1. Label reads "Anglo American Pure Trademark Ref[ined] Lard Packing . . . Division Co."
2. One brass center-fire .38 S&W special cartridge case; one Peters .38 S&W SPL (Peters Cartridge Company 1887–1934 absorbed by Remington [Berge 1980:224]).
3. One can lid with "Curtis Brothers Co, USA"; one can lid with soldered central vent (this was being phased out as early as 1902 [Berge 1980:261]); one can with "Sanitary" written on lid; one lid of a crimp-sealed can. One shell, .38 long, with USC Co. on it (Berge [1980:224] indicates United States Cartridge Co, 1868–?).
4. Clear bottle bottom has side seams and bottom seam, cutoff mark on bottom characteristic of automatic bottle making (post-1904).
5. The historic materials comprise the second component of the Anasazi site and were probably associated with the excavation of the site; see text.
6. Sardine can is marked "Norvege B."
7. One can reads "Ask for Tree Tea/. . . .P. . .e/The High G. . ." in green paint (Hubbell Trading Post lists from 1908–1909 show one entry as "1/2 lb. Gunpowder tea Tree?" [dating to 1908–1909; Levy 1968:18]).
8. Although "lots of historic trash" was noted in the form, no artifact analysis was performed; site was given dates of 1940–1960.
9. "Plankinton & Armour Choice Refined Family Lard Kansas City MO"; side seam is noted as possibly machine soldered.
10. Two crushed tobacco cans read "Union Leader."

11. One can lid has label ". . . Baking Powder 25 cts." Several lids date opening style to 1900–1920.
12. Two casings 1 1/4 x 3/4 in. reading "REM UMC 38 S&W SPL" (REM UMC generically means post-1902 [Berge 1980:224]); two bullets 1 x 3/4 in. with head of casing reading "REM-UMC 38 long"; two rifle bullets 3 1/4 x 1/2 in. reading "UMC S H 132-40"; five rifle bullets reading "REM-UMC 35 REM."
13. Probably represents two vessels and one glass stopper. One vessel reads "Full 1/2 pint/40" on the side; the other reads "Full 1/2 Pint" on base and "Louisville K[entucky]" on the side.
14. Two cans have labels "Armour Packing Co. Lard Compound Kansas City MO" (Rossillon [1984:120] gives Armour initial dates of 1885 and end dates of 1932–1933, with a resultant median of 1908); one appears to be a "hole-in-the-top" type can (if so, this was being phased out as early as 1902 [Berge 1980:261]).
15. One can has "Folgers Coffe[e]" with oval picture of sailing ship, on side "Est. 1850/JM Folger & Co/Kansas City/San Francisco/Houston," on top "G[old]en Gate." One can has on lid "KC Baking Powder" and on bottom G in a circle, with "Reg. U.S. Pat. Off." (KC Baking Powder was registered starting in late 1911 [Ward, Abbink, and Stein 1977:240]). Site form comments that it is "possibly a 30s–50s camp, judging from condition of cans and designs on coffee can" (p. 4).
16. Two cans have "True Height Can KC Baking Powder Guaranteed" at top, at bottom have G in a circle, with "Reg. U.S. Pat. Off." under the circle (dates from 1925–1950 [Ward, Abbink, and Stein 1977:240]); one can has at bottom "T2115/2" mirrored by an upside-down "EST 145"; one can has bottom "EST 195/0658/F8S6"; one can has bottom "K R3D/D114H" with "ESTAB 955" at perpendicular (putting these two last cans together, looks as if this should be read "established 1955"); one can has (with drawing) "Little Chief/Composed of Refined Table Oil/U.S. Inspected And. . . ."
17. Fourteen cans are described as evaporated milk; one labeled "Same Price To-Day as 48 Years Ago KC Baking Powder" (dates to between 1938–1939, [Ward, Abbink, and Stein 1977:240]); another (slightly larger) can reads "True Height [Can] Guaranteed KC Baking Powder" (see note 12 for date). Another can (1 3/4 x 3 x 3 in.) has a rubbing that reads "Argentina [Speccionia?]/M de A/Estab No. 25 [or 29]/ . . . stria. . . ."
18. Four shells, which read "WRA 45 Colt" (dated in site form as post 1873; Colt trademark introduced in 1873 [Periodical Publishers Association 1934:26]), "REM UMC 8 m/m" (dated in site form as post-1933), one .22 with a central U, one "U.M.U. .44 C.F.W."
19. All of the clear glass appears to represent a single jug, with "Only by Anchor Liquor C[ompany] Albuquerque New Mex[ico]"; bottom of jug has maker's marks and symbols.
20. Four are sardine cans with the words "Red Box" on the bottom in raised letters; one is identified as a hinged-lid tobacco can; in addition, one wire handle from a lard-bucket type can was noted.
21. One sardine can reads "Holmes Co. Maine Sardines Contents 3 1/4 oz in Cottonseed Oil Robbinstone ME," with HCO at center of can lid. Another can reads "KC Full Weight 10 oz. Baking Powder for 10 c Absolutely Pure" (KC Baking Powder was first manufactured in 1890 [Ward, Abbink, and Stein 1977:240]).
22. Two brass shell casings: .22 cal. short, rim fire with a P in an inscribed circle; .44 cal., center fire, with Rem UMC (REM-UMC dates to post-1902 [Berge 1980:224]).
23. Two identified as tobacco; eleven sardine cans, of which 5 have label "Holmes Company Maine Sardines/HCO/3/4 oz/In Cottonseed Oil/Robbiston, Maine," and one has "Red Box A."
24. Two lids have embossed labels: "KC Baking Powder 50c Same Price, 50 oz for 30 Years" (Ward, Abbink, and Stein [1977:240] date this to manufactured in 1920), and "KC Baking Powder 50c."
25. Two shells, center fire: Rem-UMC .44 WEB, Peters .44 Webber.
26. "Joe M. Armijo Abra M. Baca Cabe LF/Joe" with a diamond pattern on a stick. "LA Joe LAPM (?)." "1925 Amadae CM Abur 1938 [1936?] A Armijo."
27. Shell measures 5/8 x 1/4 in. in diameter and has an H on the top. "H" signifies Winchester Repeating Arms, 1867–present; at 5/8 in., it could be a post-1917 long-rifle H (Berge 1980:224). Note that Duran and McKeown (1980:1070) say that an H on a cartridge indicates Olin Mathieson Chemical Corp, registered August 1, 1905.

Table 4.4. Nonclustered Sheepherding/Ranching sites.

LA/IO Number	Major Features	Minor Features	Metal Artifacts	Glass Fragments	Inscriptions	Reuse of Anasazi Structure?	Other Materials
13659	Rockshelter	--	11 cans 1 harmonica plate	4 clear	--	Yes	--
60097	--	Wall	1 can	--	--	No	--
60120	Cavate	--	wire	?	--	Yes	--
60324	--	Windbreak?	--	2 purple 1 green	--	No	2 pieces porcelain
60384	--	Hearth	Stove part? >3 cans[1]	--	--	No	--
60388	--	--	5 cans	--	--	--	--
60495	--	Fence	--	--	--	--	--
65600	Rockshelter	Lamb pen?	--	--	--	No	--
65662	Cavate	Corral?	5 cans	24 amber 2 aqua	--	Yes	--
65746	--	--	7 cans	--	--	--	--
65771	--	Ax-cut branches	22 cans[2]	3 light green	--	--	--
70769	Cavate w/ dung	--	--	--	--	Yes	--
70954	Cavate	--	6 cans[3] >6 shells[4]	--	--	Yes	--
71017	Rockshelter	Sheep pen	4 cans	--	--	No	Cut logs
71090	Structure	--	1 lid	--	--	?	3 dendro samples[5]
77656	--	--	10 cans	--	--	--	--
77710	Rockshelter	--	--	--	--	--	--
77839	--	--	53 cans[6]	--	--	--	--
84016	Rockshelter w/ dung	Wall	--	--	--	No	--
84037	Cavates with dung	--	--	--	--	Yes	--

Table 4.4. (Continued).

LA/IO Number	Major Features	Minor Features	Metal Artifacts	Glass Fragments	Inscriptions	Reuse of Anasazi Structure?	Other Materials
84092	--	--	215 cans	2 brown 1 clear	--	No	--
84100	--	Corral	--	--	--	No	--
84140	--	Animal control	1 can[7]	--	--	--	--
IO 865	--	--	40 cans[8]	1 jar	--	--	--

1. Although no form was filled out, one lard bucket and several miscellaneous cans (sardines, evaporated milk) and one large can marked "Calumet 5 lbs Baking Powder Full Weight Absolutely Pure" were identified. Calumet was founded in 1889 (Periodical Publishers Association 1934); Calumet was first produced in 1890 (Vogler, Gilpin, and Anderson 1983:450).
2. One can (4 1/2 x 3 x 3/4 in.) has "Red Box" on base; one (round) 2 1/2 x 1 in. "Bucklens Arnica Compound Salve."
3. One label rubbing indicates "Orbis (Orris?) & Company Lard Refiners."
4. WW Super 300 Sav, Super-X 30 Rem, WW Super 30-30 Win, F C 8 mm Mauser, Rem-UMG 30-30 Win, F C 308 Win.
5. The three samples, one ponderosa pine and two juniper, could not be dated (Jeffrey Dean, personal communication 1994).
6. Cans are noted as being a "tidy stack" and may represent a single depositional event. One can has on top lid "Karo" in script. Six cans appear to have "CR+1" or "F98" on bottom lid. Two cans have "Sanitary" on bottom. At least one can is marked "Estab 1922." One tobacco can is labeled Bugler Brand with the following writing: ". . . Co. Richmond VA/Ready Rubbed/Product of VA . . . Tobacco Has . . . LawEvery . . . Penalties of Law . . . Tobacco Again."
7. Can marked "Zerex, Dupont, Antifreeze, Antirust" with directions for use. (Possible reuse as drinking vessel?)
8. One can says "Est. 1956"; a crushed sardine can, although not three-seamed or double-seamed; and a scored strip meat can (e.g., Vienna sausage) without a key.

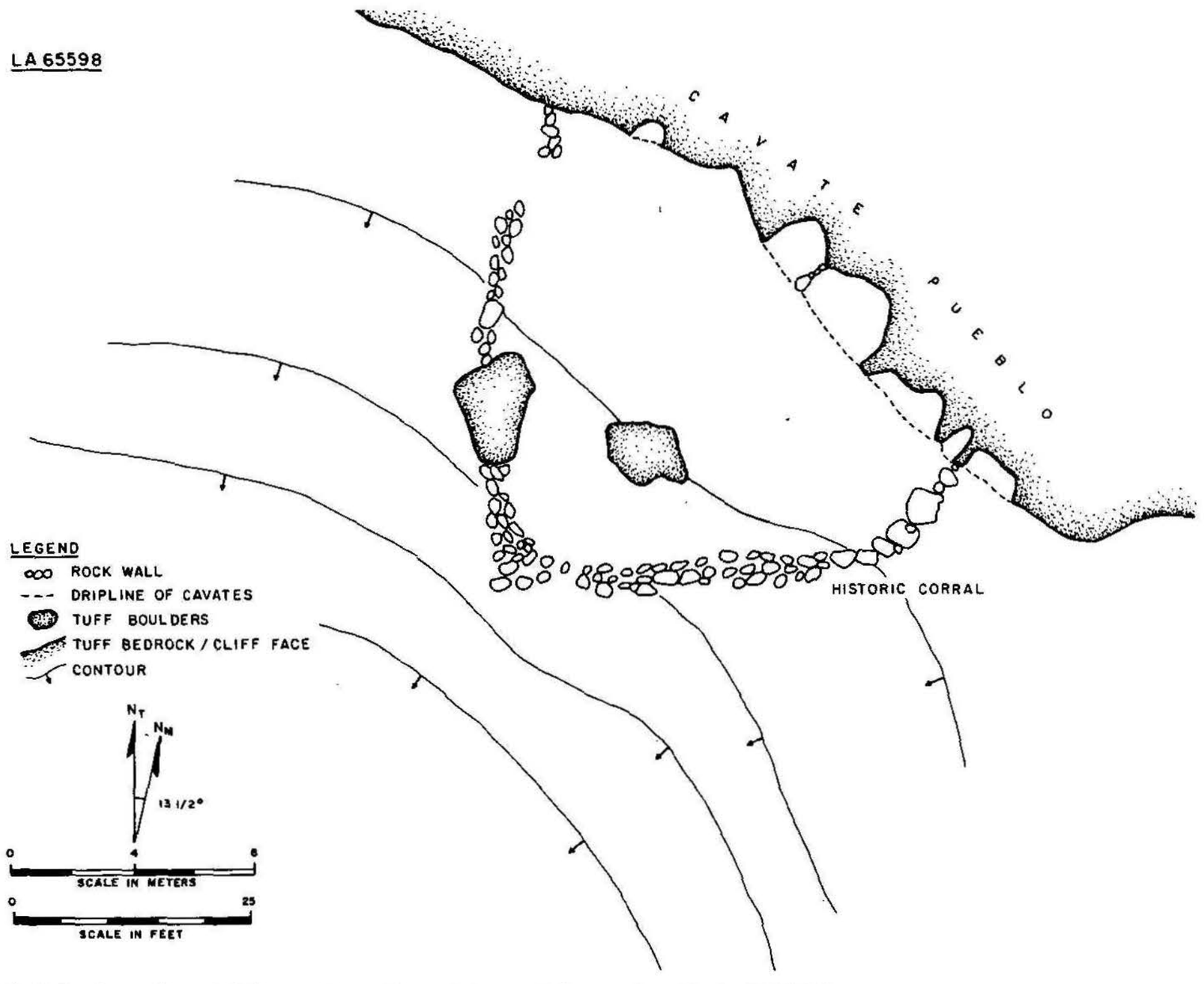


Figure 4.6. Field sketch of Sheepherding/Ranching site LA 65598.

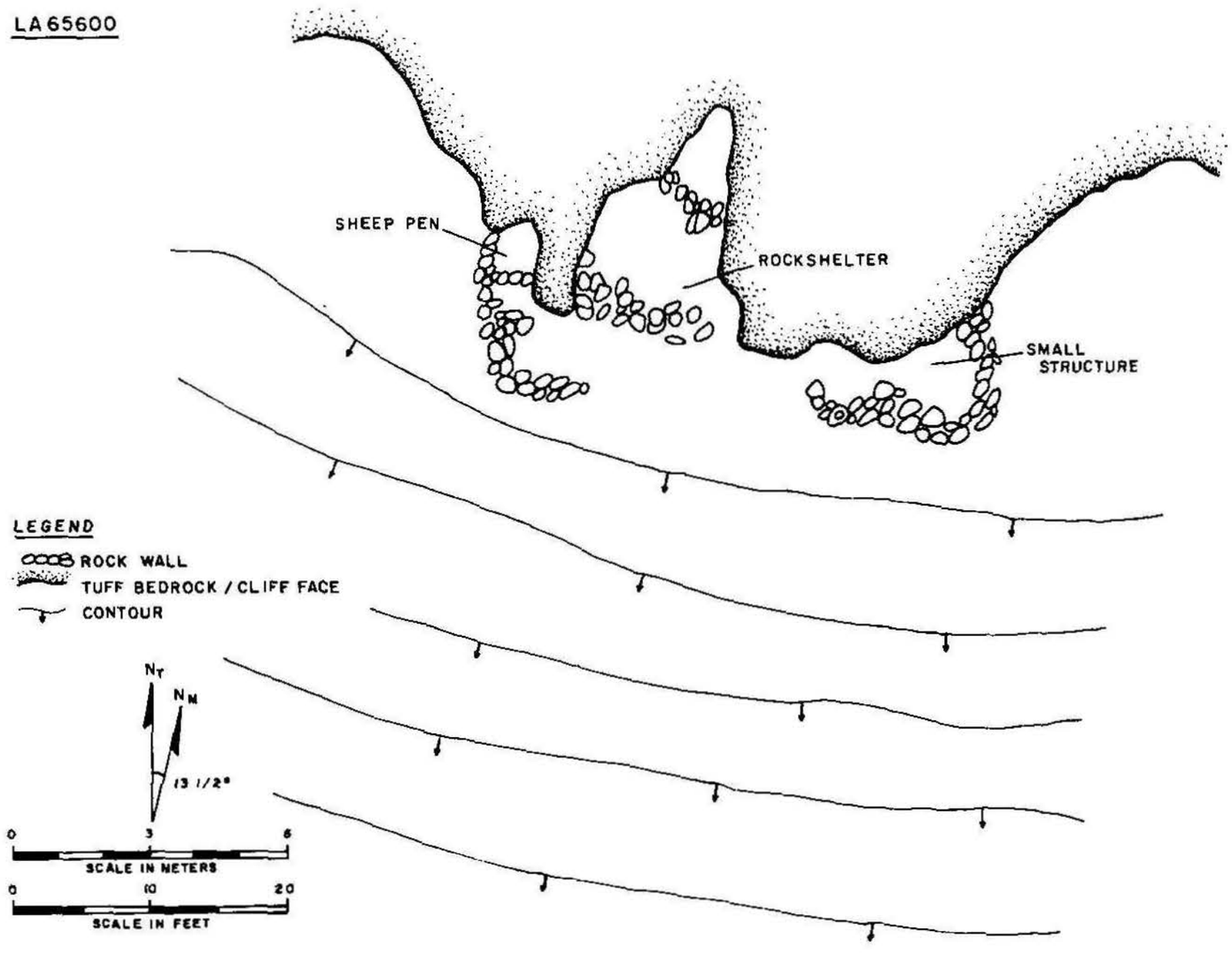


Figure 4.7. Field sketch of Sheepherding/Ranching site LA 65600.

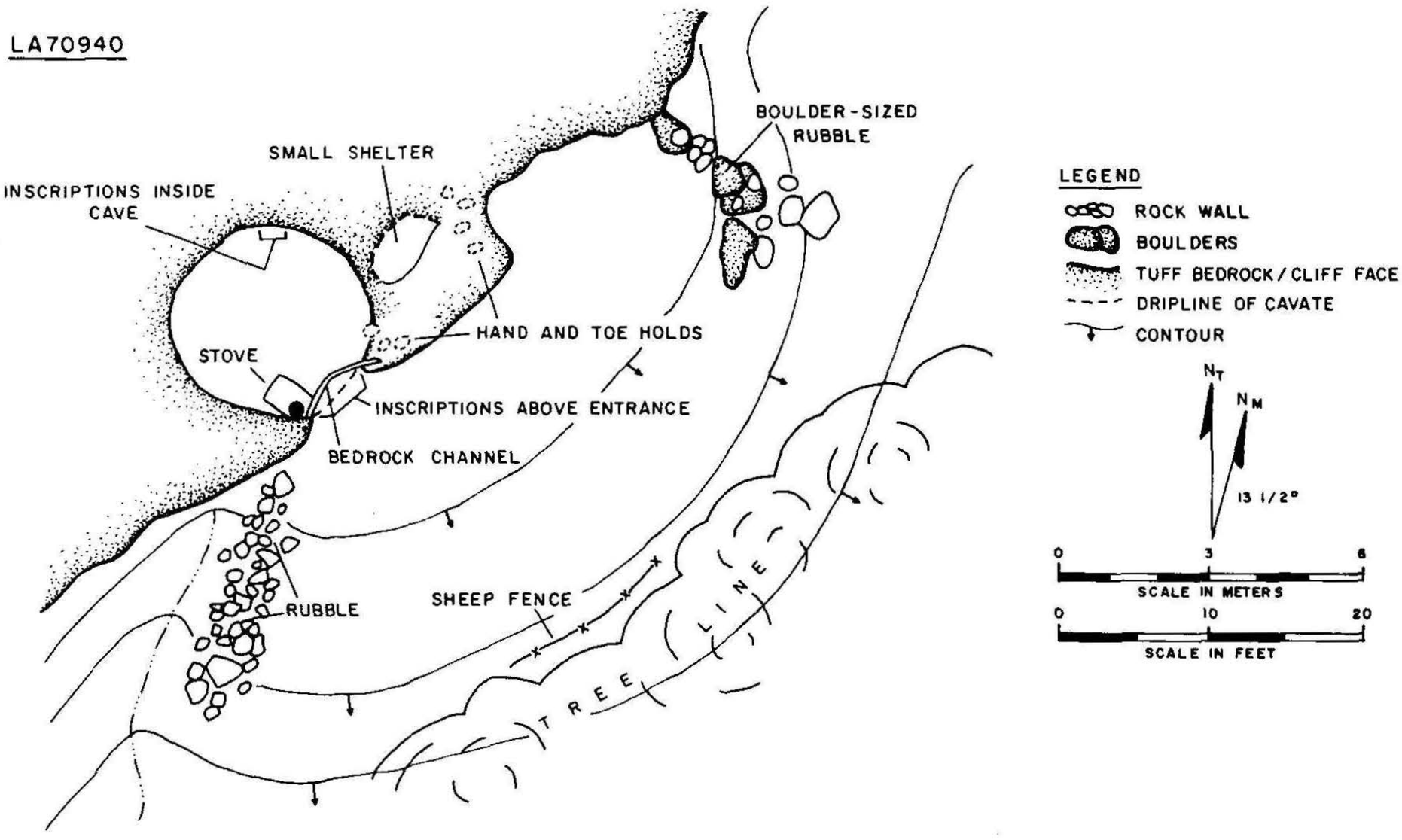


Figure 4.8. Field sketch of Sheepherding/Ranching site LA 70940.

comparison with contemporaneous dwellings found inside the monument boundary. According to the site form, the main room of the structure had these features: "corner fireplace in SW corner, corner storage sectioned off in NE corner, 6 viga sockets (of which 3 are well shaped), 2 upright forked sticks functioning as load bearing uprights for ceiling, smoke blackening above fireplace, and 8 'courses' of heaped wall fabric. Highest point in smaller room is 5 'courses' high. Several ax-cut junipers within site boundaries. Hand hewn roof timber on ground just S of historic structure." Because only one artifact (a can lid) was associated with this structure, it appears that it did not serve as a long-term habitation and was perhaps abandoned prior to completion.

For other historic features, such as corrals, construction techniques varied widely, producing everything from elaborate and well-built structures such as LA 60113, with its cribbed logs and wire, to makeshift constructions such as LA 65638, a "wooden enclosure formed by young juniper saplings." At LA 65864, two large enclosures (12 x 11.5 m [39 x 37 ft] and 11.5 x 11.5 m [37 x 37 ft]) were each made from a variety of types of wood and wire, indicating the continual reuse and repair of the corrals with an expedient use of materials.

Through the clustering process, sites located in proximity to one another are shown to have had complementary functions. In clusters 4, 5, 7, 8, 10, 12, 15, 16, and 18, shelters such as cavates and rockshelters are located close to enclosures or corrals. All of these clusters also contain some historic-period artifacts associated with the shelters or animal-husbandry features. The juxtaposed location of human and animal shelter indicates that people kept close watch over the herds, both to protect them from predators and as a means of control. Only two clusters (2 and 17) consist of habitation debris without any animal enclosures, and only cluster 1 shows animal pens without nearby human shelter. Figure 4.9 provides an example of the way in which separate sites (as they were identified in the recording process) are shown to form clusters.

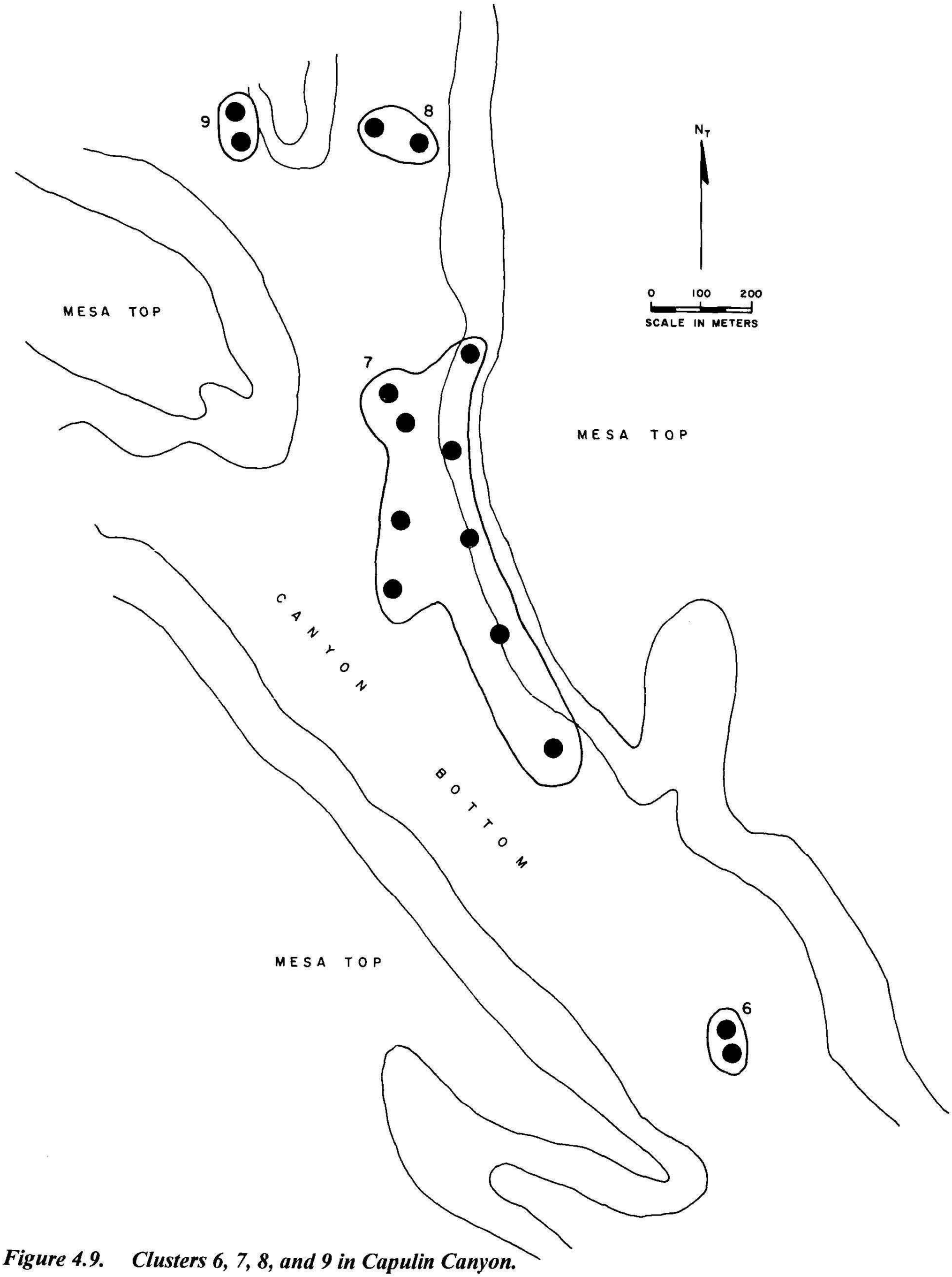


Figure 4.9. Clusters 6, 7, 8, and 9 in Capulin Canyon.

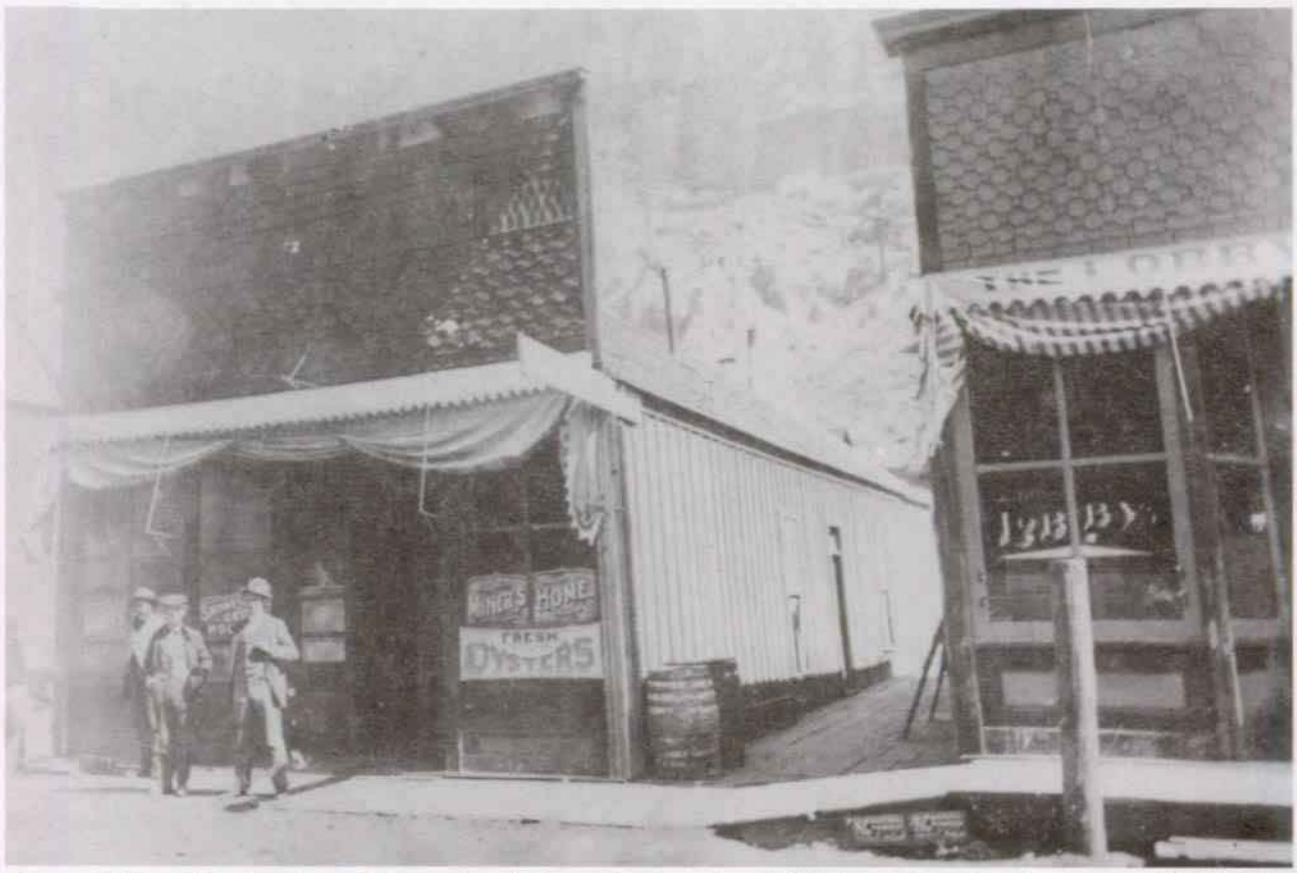


Figure 4.10. Miner's Home Saloon, Bland, New Mexico, about 1900. Note the advertisement for KC Baking Powder at bottom right. Photograph courtesy of the Museum of New Mexico, neg. no. 8699.

Three types of chronological indicators were evaluated in the analysis of Sheepherding/ Ranching sites: product labels, ammunition cartridges, and inscriptions (see Appendix 4 for cluster date ranges). As indicated by Tables 4.3 and 4.4, the artifact inventory found with these sites and clusters of sites was relatively meager. Among the artifacts found, the most precise chronological indicators appeared in the form of painted and embossed labels from discarded cans. Since the styles of labels varied over time, the most precise dating was possible when the labels had been recorded in the field by drawings and rubbings. Several types of products were identified by these labels, principally baking powder, lard, and sardines—all items that were relatively nonperishable.

Some brands were apparently more popular or more easily available than others. KC Baking Powder, which was first manufactured in 1890 and registered as a trademark in 1911 (Ward, Abbink, and Stein 1977:240), appeared at a number of sites: one example each from LA 13659, 50909, and 60502, and two cans each from 50949, 60512, and 70940. An advertisement for KC Baking Powder also appears in a photograph of the Miner's Home Saloon in Bland, taken in about 1900 (Figure 4.10). Calumet Baking Powder, represented by a single 5–pound tin at site 60384, was first manufactured in 1890 (Periodical Publishers Association 1934). Lard was represented by cans labeled "Anglo American Pure Trademark Ref[ined] Lard/Packing . . . Division Co." (LA 70980), "Plankinton & Armour Choice Refined Family Lard Kansas City MO" (LA 84115), and "Orbis [?Orris] & Company Lard Refiners" (LA 70954). Lard manufactured by the "Armour Packing Co. Lard Compound Kansas City Mo" (LA 60467) was produced between 1885 and 1932–1933 (Rossillon 1984:120). Dates from the ammunition found at sites support historic usage

starting around 1880. Cartridges produced by the Peters Company, manufactured between 1887 and 1934 (Berge 1980:224), were found at LA 65742 and 70940. The USC company, represented at LA 65743, began production in 1868 (Berge 1980:224).

It should be emphasized, however, that the dates provided by labels and ammunition indicate nothing more specific than the earliest possible date of discard of those items. Because the supplies of goods might have continued to circulate long after production, and because the emptied containers might have continued to be used repeatedly prior to final discard, the dates indicated in Appendix 4 are only rough guidelines for the occupation of sites.

More precise indicators of the dates of site usage are cavate inscriptions that include exact dates. The earliest reliable dates for nineteenth-century occupation were reported by Hendron (Hendron 1943:1), who recorded an inscription in Spanish reading "Deciembre 1846" in one of the Group M cavates of Frijoles Canyon. The accompanying list shows the inscriptions from LA 50909, the site that contained the greatest number of inscriptions of any recorded historic-period site from the survey (see Figure 4.11 for a drawing of one of the inscription panels). The names from these inscriptions show a predominantly Hispanic (or Hispanic-Pueblo) ethnic grouping, and among the place-names given, Cochiti figures prominently. This is not surprising, given the magnitude of economic activity in the Cochiti-Pines-Bland area to the south of the present monument boundaries and the possibility that people passing through the region used cavates for temporary shelter. In addition, there are what appear to be advertisements for "The Reliable Tailoring" and "FR Tailior Shop" (*sic*), both at Cochiti, and "Best & Co. Boston Mass." Another indicator of local affiliation is suggested by the brandlike mark on a sickle blade found in the backcountry (IO 694). This apparent brand mark is identical to one registered by Otelo Martínez of Espanola from 1903 until at least 1906 (New Mexico Cattle Sanitary Board 1903, 1906).

Similar inscriptions appeared in Frijoles Canyon as well, as recorded by Sylvanus Morley in his 1908 notebook. He mentioned the isolated kiva of group E in Frijoles Canyon, with the comment that "Mexican scratchings were to be seen everywhere in the shape of crosses, etc., chickens, pecked in the smoked zone though not in the plaster" (Morley 1908:103). However, the presence of historic camps in Frijoles Canyon is documented most effectively through historical sources, since archeological evidence is less abundant there than in the backcountry. During the early portion of Park Service tenure in the monument, efforts were clearly made to prepare visitors for a glimpse of antiquity; this probably involved the cleanup of what little remained of herders' camps, which were perceived as "trash." According to maintenance documents on file at the monument, some of the cavates in Frijoles were "replastered and resmoked" in the 1940s,

Inscriptions from LA 50909

Mr. Stanley
...sita Chavez/Tonita Qunitai(a)/J...ita Estria/..ia Ortiz
Jose H. Shije
Kate Howell/Josephine Pena
Justo Perez/Juddie Perez/October 17 1914
Nat Chato/July 3 1913
Nat Chavez/October 15 1912
T. Naranjo/July 1913
Nat Chato
Nat Chato/July ?8 1913
Albert Gallgos/La Madera New Mexico/June 7 1913
Nestor A...z/October 3 1931
Pedro Totalito/November 8 1941
Manuel Devarges/June 7 1963
?J Stanley/June 4 1913
B (?ull) Shea
Joe Trujillo/Ben Trujillo/Rose Trujillo/Stan Trujillo/Cochiti Pueblo
Riley Joy
Dominga Chalon (or Chalor)
Dominga
Stanley Trujillo/Onofre P.../Lorenzo Cordera?/A..Biquell Swing?
Beuicio Trujillo/Wednesday Nov 4 19(10?)
The U.S. Horse Herders...have...Stanley...New Mexico (?)
The U.S. H(orse Herders)...Stanley
...e Trujillo/[probably goes with] March 30 1914
Ysidro Corbero/Best & Co/Boston Mass
May 15 1910
July 1 1913
Septembe(r) 26 1911
The Reliable Tailoring Cochiti
S...ian Institute

On the exterior of the cavate appears FR Tailior Shop (*sic*), and the figure 1915; there is also a horseshoe nailed to the tuff.

PANEL 02-36-01



Figure 4.11. Inscriptions from LA 50909.

probably eliminating some of the inscriptions recorded by Hendron and Morley (recent work at cavate group M has, however, included a more elaborate study of the inscriptions than was undertaken during the 1987–1991 Bandelier survey).

Clear archeological evidence for the Sheepherding/Ranching period use of Frijoles Canyon is available only in the upper reaches of the canyon—for example, IO 258—and in scant traces such as the single fragment of pre-1925 purple bottle glass from LA 77728. For the historic camps in Frijoles, one must turn to literary evidence, beginning with Adolph Bandelier, who wrote of "shepherds and cattle thieves" who had made their home in Frijoles Canyon, using the cavates of the canyon walls as dwellings (1892:142). In the *American Anthropologist* of 1904, Hewett (1904:657) described the cavates of the Pajarito, adding that "it is not unusual to find Mexican herders living in them." Only three sites that can be assigned to the earliest portion of the twentieth century were identified in the survey: a historic camp atop the Pueblo site LA 10942, which may also be associated with the excavation of that pueblo; LA 84091, a rockshelter associated with a semicircle of rocks (for an animal pen?) and a length of barbed-wire fence; and LA 84099, a single hearth with an associated wall. All of these sites form a cluster, cluster 3 (see Table 4.3).

The range of dates shown in the graffiti, like the indicators from can labels and ammunition, indicates the time during which the area probably saw maximum use for ranching. Stock raising in this part of the Pajarito probably endured its last boom-bust cycle during and after World War I, when the War Finance Office first encouraged stock raising by giving easy loans on cattle and sheep and then, in 1919, called the loans in. A half-generation later, in 1932, the National Park Service officially excluded grazing from the monument.

Some of these camps may also be associated with logging activities and with travelers crossing the Pajarito from Española toward areas of activity in the south, including the mines at Bland and Albemarle (Figure 4.12).

Site locations in the Sheepherding/Ranching period appear to have been chosen for their suitability for animal husbandry. The introduction of domestic animals changes a habitation pattern in several ways: there must be an enclosure or confining system for the animals during hours when human monitoring is not available (i.e., at night), and there must be sufficient grazing for those animals. Locations that might have been suitable for agriculture during the prehistoric period, especially if that agriculture were carried out in a highly modified landscape, might not have been suitable for the keeping of herbivores. In addition, the water requirements of plants and animals are different, since animals require water daily and their needs may not be met by rainfall alone. These considerations all explain why significant historic activity was not located in the same areas as significant prehistoric activity.

Sites of the Sheepherding/Ranching period were positioned for easy access to water sources. Cluster locations are also preferentially located close to areas of abundant water; although some historic sites are on mesa tops and in dry canyons, 9 of the 18 clusters are located within 1 km of a permanent water source. The need for water can be met more flexibly by herders than by agriculturalists, since the former can lead their charges to water. In a variable environment with low human population density, this can mean a relatively high rate of success for herding, because drought conditions can be mitigated simply by moving the animals. Multiyear occurrences of particularly dry conditions tend to be relatively rare, so that short-term adjustments would have yielded a high level of success in the long run (for analogies to the prehistoric period, see Orcutt 1999b:234–239).

The locations of Sheepherding/Ranching sites also show that the inhabitants made opportunistic use of natural rockshelters and cavates. As a result, the slopes of these sites are greater than the slopes of prehistoric sites, where structures were more often built on level ground such as mesa tops. Table 4.5 illustrates the slopes associated with historic-period sites as they were recorded in the field and illustrates the trend toward placing historic sites on steep terrain.

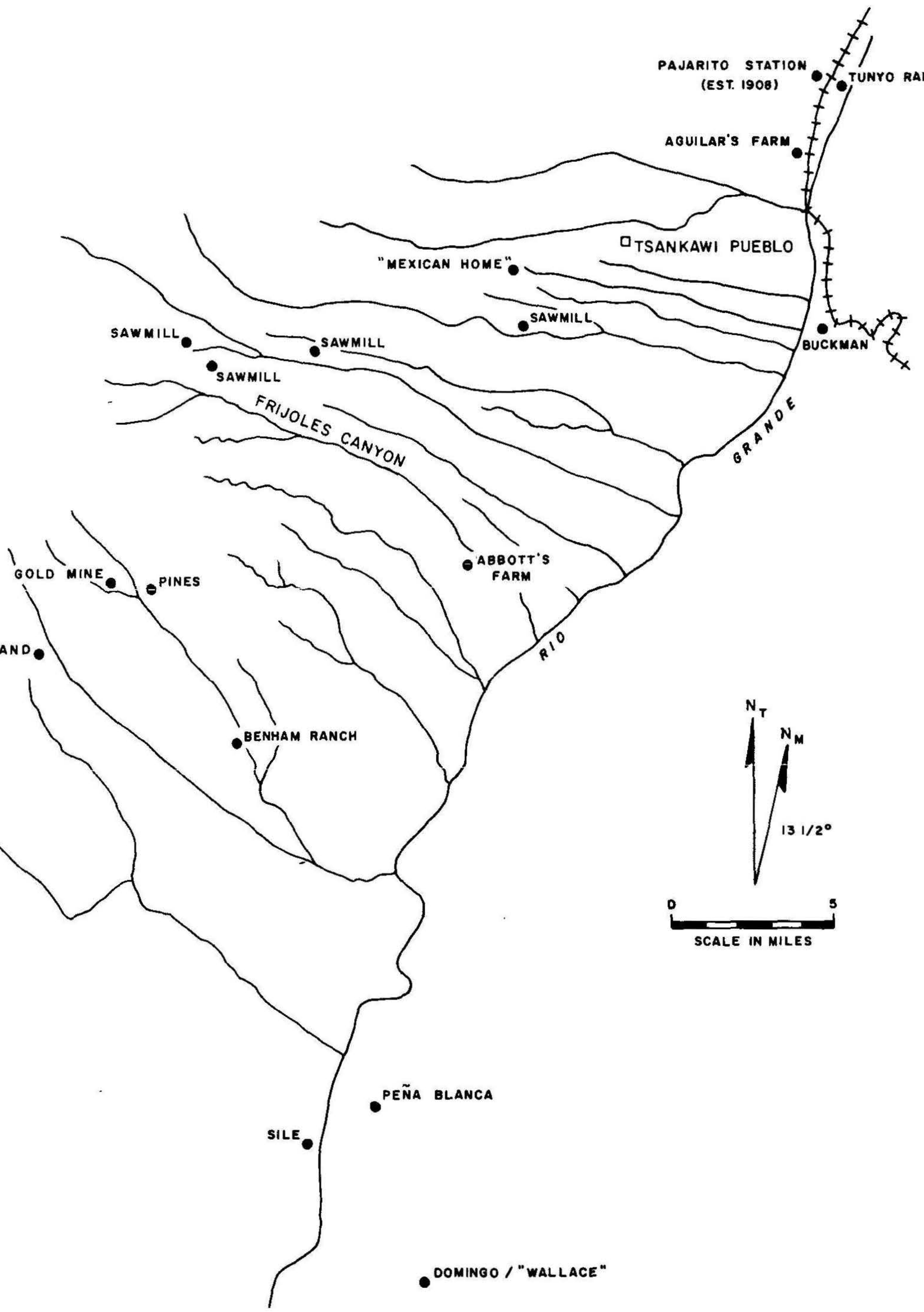


Figure 4.12. Settlements and other sites active on the Pajarito Plateau around 1907 (adapted from Harrington 1916).

Table 4.5. Slope calculations for historic and prehistoric sites.

	Percentage of Sites	
Slope (%)	Historic[1]	Prehistoric[2]
1-5	21	26
6-10	21	54
11-15	15	8
16-20	6	9
21-25	8	—
26-30	5	—
31-35	10	—
36-40	3	—
41-45	5	—
46+	6	3
Total	100	100

1. Includes all historic-period structures and animal husbandry loci. Excludes National Park Service and management constructions such as trails and the visitor center (total n = 86).
2. Includes all prehistoric structures and cavates, including shrines (total n = 1936).

Isolated occurrences that did not fit into clusters were nearly all associated with animal husbandry. Special-use items such as animal bells were recovered both as isolates (IO 518) and within clusters (special use cluster 4). It should be noted that some of the corrals and enclosures, especially those that seem relatively sturdy (e.g., LA 60113), may be the result of US Forest Service construction to promote grazing prior to the transfer of the monument to the National Park Service (Allen 1989).

Considering that the Sheepherding/Ranching period was a time when railroads and other modes of transportation were opening up consumer markets for eastern goods, and when local mercantile establishments were prepared to barter agricultural and ranching products for those goods (eliminating the difficulties of a perennial cash shortage), one would expect a high density of containers and other artifacts in the surface archeological record. Numerous towns in the immediate vicinity of the Frijoles area, already established to cater to the needs of miners and loggers (Figure 4.13), would have been able to supply the needs of ranchers and herders. This expectation is reinforced by the examination of other historic-period sites in New Mexico. Mining towns such as Bland, just as much as the cities of Santa Fe and Albuquerque, were centers of consumption for long-distance goods. The archeology of homestead sites and army forts also shows large quantities of cans and bottles, indicative of easy access to a wide variety of goods (e.g., Boyer 1992; Crass and Wallsmith 1992; Doleman 1989; Ward, Abbink, and Stein 1977).

The expectation of relative wealth in the historic period of the Pajarito Plateau is further reinforced by recognition of the large numbers of livestock that grazed the Bandelier area. Comparative counts from adjacent areas indicate the magnitude of stock raising: between around 1908 and 1918, the annual count of livestock in the area now known as the Baca Location Number 1 amounted to more than 200,000 sheep and several thousand cattle (Allen 1989). Within the boundaries of the monument itself, the amount of grazing at the turn of the century and the resultant reduced biomass were probably responsible for the low incidence of fires for several decades before the advent of purposive Park Service fire suppression (Allen 1989). Finally, the subject of grazing was of considerable concern to the early Park Service personnel, who commented on erosion caused by overgrazing and the need to fence off the monument to reduce the impact of wandering livestock.

The historic and photographic record indicates prosperity for the region: in the boom times of mines and railroads in the late nineteenth century in northern New Mexico, consumer goods were touted as within the reach of all, and even miners dined on oysters. Yet the material culture of the Sheepherding/Ranching period in the area of Bandelier National Monument comprises very few artifacts in comparison with expectations for the historic period. The most obvious conclusion is that the shepherds on the *partido* system who governed the flocks of sheep could afford none but the most



Figure 4.13. Logging on the Pajarito Plateau, late nineteenth or early twentieth century. Photograph courtesy of the Museum of New Mexico, neg. no. 5195.

basic goods (Figure 4.14). They lived a life of marginal subsistence in makeshift shelters, reusing and curating containers numerous times and leaving evidence of their passage through the labored etching of their names in the plastered walls of antiquity. Contents analysis of containers recovered in the archeological survey indicates that the prevalent foodstuffs were lard, sardines, baking powder, and milk, with some tobacco and limited quantities of coffee (see Appendix 3).

Stock-raising activity appears to have ceased after the mid-1910s, a time that marks both the beginning of the monument period and a stock-raising crash after the end of World War I and the recall of War Finance Office loans. This period also corresponds to the maximal appearance of dated inscriptions from areas such as cavate LA 50909. The expectations of a high level of consumer goods and a corresponding high discard level are fulfilled only for the years after the area became a national monument, when larger numbers of people from outside the local environs made their way to Frijoles Canyon, and when government paychecks and supplies enabled the consumption of prepared foodstuffs in quantity.

The Twentieth Century

The settlement of Abbott's Farm in Frijoles Canyon in 1907 serves as a convenient marker for a new kind of long-term occupation of the canyon. Afterward, the canyon was transformed by the presence of the Civilian Conservation Corps camp and the development of the area as a locus of public visitation (Figure 4.15).

In the twentieth century, the largest source of artifacts-in-the-making was trash generated by early monument personnel (such as the trash at LA



Figure 4.14. Sheepherders, northern New Mexico (undated). Photograph courtesy of the Museum of New Mexico, neg. no. 6087.

84092, totaling 218 items) and casual visitor trash that accumulated in the wilderness. In addition, several singular events produced larger quantities of refuse. Previous archeological work, such as Hewett's archeological field schools in Frijoles Canyon and Charles Lange's horseback survey of the plateau, probably produced residual trash piles (see Figure 4.16 for a historic photo of such a camp on the Pajarito Plateau). Camps occasionally are created in the present era; for example, the La Mesa Fire of 1977 brought large numbers of people with their equipment into the backcountry. These activities appear to have left no permanent impact on the landscape other than trash deposits, although these deposits can be considerable. One such trash pile recorded by the survey (IO 865) included 40 metal cans and objects and one glass jar with a screwtop lid; the scatter was given a date of post-1956 on the basis of the date of a single crushed sardine can. Another trash pile, dated to the early twentieth century on the basis of one can marked "Est. 1922," contained 53 cans in a tidy stack near a boulder and may represent a single depositional event.

In what follows, three sites associated with early long-term habitation or archeological work are treated separately. Sites that are the result of modern Park Service management of the canyon are treated as a single group. A complete list of sites associated with National Park Service maintenance can be found in Appendix 5. A separate list of sites that represent road construction and trash dumping in the Tsankawi area is tabulated in Appendix 6, and special-purpose site clusters, including telephone and boundary lines, are listed in Appendix 7.

Ranch of the Ten Elders

Two sites, LA 77725 and 77714, comprise the remains of Abbott's Farm, later known as the Ranch of the Ten Elders. LA 77725 encompasses the ranch complex, which is today represented by traces of

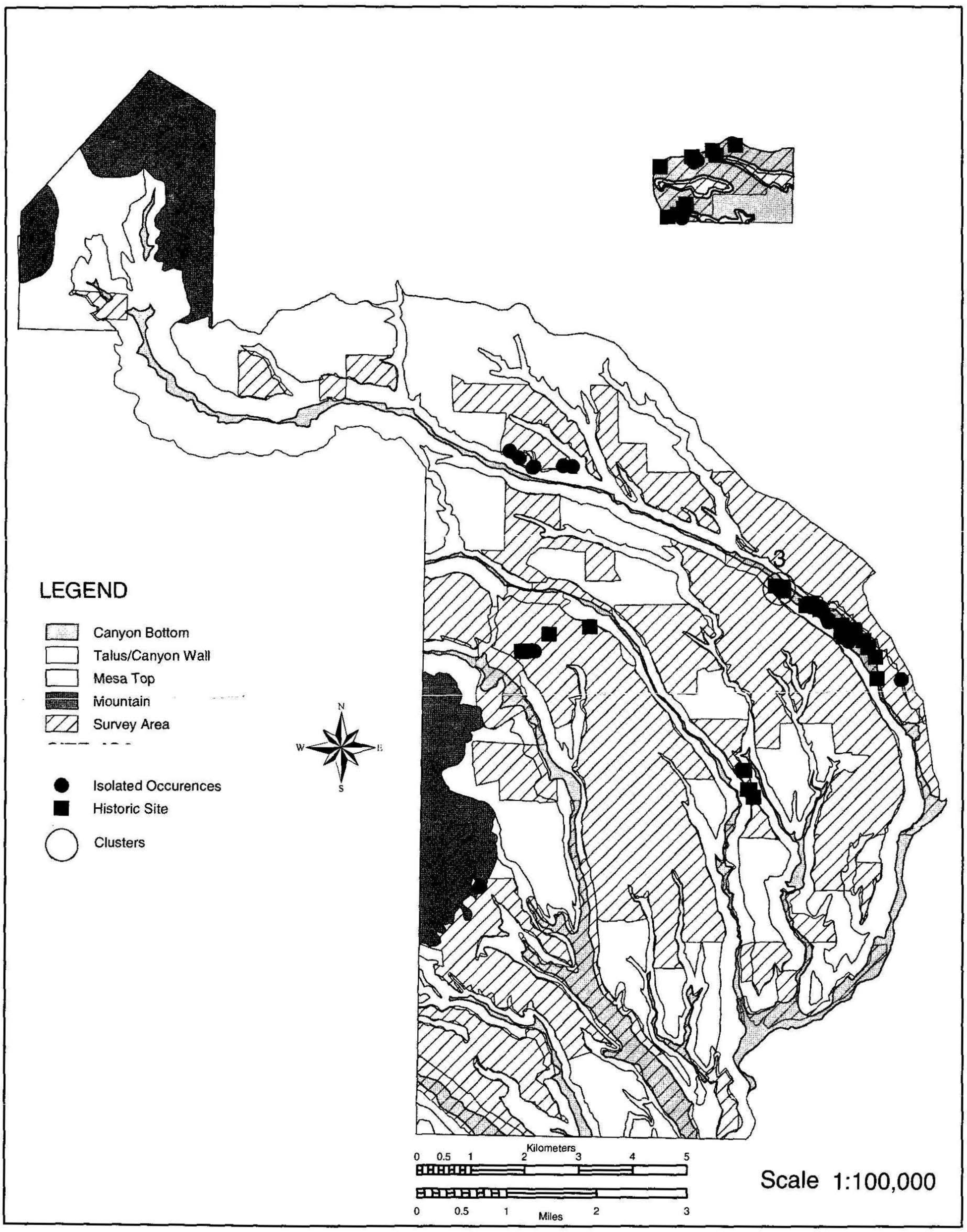


Figure 4.15. Distribution of twentieth-century sites and clusters in Bandelier National Monument.



Figure 4.16. Early-twentieth-century camp and trash pile on the Pajarito Plateau. Photograph courtesy of the Museum of New Mexico, neg. no. 28081.

fences and foundations. LA 77714 consists of a number of ditches and 18 live trees, including apple, pear, peach, and walnut; most of this orchard was apparently planted around 1925–1933 (Chris Judson, personal communication). Possibly also associated with this site is IO 771, described in the survey field notes as a tuff boulder under which "two infants are supposedly buried. . . . Remains of where a plaque used to be [are] on NE side; measures 9 in. x 6 3/4 in. (22.8 cm x 17 cm)."

Duchess Castle

The complex known as Duchess Castle (LA 42), associated with Vera van Blumenthal and Rose Dougan (see chapter 2) is located near the northern boundary of the detached Tsankawi unit (see Figure 1.1). In addition to a now-dilapidated residential unit created from prehistoric remains, there are a number of isolated features that may be related to the heavy use of this area after the beginning of the twentieth century. The following isolates, though undatable, support the interpretation of this area as a long-term habitation and visitation zone during the occupation of LA 42:

LA 70909	Old road, 185 m (606 ft) in length
LA 70910	Cavate with "fairly recent" ash and charcoal
IO 464	"Recent U-shaped rock alignment with square corners"; measures 2.1 x 1.4 m (7 x 4.5 ft)
IO 538	"Pile of river cobbles heaped in front of and behind a large section of a saw-cut log."
IO 571	Rockpile of basalt and rhyolite cobbles, with recent fire rock ring about 8 m south of rock pile.
IO 572	Rockpile of boulders and cobbles; 4 m (13 ft) west of rock pile is historic fire ring 0.7 x 0.7 m (2.25 x 2.25 ft) in diameter

CCC Camp

The area recorded as LA 77728, located directly behind (up-canyon from) the current visitor center in Frijoles Canyon, represents the site of the historic Civilian Conservation Corps camp as it was occupied from 1933 to 1940. Little trace remains of the camp today. Although the full-service camp housed up to 200 men at a time, with all necessary facilities, including a dining hall, the National Park Service's mandate did not include the preservation of temporary facilities: the CCC's goal, after all, was to construct a permanent set of buildings. Accordingly, the camp buildings were dismantled and the foundations bulldozed. The effacement was executed as carefully as that of any other CCC project: "Although the buildings were gone, the levelling that was done when the camp was constructed took considerable time to naturalize to the high standards of Park Service landscape architects—making the area look as if [it] had been untouched" (Harrison, Soullière, and Copeland 1984:58).

Despite these exacting efforts, there are numerous archaeological traces of the CCC camp. Artifacts recorded by the survey include large quantities of glass (n = 76) and metal (n = 70). Contents analysis of the containers indicates a considerable variety of foodstuffs, while nonfood items reflect the diversity of activities: all-purpose cleaners, automotive fluid cans, and cigar containers. Access to fresh milk products is suggested by the recovery of a glass milk bottle. Personal effects include a harmonica plate, and the function of the site is indicated by other miscellaneous metal objects such as metal clips, hacksaw blades, rods and tubing, and various kinds of wire. Although some of these objects may have been the products of trash dumping or casual visitation, the great care with which the camp was obliterated at the end of the project suggests that this area did not subsequently revert to use as a garbage dump and that the majority of the items are remnants of CCC camp life. Additional archeological remains include the bulldozer-impacted rubble heaps marking the dismantling process, as well as artifacts related to camp life, including containers, architectural fragments, and personal effects. The quantity of artifacts that remains on the landscape for recovery by survey methodology is a hopeful sign that archeological sites are indeed difficult to erase and that even when purposefully and badly damaged, they retain a level of interpretive significance (Smith 2001).

National Park Service Activities

The wide range of activities undertaken by the National Park Service has left a number of manifestations in the archeological record. The presence of rubble, cement blocks, corrugated metal, and pipelines indicates the extent of large-scale construction activities, while checkdams and abandoned trails show modification of the landscape for public use and enjoyment. One probable habitation site from this period was recorded (LA 77715, in Frijoles Canyon); it consisted of rubble scatters and relatively large quantities of glass (n = 18), metal (n = 51), and flower-patterned porcelain fragments. Comparison with early documentation of the canyon indicated that LA 77715 corresponded to the location of a "ranger station, road, garage and unknown building" as shown on a 1935 map of the headquarters area. These remains of the Forest Service ranger facilities were apparently dismantled at the time of the National Park Service–CCC construction of the administrative compound.

Since twentieth-century materials were noted throughout the monument, the designation of formal clusters was an inconclusive exercise. In only one case was there a tightly circumscribed locus of sites in close proximity to one another, consisting of rock shelters, historic camps, and hearths located in Frijoles Canyon. This group was designated cluster 3 (see Table 4.3). Site 10942 is a multicomponent site consisting of Anasazi as well as early-twentieth-century glass and cans; the site report suggests that the historic materials may be associated with the excavation of the site's Anasazi component, also known as the "Pueblo of the Water People."

Summary of Twentieth-Century Materials

The early twentieth century was a time of considerable modification and reuse of Frijoles Canyon and surrounding areas. One of the most

marked alterations to the prehistoric landscape came in the form of reuse of Pueblo architectural elements to construct housing. Duchess Castle is located on the ruins of the substantial prehistoric site LA 42 in the Tsankawi area; in Frijoles Canyon, Judge Abbott "built a house from tufa-blocks of the [Tyuonyi] ruin" (Harrington 1916:410). This tendency continued after the creation of the monument: archeologists lived in some of the cavates, and the excavated tuff blocks of the central Tyuonyi ruin were used to line the visitors' pathway through the canyon. Farming, including plowing and the introduction of non-native species of plants and animals, seriously altered the ground surface of the canyon. The subsequent phases of construction, pipe laying, and road building also resulted in considerable changes to the landscape. The road, first navigated by car in 1933, was constructed over the vocal opposition of many local residents and preservationists but was a critical component of the National Park Service's plan to develop the monument (Rothman 1992:193).

In terms of archeological methodology, the greater frequency of written records in the twentieth century is matched by a larger scale of construction and destruction activities. In many instances, even substantial structures such as the old ranger station in Frijoles Canyon (LA 77715) and the buildings of the CCC camp (LA 77728) were erected and then completely dismantled within the space of mere decades. This scale of activity was aided by the development of mechanical transportation including the automobile, as well as by large-scale engineering designs and the integration of the monument into a national-level program of Depression-era work relief and development of the national park system as a resource for public education and leisure.

The study of material culture and its archeological traces, however, still has a role to play in the understanding of modern people. The record of historic graffiti illustrates the actions of specific individuals at specific times, a relative rarity in the archeological record. These graffiti show that even as the area of the monument was being transferred to federal administration, it continued to be traversed by local people: one inscription from LA 70863 records the dates 1930 and 1934, while the more elaborate inscription at 70940 reads "1925 Amadae CM Abur 1938 [1936?]." Archeology also provides a way to view social configurations in a more complex way, in which the physical realm is consciously modified as a frame of reference for human interactions (Smith 1999). Although formal written records of our own culture are abundant, the way in which people use objects and landscapes often provides information about cultural values and social activities that are otherwise unstated (Gould and Schiffer 1981; Rathje and Murphy 1992; Schiffer with Miller 1999). For example, ideas about the organization and presentation of public space are evident in the way certain improvements were made at the monument. The careful removal of older trash and buildings by early National Park Service personnel was largely limited to areas subject to visitation; in regions that visitors were unlikely to see, such cleanup was not undertaken. The archeological record also captures aspects of human behavior that may be suppressed from official written documents. At LA 77728, the CCC camp, the survey crew recorded a contemporary container for alcoholic beverages—a marker of an activity that was not part of the official records of camp life (Smith 2001).

Contemporary Symbolic Sites

This category was established to describe sites where activities that appear to have been of a symbolic or ceremonial nature were carried out. Whereas some of these shrines may have had prehistoric antecedents, the presence of newer materials (such as deer antlers) indicate that there is still use of these areas at the present time. Although determining ethnic or religious affiliation for any particular site is impossible, two groups are known to practice symbolic activities in the area of the monument: Native Americans, primarily from the Cochiti area (with visits by people from as far away as Zuni), and "New Age" devotees who practice a form of holistic nature worship. Determination of the exact nature of Native American religious ritual is difficult because of the closed atmosphere surrounding such ritual; non–Native Americans are

rarely permitted to witness or record ceremonies. The "New Age" phenomenon is somewhat more accessible for evaluation (e.g., Brown 1997).

Although the Pueblo land grants included none of the area under the current jurisdiction of Bandelier National Monument, it is clear that Pueblo people have made use of the surrounding landscape from prehistoric times to the present. In deference to local concerns, no further information about contemporary symbolic sites is presented here. The presence of symbolic sites on land administered by the National Park Service points to the multifaceted nature of government land management. While the mandate of the National Park Service consists of protecting wilderness and making areas accessible to the public, it also includes a commitment to those who have inherited ancient traditions. Responsible resource management and visitation should continue to incorporate consultation with native residents in the surrounding communities.

A more difficult question is the right to religious freedom exercised by non-Pueblo people on archeological sites. The desire to make physical gestures of respect is often a misguided one on the part of "New Agers," who have in some cases actually defiled native sacred areas by leaving objects or human remains. Greater education, in addition to continued vigilance and enforcement, may serve to avert this problem; in any case, such incidences are less common now than they were in the first years of the 1990s.

5

Conclusion

As a frontier zone for several Euro-American nation-states, the area that is now New Mexico witnessed numerous changes through the integration of immigrants and native peoples, alteration in the structure of land tenure and taxation, and a variety of exploitation strategies for mineral and agricultural wealth. As a result, the historic period was far from static and illustrates the impact of faraway wars and economic developments on frontier areas. Population fluctuated as political changes, drought, raiding, and economic opportunities altered living conditions for all those who settled along the Rio Grande.

The area of Bandelier National Monument had a low population density until the late nineteenth century, when the area served as an essential but economically underprivileged support zone for extractive industries such as ranching, mining, and logging. When evaluated as clusters of chronologically and functionally related sites, the majority of historic components recorded by the Bandelier survey are composed of short-term or ephemeral habitations and structures associated with animal husbandry during the period from about 1880 to 1930. Some elements of infrastructure, such as the corrals and pens noted at various sites (e.g., 65864), along with the many inscriptions at LA 50909, indicate that several locations were visited repeatedly during this period.

Much of the activity in the Bandelier area during this period can be related to broader economic patterns on the regional and national scale. The development of lumbering and mining at towns and villages adjacent to the monument provided one means of local economic growth, though livestock raising appears to have been the only large-scale pursuit within the monument boundaries. As a result of the incursion of the railroad (with the closest junction at Buckman), of contacts with mining and lumbering towns such as Bland and Pines, and of the growth of mercantile communities in Española and Santa Fe, one would expect that a large number of the items that were available for purchase would be represented in the surface archeological record. On the contrary, however, the items of the surface record reveal a rather poor material culture. Though ranching and herding were taking place at a time of generally increased prosperity in the northern Rio Grande, the results of that prosperity were differentially distributed. Herders were thus constrained not only by the portability of items (restricting the use of breakable containers such as glass and ceramics) but also by their apparent inability to purchase any but the most basic subsistence goods. The absence of horse tack also indicates that these herders were on foot, another factor limiting the number of items that could be carried and indicative of relatively low purchasing power.

The ability of archeological evidence to make a specific comment about local conditions vis-à-vis large-scale trends contributes to the understanding of social complexity. A generation ago, the general utility of the historic-period archeological record as an addition to anthropological research was already widely acknowledged, with "some historical archeologists . . . beginning to see the archeological record of the historic past as relevant to a broad range of social science concerns, and historical archeology as sharing research goals with

anthropology, social and economic history, and cultural geography" (House 1977:241). The archeological study of historic-period materials, specifically of American cultural phenomena, has been manifested in a number of ways, including the study of minority groups for whom there are limited historical records, such as the Navajo (Brugge 1978, 1983) and enslaved African-Americans (Leone, Potter, and Shackel 1987). Scholars have also evaluated contemporary material culture to assess patterns of modern consumption and discard behavior (e.g., the Garbage Project [Rathje and Murphy 1992; Thompson and Rathje 1982]).

The use of historic-period archeological phenomena to address questions beyond the scope of particular regional histories is also beginning in the American West. There, specific environmental and cultural conditions have resulted in settlement patterns and material-culture assemblages that differ from those in the eastern United States. Factors such as the length of site occupation, which is often short in comparison with the multigenerational occupation of eastern sites, condition the visibility and interpretation of archeological remains. These differences require the development and application of alternative site definition and evaluation strategies; useful site definitions for the historic period in the American West are likely to be quite different both from those of contemporary eastern counterparts and from those of the prehistoric sites that preceded them.

As a measure of the increasingly recognized significance of historic documentation, the National Park Service has begun to devote greater attention to artifacts and sites of the historic period. The Park Service was initially established in 1916 with a mandate to "conserve the scenery and the natural and historic objects and the wild life." It did not employ professional historians until 1931, shortly before it became the custodian of a number of historical areas in the eastern United States that had previously been in the care of the Departments of War, Interior, and Agriculture (Bearrs 1987). In subsequent years, the National Park Service added to this collection of monuments and memorials commemorating significant moments in American history, as well as becoming the lead agency for the National Historic Preservation Program set forth by the National Historic Preservation Act of 1966 (Hertfelder 1987).

As has increasingly been demonstrated through archeological projects focusing explicitly on the historic period, the exploration and documentation of North American history is not limited to the famous battlegrounds and colonial sites of the East and South. Though the western United States is considerably younger, in national terms, a number of locations in the West have been identified as noteworthy for the activities that took place in them. At Bandelier National Monument, the history of the twentieth century has been acknowledged in the preparation of a Historic Structures Report (Harrison, Soullière, and Copeland 1984), which resulted in the addition of the current visitor center complex to the National Register of Historic Places in 1987. This complex, constructed by the Civilian Conservation Corps from 1933 to 1941, is a testimony to local architectural style and the people who built it, as well as reflecting the significant jobs programs and economic conditions of the Great Depression. No less important is the role that these Bandelier buildings played during World War II and the development of nuclear weapons at Los Alamos.

As an active monument, Bandelier continues to be marked by visitors and management in ways that will in time become part of the archeological record as well (Figures 5.1–5.2). Although many of the activities that provide historic-period data, such as littering and graffiti, are now proscribed, other modifications to the landscape are evident. The increase in visitor traffic has forced changes in the way in which visitors are accommodated: camping and overnight lodgings in Frijoles Canyon have long been curtailed, and management plans foresee that all day-use parking will also be removed from the canyon, to be replaced with shuttle service from the canyon rim. Changes in infrastructure and the physical plant, such as increased parking, restroom facilities, and walking trails, are an inevitable result of growth. Over time, some abandonment of facilities is almost certain to occur, revealing—just as the vestiges of roads, trails, containers, and structures from the early part of the monument's history do—the traces of former use.



Figure 5.1. Visitors to the Frijoles Canyon Lodge in the 1920s. Photograph courtesy of the Museum of New Mexico, neg. no. 6087.



Figure 5.2. Visitors to the Frijoles Canyon Lodge in the 1950s. Photograph courtesy of the Museum of New Mexico, neg. no. 59337.

Appendices

Appendix 1: Bandelier Archeological Project Metal Record Form.

Bandelier Archeological Project
Metal Record Form

LA#_____ Recorder _____ Date _____ Start T_____ Finish T_____

Culture _____ Comp. # _____ Comp. Type _____ Dates _____/_____

Feature Type and No.	Sample No. and Type	Dimensions	Area (m^2)	Total Pick-up	Total Analyzed
____/____	____/____	_____	_____	_____	_____

I. CANS

Group No.	Freq.	Type	Dimensions d x h	Style of Opening	Type of Seams Side	Top	Bottom	Base Profile
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Description of Labels: _____

Appendix 1 (Continued).

Bandelier Archeological Project
Metal Record Form (cont'd.)

LA# _____ Comp. No. _____ Comp. Type _____ Feature Type/No. _____/_____

II. Nails

	Count	Length
Hand Wrought		
Cut		
Wire		

III. Other Metal Artifacts

Description and measurements of other metal objects: _____

IV. Comments

NOTE: Collect good diagnostic examples for type collection.

BANDELIER ARCHEOLOGICAL PROJECT
GLASS RECORD FORM

LA# _____ RECORDER _____ DATE _____ START T _____ FINISH T _____

CULTURE _____ COMP. # _____ COMP. TYPE _____ DATES _____/_____

Feature Type and No.	Sample No. and Type	Dimensions	Area (m^2)	Total Pick up	Total Analyzed
_____/_____	_____/_____	_____	_____	_____	_____

GROUP NO.	COUNT	COLOR	FORM	SURFACE	LABEL TYPE	STYLE OF FINISH	SEAM LOCATION
1							
2							
3							
4							
5							
6							
7							
8							

DESCRIPTION OF LABEL MESSAGE: _____

_____

DESCRIPTION OF MANUFACTURER'S MARKS: _____

_____

IMPORTANT: Attach sketch of label message and manufacturer's marks on separate sheet.

OTHER COMMENTS (by group number):

_____

NOTE: Collect good diagnostic examples for type collection.

Appendix 3: Bandelier Historic-Period Metal Container Identifications by Size.

Can Size (inches)	Number	Identifiable Contents	LA Number
2 x 1 1/2	1		
2 1/2 x 1	1	1 Arnica compound salve	65771
2 1/2 x 1 1/2	4		
2 1/2 x 1 3/4	6		
2 1/2 x 2	7		
2 1/2 x 2 1/4	16	14 evaporated milk	50949
2 1/2 x 2 3/8	2	2 milk	70907
2 1/2 x 2 1/2	18	5 milk	10942
2 3/4 x 1/2	2		
2 3/4 x 1 1/2	1		
2 3/4 x 2	1		
2 3/4 x 2 1/4	1		
2 3/4 x 2 1/2	5		
2 5/8 x 2 3/4	1		
2 7/8 x 1 3/8	2		
2 7/8 x 2	1		
3 x ?	3	2 baking powder	13659
		1 auto fluid	77728
3 x 3/4	1	1 tobacco	42
3 x 3/4	1		
3 x 1 1/2	1		
3 x 1 3/4	2		
3 x 2 1/4	1		
3 x 2 1/2	2		
3 x 2 3/4	10		
3 x 3 x 1 3/4	2	2 meat	50949
3 x 3 x 2	1		
3 x 3	1		
3 1/8 x 2 1/2	1	1 Brazil prob. meat can	70907
3 1/4 x 2 1/4	1		
3 1/4 x 2 1/4 x 1 1/4	1		
3 1/4 x 2 1/2	2		
3 1/4 x 2 5/8	1		
3 1/4 x 2 3/4	9		
3 1/4 x 3	15		
3 3/8 x 2 7/8	3		
3 1/2 x ?	1	1 cleaner	77728
3 1/2 x 1	1		
3 1/2 x 1 3/4	1		
3 1/2 x 2	1		
3 1/2 x 2 1/4	1		
3 1/2 x 2 1/2	1		
3 1/2 x 3	5		
3 1/2 x 3 1/4	3		
3 1/2 x 3 1/4 x 2 1/2	9		
3 1/2 x 3 1/2 x 2 3/4	1		
3 3/4 x 2 1/4	1		
3 3/4 x 2 1/2	7		
3 3/4 x 2 3/4	9		
3 3/4 x 3 x 2 1/4	2	1 meat	65863
3 3/4 x 3	32	30 milk	77715
3 3/4 x 3 1/4	4		
3 3/4 x 3 1/2	1		
3 13/16 x 2 1/16	1		
3 7/8 x 3	43	20 milk	70907

Appendix 3 (Continued).

Can Size (inches)	Number	Identifiable Contents	LA Number
4 x ?	2	1 tea	84099
		1 baking powder	50949
4 x 1 1/2	1		
4 x 2	2		
4 x 2 3/8 x 1 1/2	1	1 meat	70907
4 x 2 1/2	27		
4 x 2 3/4	31	1 beer	65747
4 x 2 5/8	1		
4 x 3	12	1 sardine	65658
4 x 3 x 3/4	1		
4 x 3 x 7/8	6		
4 x 3 x 1	1		
4 x 3 1/4	3		
4 x 3 1/2	4		
4 x 4	1		
4 x 3 1/2 x 3 1/2	1	1 Lipton tea	77715
4 1/8 x 2 3/4 x 7/8	1		
4 1/8 x 3 7/8	1	1 oil filter	70905
4 1/4 x ?	1	1 tobacco	77725
4 1/4 x 3/4	1	1 sardine	70907
4 1/4 x 3/4	2		
4 1/4 x 2	2		
4 1/4 x 2 1/8	2		
4 1/4 x 2 3/4	4		
4 1/4 x 2 3/4 x 1/2	1	1 sardine	65630
4 1/4 x 3	14	1 tobacco	60505
		1 Prince Albert 70872	
		8 sardine	50909
4 1/4 x 3 x 3/4	11	4 Red Box sardine	65863
		3 sardine	70940
		2 tobacco	65863
		1 tobacco	77581
4 1/4 x 3 x 7/8	16	11 sardine (1 Red Box A, 5 Holmes)	3835
		1 label "Norvege," prob. sardines	84148
		4 sardine (1= Red Box A)	70937
4 1/4 x 3 x 1	2	1 tobacco	77725
4 1/4 x 3 1/4	3	3 Prince Albert cigars	77728
4 1/4 x 3 1/4 x 3/4	1		
4 1/4 x 3 1/4 x 1	12		
4 1/4 x 3 1/2	4		
4 1/4 x 3 3/4	12		
4 1/4 x 4 1/4	1		
4 1/2 x 3/4	1		
4 1/2 x 7/8	6		
4 1/2 x 1	9		
4 1/2 x 2	1		
4 1/2 x 2 x 3/4	1		
4 1/2 x 2 1/2	1	1 KC baking powder	60502
4 1/2 x 2 1/2 x 1	2	2 Union Leader tobacco	65638
4 1/2 x 3	45		
4 1/2 x 3 x 3/4	1	1 sardine	65771
4 1/2 x 3 x 3/4	1		
4 1/2 x 3 x 1	12	1 tobacco	65864
		11 tobacco	65630
4 1/2 x 3 1/4	32		
4 1/2 x 3 1/4 x 1/2	2	2 sardine	65864

Appendix 3 (Continued).

Can Size (inches)	Number	Identifiable Contents	LA Number
4 1/2 x 3 3/8	3		
4 1/2 x 3 1/2	94		
4 1/2 x 3 1/2 x 1	2		
4 1/2 x 3 3/4	3		
4 1/2 x 4	5		
4 1/2 x 4 1/8	1	1 prob. lard	70940
4 3/8 x 2 7/8	2		
4 3/8 x 3	2		
4 3/8 x 3 x 1	1		
4 5/8 x 2 1/2	2		
4 5/8 x 3	1		
4 3/4 x 1/2	1		
4 3/4 x 3/4	1		
4 3/4 x 2 1/2	9		
4 3/4 x 2 3/4	9	9 beer	65655
4 3/4 x 2 5/8	73	18 beer	84092
		46 beer	84148
4 3/4 x 2 3/4	13	1 Schlitz beer	65747
		1 Coors beer	65747
		1 Mission beverage	65747
		1 soda	77728
		1 Coke	65747
4 3/4 x 3	24	16 beer	65655
4 3/4 x 3 3/4	1		
4 3/4 x 4	27		
4 3/4 x 4 1/4	1		
4 7/8 x 4 1/4	1	1 paint	70907
5 x 3	2	2 Folgers coffee	70907
5 x 3	1		
5 x 3 1/4	3		
5 x 3 1/2	1		
5 x 3 3/4	1		
5 x 4	1	1 automotive oil	
5 x 4 1/4	1		
5 x 4 1/2	1	1 prob. lard	65598
5 x 4 1/2	1		
5 1/4 x 2 1/4	1	1 modern beer can	42
5 1/4 x 2 3/4	1		
5 1/4 x 3	1		
5 1/4 x 3 1/4	3		
5 1/4 x 4	1		
5 1/2 x 1	1		
5 1/2 x 2 1/4	2		
5 1/2 x 2 3/4	1	1 beer	77728
5 1/2 x 3	2	2 baking powder	60512
5 1/2 x 3 1/2 x 1	1		
5 1/2 x 4	15	4 automotive oil	65655
		3 automotive oil	65725
		1 prob. automotive oil	65747
		7 automotive oil	70905
5 1/2 x 4 1/4	1		
5 1/2 x 4 1/2	2		
5 1/2 x 5	1		
5 5/8 x 2 5/8	1		
5 3/4 x 2 3/4	1		
5 3/4 x 4 3/4	1		

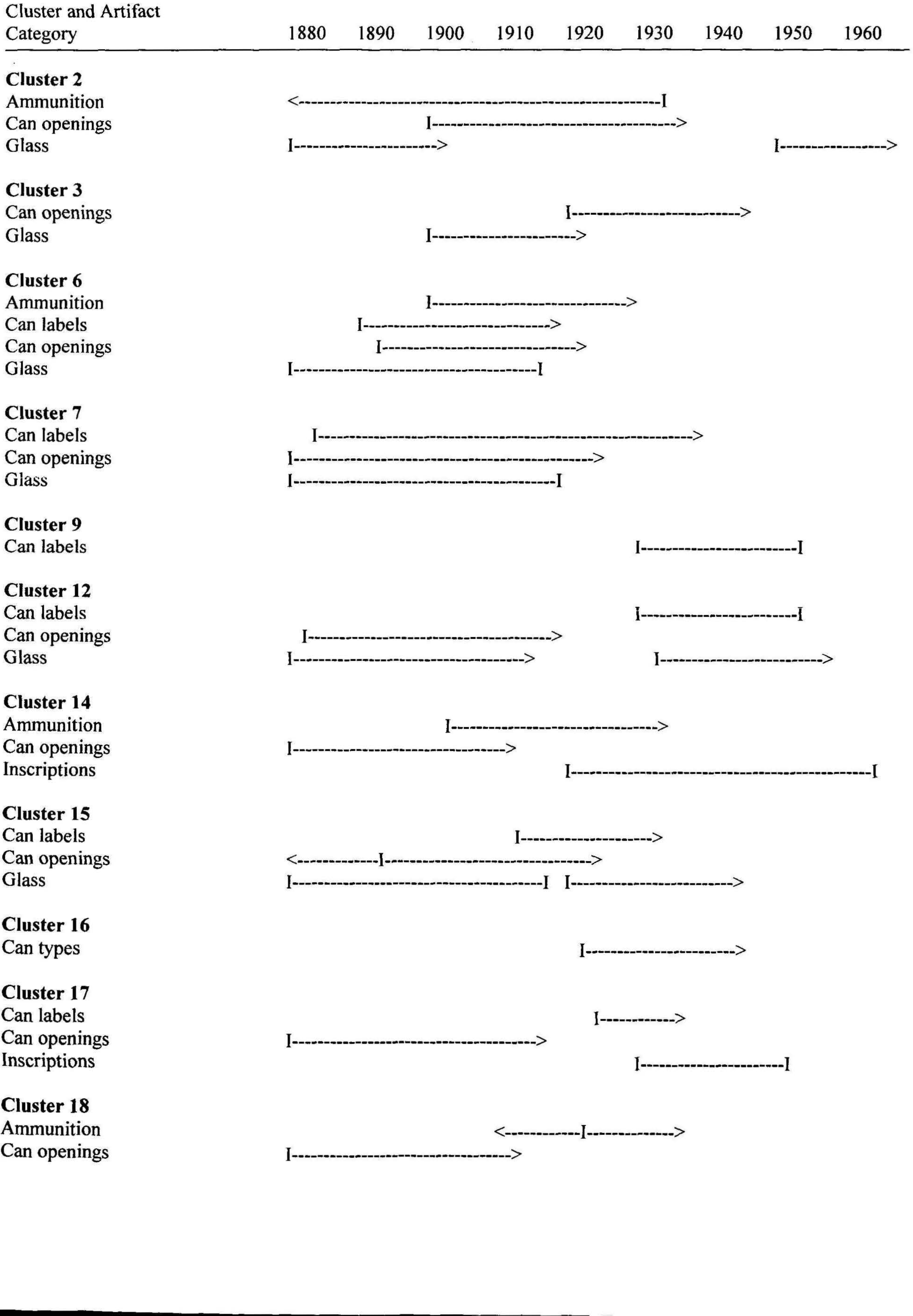
Appendix 3 (Continued).

Can Size (inches)	Number	Identifiable Contents	LA Number
5 3/4 x 5	1	1 Karo syrup	77839
6 x 1 1/4	1	1 fish	70905
6 x 2 3/4	1		
6 x 3	1		
6 x 4	1	1 nonedible oil	70907
6 x 5	1	1 lard	70980
6 x 5 1/4	1		
6 x 5 7/8	25		
6 1/4 x 1 1/4 x 3/4	1		
6 1/4 x 3 1/2	2		
6 1/4 x 4 1/2	1		
6 1/4 x 5 1/4	1		
6 1/4 x 5 1/2	4	3 lard	50909
		1 lard	60467
6 1/4 x 6	5	1 lard	60467
		1 prob. lard	60512
6 3/8 x 5 1/4	1	1 lard	84115
6 1/2 x 4 1/4	1		
6 1/2 x 6	5	1 prob. lard	70940
6 1/2 x 1 3/4	1	1 metal polish	65725
6 3/4 x 1 1/4	1	1 fish	70907
6 3/4 x 2 1/2	1		
6 3/4 x 3 1/4	4	4 baking powder	50949
6 3/4 x 4 1/4 x 1 1/4	1		
6 3/4 x 5	1		
6 3/4 x 5 1/2	1	1 prob. lard	71052
6 7/8 x 5 3/4	46		
7 x 3	2		
7 x 3 3/4 x 2 1/2	1		
7 x 4 1/4	3	1 Dole Pinju	70822
7 x 4 1/2	1		
7 x 6	1		
7 x 6 1/4	2		
7 x 6 3/4	1		
7 (est) x 7 1/2	1	1 paint	84092
7 1/4 x 4 x 2 1/4	1	1 Mazola oil	77715
7 1/4 x 4	2	2 baking powder	50909
7 1/2 x 2 1/2	1		
7 1/2 x 4 1/4	2	2 baking powder	70940
7 1/2 x 6 1/4	1		
7 1/2 x 7 1/2	1		
7 3/4 x 6 3/4	1	1 poss. paint can	50975
7 3/4 x 7	1		
7 3/4 x 7 1/4	1		
8 x 5	1		
8 x 6 1/2	1	1 antifreeze	84140
8 1/4 x 5	1		
8 1/4 x 6 1/4	4	2 lard	50909
		1 lard	50949
8 1/4 x 7 1/2	4	1 "Little Chief" (edible oil)	60512
8 1/2 x 2 1/4	1		
8 1/2 x 3 7/8	1		
9 x 1/2	1		
9 x 5 1/2	1		
9 1/2 x 6 1/2	1	1 Prestone antifreeze	77728
9 1/2 x 6 1/2 x 4 1/2	1		

Appendix 3 (Continued).

Can Size (inches)	Number	Identifiable Contents	LA Number
11 1/2 x 4 1/2	1	Possibly not a can	
15 3/4 x 5	1	1 coffee, split open	

Appendix 4: Date Ranges for Sheepherding/Ranching Clusters.



Appendix 5: Site Components and Isolated Occurrences Related to National Park Service Activities, Frijoles Canyon.

LA 82 (Tyuonyi). Historic Anglo; site excavation/park management.
The historic component at this site consists of an old roadbed, a berm around the roomblock, and a brass cap measuring station. Dating potential: No historic artifacts, but good quantity of documentation from written sources on the excavations and stabilization work.

LA 50972. Historic Anglo; check dams.
Site form, p. 17: "[Historic] component consists of NPS water diversion features put in place to mitigate flooding of the park housing area immediately below Group M. These features have impacted refuse scatter of this site. Numerous cut logs, wire, cans (recent) and other park refuse scatter over lower portion of 50972." Dating potential: no form was filled out for historic refuse. (Very likely, this was part of the CCC project.)

LA 77715. Historic Anglo; ranger station.
Site was apparently eliminated: site form, p. 1, indicates "1935 map of headquarters area shows ranger station, road, garage and unknown building," but p. 3 says, "The CCC apparently did a good job dismantling the buildings at this site--very little evidence remains to define the structures. The rubble scatters may or may not be at the actual locations of the structures; they do not correspond with the structure locations on the 1935 map, and the photographs do not help with any definite locations."

Presence of porcelain with flower patterns indicates domestic context of structures. Dating potential: 51 cans, including 32 labeled as milk cans; one can 3 1/2 x 3 1/2 x 4 in. with label "Lipton Tea, Coffee and Cocoa Plantation Ceylon" (Duran and McKeown [1980:1153] have one "Lipton Tea Planter Ceylon from a Navajo site which dates in two discontinuous occupations between 1915 and 1945"; Lipton dates from 1891+, according to Brand Names Foundation 1947, but Vogler, Gilpin, and Anderson [1983:1034] report that Lipton stopped producing coffee and cocoa in 1935); one 2 1/4 x 4 x 7 1/4-in. can with label, corn goddess and "One Quart/Mazola Reg. U.S. Pat. Off./A Pure Salad and Cooking Oil/Corn Product Refining Co./Genl Office New York USA." Glass: 18 pieces, including 2 pieces of purple glass (this purple glass probably contains manganese, which would place manufacture between 1880 and 1925 [Berge 1980:77]). Remaining glass is clear (1930+). Some of the glass has manufacturers' codes; one piece has "Premier" on neck.

LA 77721. Historic Anglo; trail.
This is the old Ruins Trail, now partially paved over by the current trail. Dating potential: comparison of old maps indicates this is probably CCC-era construction. No historic artifacts present.

LA 77724. Historic Anglo; other/park management.
Site form, p. 3: "This rubble may be the remains of stone excavated from Tyuonyi and buried in an old drainage. This was done possibly in the 1950s to get rid of the rock around Tyuonyi and to fill in the old drainage. Stones were then dug up to line the trail when it was paved." Source of information recorded on site form: Manuel DeVargas, retired NPS maintenance employee, 1987 or 1988. No historic artifacts recorded.

LA 77727. Historic Anglo; historic structure.
Structure of cinder/cement blocks; may be associated with CCC waterworks, though it does not appear on CCC 1935 topographic map. Located on Frijoles Canyon bottom.

Appendix 5 (Continued).

LA 77729. Historic Anglo; historic structure.
Site form, p. 4: "The visible part of the structure measures 12 x 14 ft. The only 'artifact' on the site is a piece of corrugated metal on west side of structure. . . . There is not enough masonry here to indicate stone walls so presumably these rocks are the foundations to a wooden superstructure."

LA 77730. Historic Anglo; check dams.
There is very little to this site; the site form, p. 3, says, "This series of check dams is located in an arroyo bottom which drains into Frijoles Creek. We believe they are CCC constructions which were built for erosion control. We have three definite check dams and 2 possible check dams." No historic artifacts recorded.

LA 77731. Historic Anglo; trail/park management.
CCC trail, now disused and/or paved over by current NPS trail.

LA 84090. Historic Anglo; other/NPS management and inscriptions.
One wall, probably built by NPS; one check dam; several historic inscriptions. In Room 48: 1938 EW; Will C. Wolf 1921; WCK 47; Allan Rogers 1936 (appears twice); RVS RVHS 1930; Tony Martinez 2/6/40; RU.V.E.O..1949; Emory Hurt Ed[i]th Hurt 1921; Dan Valje, 1906 (written above the name) 1898 (below); Richard 1958. In Room 8: June 1949.

Dating potential: No historic artifacts noted, but see dates in inscriptions. Note that room 48 does not seem especially large; it is in a second story and may be one in which an access ladder was placed.

LA 84146. Historic Anglo; NPS management.
Cavate pueblo has been affected by maintenance activities including construction of pipelines and check dams. Various kinds of trash were noted but no historic artifact form completed. Two inscriptions with initials noted.

LA 84148. Historic Anglo; historic trash.
Appears to represent a single dumping event. Located below road to White Rock housing. Dating potential: 63 cans; 46 appear to be all of the same variety, and an unspecified number have the letters "H" and "L5" near side seam and say "Net content 12 Fl. Oz." In addition, 3 of these 46 cans have labels that appear to read "ACIME BEER" or "ACME BEER" (drawing given). One can has "E5" and "8E" next to side seam. One can has "Norway/Norwege" encircling a BP in a circle. Glass: four pieces clear glass recovered (1930+); one has a pitchfork-like symbol followed by "GLA" in quotations.

IO 245. Historic unknown; trail.
Trail "may have been a prehistoric trail at one time but there is no evidence of this"; now obliterated by historic use.

IO 769. Historic Anglo; water system features.
Cement slab with trapdoor and steel pipe vent; opposite side of the creek has scatter of cement chunks.

IO 772. Historic Anglo; cement chunk scatter.
Scatter of broken-up concrete blocks or chunks. Location is the same as the "hotel-utility" area on the 1935 map, but it is unclear whether this is the remains of a structure or a dump of materials removed from elsewhere.

Appendix 5 (Continued).

IO 773. Historic Anglo; flood/erosion control structure.
Two stone alignment/retaining walls of cobbles, boulders, and cement chunks, built along south side of Frijoles Creek. Features appear to have been constructed for erosion or flood control.

IO 774. Historic Anglo; check dam.
One check dam and one possible check dam.

IO 775. Historic Anglo; benchmark.
USGS brass survey marker: USDI T-9 6131.78 BM NPS AC.

IO 776. Historic Anglo; check dam.
Check dam made of rhyolite and tuff cobbles.

IO 898. Historic Anglo; barrel and pipe.
Oil drum (55 1/2 gallons) with galvanized steel pipe lying adjacent.

Appendix 6: Sites Representing Road Construction and Trash Dumping in the Tsankawi Area.

LA 65655. Historic Anglo; historic trash.
This site appears to have been a dumping ground; one of the four trash piles noted contained "a high diversity of material consisting of vitreous porcelain china, broken machine parts, toilet ceramics etc. . . . in addition to the metal and glass." The only indication of habitation is one trash pile that contains fire-cracked rock, though it is unclear whether the trash was burnt or not; there is also a linear arrangement of rock that has timbers at one end. The site is immediately adjacent to the monument boundary fence and an abandoned road grade.

Dating potential, metal: Historic refuse scatter 1 has 13 cans, most with dimensions, rusted but mostly intact. Datable attributes suggest 1935 to the present because of beer cans opened with church keys. Historic refuse scatter 2 has two "Acme" beer cans, one "Pabst Blue Ribbon," one "Schlitz," and one can described as a Spam can. One wire 3/16 in. with "5 Oxweld No. 25 M. Bronze Patented." Historic refuse scatter 3 has 23 cans, most of which appear to be beer cans; three cans labeled "Coors," one can labeled "Johnsons Furniture Wax." Again, datable attributes appear to be 1935–1962. Historic refuse scatter 4 has 11 cans; most appear to be beer cans. Six of these beer cans have bullet holes.

Glass: Historic refuse scatter 1 has 95 pieces of glass; 22 are emerald green and show "...posit*No Return"; one is black/dark olive green (possibly 1815–1885, according to Ward, Abbink, and Stein 1977); one is amber; 71 are aqua (though of these, 64 are noted as pieces from two bottles resembling modern soft drink bottles, and one is a drinking glass).

LA 65658. Historic unknown; camp.
Trash deposited on this prehistoric site is late (post-1930s) and concentrated on the outside of the cavates, not in them. Dating potential: eight cans, with dimensions, including one sardine can that reads "Norway."

LA 65702. Historic unknown; camp.
Camp based on presence of two hearths and one rock alignment of unknown source. Dating potential: one tin can lid with a drop of solder was found, but not in proximity to the hearths.

LA 65710. Historic unknown; camp.
Camp based on presence of hearth; possible two-track road is mentioned in site form as well. Site is near Duchess Castle. Dating potential: 7 cans analyzed; 12 pieces of purple glass from what appears to be one bottle (this purple glass probably contains manganese, which would date it to 1880–1925 [Berge 1980:77]). Rubbing of glass is unclear, possibly "WE.O."

LA 65725. Historic unknown; historic trash.
Minor features: two rock piles. Site form, p. 5: "[There] appears to [be] a machine mount, as there are a few pieces of wood and motor related cans around it." Dating potential: 7 cans; 3 are the same size (4 x 5 1/2 in.) and one has logo "Mobil Oil Product of A Sucony Vacuum Oil Co" (not clear from site form) with flying horse logo and "SAE 30." Another of these oil cans has "Canco" on the bottom; another has top lid "SAE 10"; and one rectangular can has "International Metal Polish" with instructions for use in Spanish. In addition, there is one length of wire with dimensions. Glass: 10 pieces of amber glass.

LA 65747. Historic unknown; road.
Road evident by car parts, asphalt paving, oil cans. Dating potential: 18 cans, all with dimensions. Some are oil cans; one can (2 3/4 x 4 3/4 in.) has "Mission/Dextruse Enriched/Makes Thirst a Pleasure." Glass: three pieces, all aqua. Dating may also be possible by comparing with Frijoles Canyon maps.

Appendix 6 (Continued).

LA 70905. Historic unknown; road
Site form, p. 3, indicates that the road probably "connected up with and was the same dirt road as that at site 70909. Scattered isolated cans were site 70907, historic trash dump, [which] is presumably associated with use of the road." Dating potential: 9 cans, of which 7 are oil cans (4 x 5 1/2 in.). Six of these read "Gulfpride: The World's Finest Motor Oil/ HD [High Detergency]/ Headquarters in Gulf Building Pittsburgh PA"; the seventh reads "Texaco Motors." One oil filter canister and one can labeled as fish. Glass: 54 pieces; 37 clear (1930+), 1 aqua (1880–1910), 13 brown, 2 emerald green.

LA 70907. Historic unknown; historic trash.
Site form, p. 3: "About 30 m from old Road (LA 70905), other isolated scatter trash noted in area."

Metal: 55 pieces; most of these are cans with dimensions and identification of probable contents. One can has "Folger's Coffee" (dates to 1850+ [Brand Names Foundation 1947]); one has "Standard Oil of California Zenolene Motor Oil Can Co." on bottom; one has "Hormel" label; one has "Brasil Especcionado / 7 /GLF" (drawing made). One can had been made into a bucket through the addition of a handle.

Glass: 58 pieces. One is marked "...erages...ntents 12 fluid ozs"; one marked "...ey D.../...yn Wells Española/ GR /Dair(y)"; another has a logo on base: "9 [Diamond pattern] 3/ 3 / Duraglas /GB2130." Another is marked "Contents 1 pt 12 Fl Oz. Canada Dry Ginger Ale, Inc., New York, NY," and on its base is a series of symbols.

LA 70968. Historic unknown; historic trash.
Dating potential: 18 cans, most with dimensions; 1 piece purple glass. (This glass probably contains manganese, which would place manufacture between 1880 and 1925 [Berge 1980:77]).

IO 462. Historic Anglo; historic trash.
Historic trash, near historic road associated with Duchess Castle. Apparently 38 cans were found, but only three were analyzed with dimensions since the rest were post-1960.

IO 463. Historic unknown; unknown structure.
Unknown enclosure 5 x 10 m. "Among the historic trash is a double pointed anchor nail, one piece of glass, and a can. Historic road associated with Duchess Castle passes right next to structure."

IO 539. Historic Anglo; unidentified rock pile.
Unidentified rock pile with associated wood, wire, "and other historic trash such as beverage and oil cans and bottle glass fragments. . . . Artifacts indicate a date of 1935–1960."

Appendix 7: Special Use Clusters.

Special-Use Cluster 1 (Bedrock Pit)

LA 84067. Historic Pueblo; bedrock pit.
Dating potential: one dendro sample taken. No historic artifacts found.

LA 84007. Historic Pueblo; bedrock pit/eagle trap.
Site form, p. 3, describes the bedrock pit as being a natural crack walled up with stones.

LA 84007. Historic unknown; cairn.
Site form, p. 4, suggests: "If the eagle trap is historic, post/cairn may have been used to hang bait to attract eagle to area. May also have been some type of cairn marker unrelated to eagle trap. Is very prominent location above Alamo, possibly marking an access route down into the canyon."

Special Use Cluster 2 (Linear Boundary Escobas Mesa)

IO 760. Historic Anglo; brass cap.
USGS survey marker 1934, marked RVG 2M PL.

IO 761. Historic Anglo; sign.
Wood frame with fragment of cloth sign.

IO 763. Historic Anglo; sign remains.
Wood frame, similar in type to IO 761, but without cloth remains.

IO 766. Historic Anglo; brass cap and sign.
USGS survey marker 1934, marked BNM/BVG AP. Adjacent to marker is wood frame, similar to sign frames recorded as IO 761 and 763.

IO 767. Historic Anglo; barbed-wire fencing.
Barbed-wire fencing, approximately 45 m long. Wire is double wire twisted with single strand wrapped around twice.

Rothman (1988) noted that when the CCC camp was established in 1933, one of its projects was to put up fencing to protect the monument from cattle that wandered over from the nearby Ramon Vigil grant. This collection of IOs forms a linear arrangement 1.2 km long that roughly parallels the northern edge of Frijoles Canyon and represents one of the former boundaries of the monument. This boundary was extended in 1961 when Frijoles Mesa was transferred to the National Park Service (Rothman 1988:159).

Special Use Cluster 3 (Telephone-Telegraph Line)

LA 77738. Historic unknown; historic trash.
Ceramic insulator located 10 m east of site.

Appendix 7 (Continued).

LA 77825. Historic; camp.
No habitation structure in vicinity. Site form, p. 4, notes: "This component is made up of what appear to be the remains of a phone (?) or some electrical gadget, a few cans, a door or box lid, and two logs that look to be placed. C. Lange [in 1959] mentions a telephone in the report for 3825." (This is probably the basis for site dating of pre-1959; note that this site is quite close to 3825 and may be associated with it).

Dating potential: 45 cans, but only some have complete dimensions. Phone equipment: on power switch there is an R in a circle. On inside of phone lid is "Polic[e?] Elec..."; on outside of phone lid: "...A.LE....SE.E.O/...OBOUNE.....I.../...12...."

LA 77858. Historic Anglo; other/telephone line.
Sited near an Anasazi small structure. Site form, p. 5, notes that this is related to site 77825, "also part of telephone line." No historic artifacts found other than telephone parts.

IO 739. Historic unknown; possible wooden spool.
Cable spool end, 28 1/4 x 28 x 12 in., associated with an insulator in a tree.

IO 866. Historic unknown; rock pile.
Historic unknown rock pile that "may be related to the old telephone line Lange refers to and which was recorded with 77825."

Special Use Cluster 4: Trail Segments

LA 50911. Historic Anglo; trail.
"Trail segment 40-01 definitely used historically (NPS cairns along it), and also prehistorically; it links with 77762 and 50933. 40 cm wide path in dirt running through site."

LA 50933. Historic Anglo; trail.
"NPS cairns on 1953 map. ... Trail links with LA 77762; extends length of mesa."

LA 77762. Historic unknown; trail.
Trail with both prehistoric and historic use.

LA 77764. Unknown; rockshelter.
Rockshelter has two upright slabs and an associated upright rock; could be a mealing bin or "weird cairn," culture prehistoric or historic.

IO 822. Historic unknown; isolated cowbell.
"Old cowbell tied to an exposed juniper root, dangling about 10 cm above the ground by a length of stainless steel chain."

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