Pueblo Population Movements, Abandonment and Settlement Change in Sixteenth and Seventeenth Century New Mexico

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ABSTRACT

Spanish colonization of the northern Southwest in the seventeenth century coincided with extensive abandonment of large Pueblo villages. This period of abandonment has been conventionally understood as a consequence of population decline. An examination of archaeological settlement patterns in two areas of the Rio Grande region of New Mexico, the Jemez Plateau and the Rio Abajo, during the period A.D. 1515–1700 reveals occupation at many more sites than those identified in historic documents. The patterns of settlement indicate the maintenance of long-standing mobility practices on the Jemez Plateau. In the Rio Abajo, there are significant population shifts as a consequence of movement to communities outside of the area, and from large to small settlements. These settlement changes during the first centuries of colonial rule demonstrate the use of established Pueblo settlement and mobility practices to respond to the new challenges of Spanish domination. They also indicate that abandonment during the early historic era cannot be automatically equated with population decline.

RESUMEN

La colonización hispánica de la parte norte del sudoeste en el siglo diecisiete coincidió con el abandono masivo de grandes poblados. Convencionalmente, el periodo de abandono ha sido entendido como consecuencia de un descenso en la población. Un examen de los patrones arqueológicos de asentamiento en dos áreas de la región del Río Grande en Nuevo México, la Meseta Jemez y el Río Abajo durante el periodo que va del año 1515 al año 1700 d. C. revela que hubo ocupaciones en muchos más sitios que aquellos que hasta ahora han sido identificados en documentos históricos. Estos patrones de asentamiento indican un mantenimiento de prácticas antiguas de movilidad en la Meseta Jemez. En el Río Abajo hay cambios significativos de población como consecuencia del desplazamiento

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a comunidades fuera del área, y de asentamientos grandes a asentamientos pequeños. Estos cambios de asentamiento durante los primeros siglos de la colonia demuestran el recurso del establecimiento en poblados y de las prácticas de movilidad para responder a los nuevos retos del dominio español. Asimismo, indican que el abandono durante la era histórica temprana no puede ser automáticamente ligada con un descenso de población.

During the first two centuries of Spanish exploration and colonization in the northern Southwest, more than three-quarters of the villages occupied by Pueblo peoples in the Rio Grande drainage of northern and central New Mexico were abandoned. Almost universally, abandonment during this period has been understood as a consequence of population decline, driven by the forces of mortality that the Spanish introduced into the Pueblo world. Abandonment is a theme that reoccurs throughout the settlement history of ancestral and early modern Pueblo peoples. The notion of mortality-driven population decline, however, is virtually never considered when episodes of abandonment prior to the arrival of the Spanish are evaluated, either on a local or a regional scale. Instead, abandonment is conceived as an outcome of the use of mobility strategies by Pueblo peoples responding to changes in social and environmental conditions. It is understood as either a shift in settlement scale, as populations move from smaller- to larger-sized communities (or vice-versa), or as a strategic relocation from one locality or region to another. Despite the central role they play in understanding prehistoric abandonment, concepts of mobility have been little considered in relationship to community abandonment during the first two centuries of Spanish presence in the Pueblo world.

In this paper, I explore the use of mobility by early modern Pueblo peoples as a strategy for responding to the changing conditions brought about by Spanish entry into and occupation of New Mexico during the sixteenth and seventeenth centuries. I examine mobility practices in two areas of northern and central New Mexico, the Jemez Plateau and the Rio Abajo (Figure 1). The two regions differ in environment, settlement, and farming practices. There are also marked contrasts in how the Pueblo peoples of the Jemez and the Rio Abajo areas shifted their settlement in response to the Spanish conquest of their respective homelands. What these two areas had in common, however, was the use of long-term indigenous strategies of settlement pattern change in reaction to the conditions of the early historic era. Definition of these mobility strategies, moreover, allows for the recognition that mortality was not the single cause of community and regional abandonment during this era.

There are compelling reasons why most scholars have looked first to mortality-driven population decline when seeking to understand the abandonment by Pueblo peoples of settlements and regions during the sixteenth and sev-

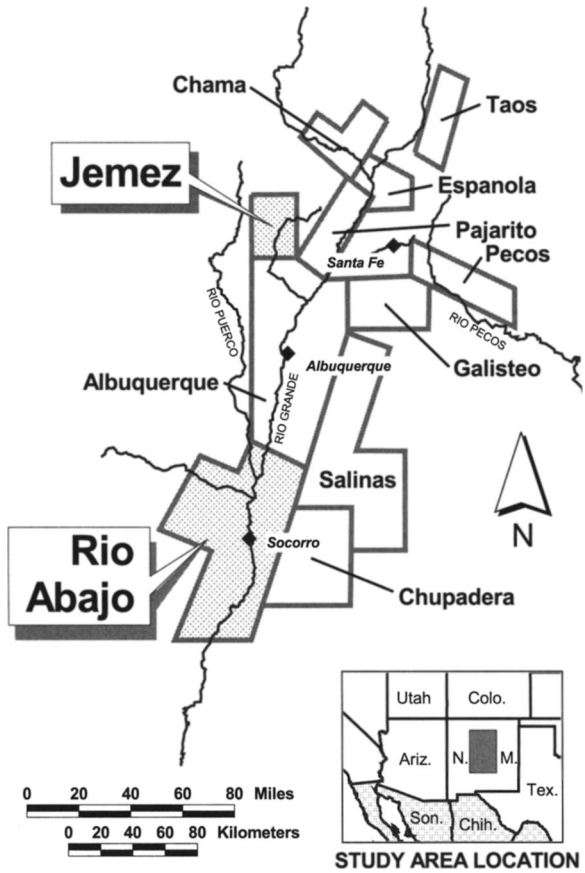

Figure 1. Major areas occupied by Pueblo peoples in the northern and central Rio Grande region, A.D. 1515 to 1700, relative to rivers and modern towns. The two study areas, the Jemez Plateau and the Rio Abajo, are highlighted.

enteenth centuries. Through exploration and colonization the Spaniards brought biological, economic and social changes that had the potential to dramatically increase mortality within Pueblo communities. Foremost among these were Old World infectious diseases, to which Pueblo peoples lacked prior exposure, leaving all members of communities vulnerable to both morbidity and mortality (Dobyns 1983, 1990; Lycett 1995; Ramenofsky 1996; Upham 1986). The Spaniards also introduced new weapons of warfare, including the horse, which transformed the nature of conflict between the Pueblos and their Athabaskan neighbors (John 1975; Schroeder 1979a). The appropriation of labor and foodstuffs from the Pueblos also characterized the first two centuries

of interaction with the Spanish (Barrett 2002; Knaut 1995). Together, the forces of disease, warfare, forced labor, and food shortages formed a potent threat to the viability of Pueblo communities and populations.

There is, however, a strong imperative that mobility should also be considered alongside mortality when evaluating the processes of abandonment among the Pueblos during the sixteenth and seventeenth centuries. Population movement is a central demographic concept, equal to birth and death in providing an understanding of how populations change in composition and size. Mobility is relevant to abandonment and population change during the early historic era for two reasons. The first is the importance of mobility strategies to Pueblo farmers in responding to changing environmental and social conditions (Cameron 1995; Duff 2002; Gilman 1997; Lekson 1990; Nelson and Anyon 1996; Nelson and Schachner 2002; Preucel 1990; Rocek 1996; Varien 1999). Whereas the advent of farming in the Southwest brought along with it aspects of settled life and the establishment of super-annual settlements, movement on a variety of different spatial and temporal scales was central to the economic well-being of Pueblo peoples through the maintenance of subsistence farming practices. Given the importance of mobility strategies prior to the arrival of the Spanish, we should also expect mobility to be an important component of the cultural changes that took place during and after Spanish conquest (Palkovich 1996; Schroeder 1979a).

The second reason relates to how changes in population size in the early historic era have been measured, using both historical and archaeological sources. Demographers generally characterize population movement as migration, considered the movement of peoples in and out of a region of demographic consideration (Pollard et. al. 1990). This limited view of population movement rests on the assumption that the information utilized to quantify a population within a region of interest (such as a census) is sufficiently representative to accurately evaluate whether the changes observed in population are the consequence of migration or changes in rates of births or deaths. The limited set of sources that have been employed to examine Pueblo population changes during the early historic era are clearly insufficient when considered against this standard. The sources that have typically been employed are occupations at large village sites, as indicated by historical reference or archaeological evidence (for examples, see Barrett 2002; Lycett 1995; Palkovich 1985; Schroeder 1992). This information is limited in both scope and scale. The historic evidence is limited by the ability of the Spanish to observe Pueblo populations; the movement of Pueblo peoples to areas beyond Spanish view cannot be evaluated from these sources. The archaeological evidence is limited by a focus on only large settlements. The abandonment of large settlements in a region could be an indicator of regional abandonment, either as a consequence of mortality or migration; it may also be a consequence of a shift in settlement scale, from large settlements

to small ones (Nelson 1999). Thus, consideration of the full range of Pueblo mobility strategies, not just migration, is not only a desired condition, but a necessity for evaluating the nature of Pueblo population change during the early historic period.

MOBILITY STRATEGIES OF PUEBLO FARMERS

Ancestral and early modern Pueblo peoples engaged in a variety of forms of mobility to address the challenges of making a living as farmers in a part of the world where the distribution of resources is both limited and irregular and where social and environmental changes routinely altered the viability of agriculture. Several concepts have been formulated to describe mobility by Pueblo peoples on a variety of scales. Unlike for foragers, no comprehensive framework has been constructed for understanding all aspects of mobility among subsistence agriculturalists. This is not surprising, considering the greater economic complexity of subsistence agriculture compared to foraging. In the case of Pueblo peoples, for example, the subsistence economy consisted not only of farming, but also extensive hunting and gathering, creating additional layers of economic behavior that must be considered when describing mobility practices. Rather, the concepts that have been created to understand Pueblo mobility have typically focused on the economics of farming and its social correlates. Considered here are three mobility concepts relevant to Pueblo economic behavior during the early historic era: seasonal circulation, short-term sedentism, and migration.

Seasonal circulation has been expressed several ways within the settlement history of Pueblo peoples. In later, more aggregated ancestral and early modern Pueblo communities, circulation took place between a winter-occupied village community and formal and informal summer residences constructed and occupied specifically for agricultural activities, likely driven by the economic and social demands of land scarcity relative to aggregated settlement (Adams 2001; Kohler 1992; Orcutt 1993; Preucel 1990; Sebastian 1983). Low frequency, superannual mobility, or "short-term sedentism," constitutes the movement of households or multi-household communities from one residence to another at a scale greater than a single year. It represents the abandonment and founding of small settlements, typically on the scale of a generation or two, as a normal response to the depletion of natural resources, climatic variation, shifts in social boundaries, and evolving rules of land tenure (Nelson and Anyon 1996; Kohler and Matthews 1988; Varien 1999). Migration is typically characterized as the movement from one region to another, occurring across distances of a magnitude greater than short-term sedentism (Clark 2001). Migration is typically associated with the terminal abandonment of regions, and appears related to changes such as large-scale climatic impacts (Cordell 1996; Van West and Dean 2000) or the catastrophic failure of social systems to maintain community coherence (Adams

1991; Bradley 1996). Unlike short-term sedentism, community identity as reflected in settlement pattern and ceramic tradition was often lost during the migration process as individual households moved to existing and newly forming communities in distant areas (Cameron 1995; Duff 2002; Kohler 1993; Mills 1998; but see Lekson et al. 2002; Clark 2001).

The development of mobility concepts such as seasonal circulation, short-term sedentism, and migration has taken place against the long-held notion that Southwestern farmers were primarily sedentary, inhabiting village sites for hundreds of years at a time, particularly during later prehistory and during the historic period. Lekson (1990) has termed this notion "deep sedentism," an idea with its origins in the efforts in the early twentieth century by Pueblo peoples and their allies to legitimize Pueblo land claims, and by the general anthropological equation of population aggregation into large settlements with sedentism. Instead, Lekson argued that long-term sedentism only came about with the issuance of land grants to the Pueblos by the Spanish following the Pueblo Revolt of A.D. 1680. Even this limited acceptance of long-term sedentism, however, obfuscates the mobility which has taken place since the Pueblo Revolt, such as seasonal circulation (Dublin 1998; Preucel 1990:37–52) and migration (Herr and Clark 1997).

PUEBLO SETTLEMENT DURING THE EARLY HISTORIC ERA: THE JEMEZ PLATEAU AND RIO ABAJO

The notion of shifting Pueblo settlement patterns during the early historic era is not new. As early as the 1930s, Mera (1940) observed substantial shifts in population during the sixteenth and seventeenth centuries, including the abandonment of large settlements, the founding of new small settlements, the reoccupation of long-abandoned villages, and the apparent widespread movement of peoples. A few more recent studies have taken a regional approach to examining population change during the historic period (Haas and Creamer 1992; Lycett 1995; Ramenofsky and Feathers 2002). All, however, have the issue of population decline at their center, and focus strictly on the abandonment of settlements and regions, with mortality as the assumed cause.

The two areas examined here, the Jemez Plateau and Rio Abajo, are located in the northern and central Rio Grande region of New Mexico. The Jemez Plateau and the Rio Abajo are two of the more ideal areas for examining early historic Pueblo mobility. Although our knowledge of early historic settlement in both of these areas is imperfect, enough is known from both Spanish records and archaeological settlement patterns to observe the relationship between Spanish entry and colonization and Pueblo mobility practices.

Located approximately 70 km north-northwest of the city of Albuquerque, in the southwestern quadrant of the Jemez Mountains, the Jemez Plateau is an

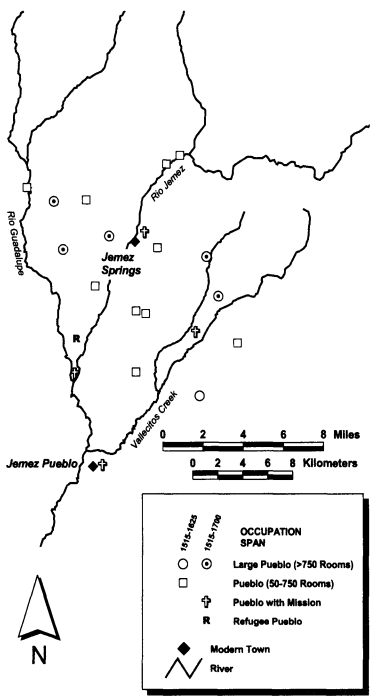

Figure 2. The location of village communities on the Jemez Plateau, A.D. 1515–1700.

upland area composed of long, narrow mesas separated by deep canyons. With little suitable farmland available in canyon-bottoms, most early modern Pueblo settlements, particularly during the sixteenth and seventeenth centuries, were located on the mesa tops. In the Jemez between A.D. 1515 and 1625, large site settlement patterns were similar to other portions of the northern and central Rio Grande, with the record dominated by very large village communities (Cordell 1989; Wendorf and Reed 1955). Occupations at 21 village communities of more than 50 rooms in size are indicated by ceramics; most of these communities were quite large, including seven distinguished by multiple plazas, room counts greater than 750, and the presence of a great kiva (Elliott 1982, 1991; Kulisheck 2001a) (see Figure 2). To maintain these large communities in a region lacking substantial floodplains, seasonal circulation was widely practiced. In addition to the large pueblos, the archaeological record of the area features several thousand small, one- to four-room masonry structures identified as field houses (Crown et. al. 1996). After A.D. 1515, Jemez area farmers intensified their use of field houses (Kulisheck 2001b), in contrast to many other areas of the Southwest, such as Zuni in the west and the Pajarito Plateau to the east, where Pueblo farmers abandoned upland areas to focus on farming floodplains and river bottoms (Kintigh 1985:104; Orcutt 1999).

The Rio Abajo, located approximately 70 km south of Albuquerque in the Rio Grande Valley, lies between the modern town of Bernardo in the north and the Elephant Butte Reservoir to the south. In sharp contrast to the physiography and environment of the Jemez, the area is composed of broad alluvial bottomlands adjacent to the river, flanked by alluvial terraces and fans, and occasional isolated mesas and buttes. In the period between A.D. 1515 and 1625, there is archaeological evidence for occupations in the Rio Abajo at nine villages greater than 50 rooms in size (see Figure 3). Of these, most are much smaller than the large villages of the Jemez and other areas in the northern and central Rio

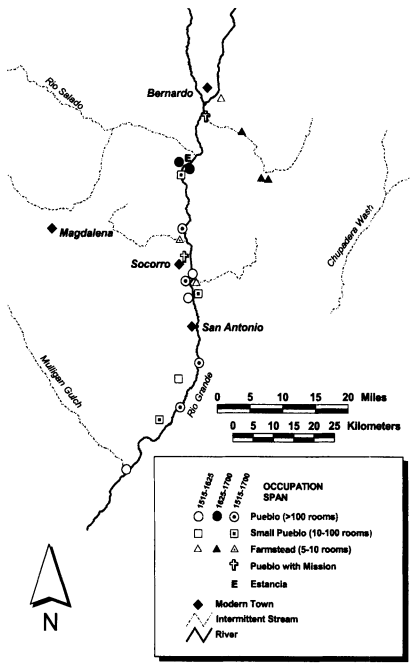

Figure 3. The location of village communities and farmsteads in the Rio Abajo, A.D. 1515–1700.

Grande; in the Rio Abajo, villages range in size from about 100 to 300 rooms (Marshall and Walt 1984; Mera 1940). These statistics regarding Rio Abajo settlement can be somewhat misleading, however, as three sites recorded in Spanish accounts from the A.D. 1600s, Pilabó (Socorro), Senecú and Alamillo, have never been definitively located. All three were places where missions were constructed during the seventeenth century, and given the Spanish predilection for constructing missions at larger settlements, it is assumed that these communities were not small.

In addition to these larger communities, there are a few smaller sites located in the Rio Abajo; similar to field houses, these sites of five to 10 rooms are commonly termed "farmsteads," and are assumed to be larger single household or multi-household seasonal farming structures (Marshall and Walt 1984; Mera 1940). They differ from the field houses of the Jemez only in scale and are assumed to be functionally equivalent; they are distinct from the multi-family farming communities used by the western Pueblos during the historic era (Dublin 1998).

The history of interaction between the Spanish and the Pueblo is remarkably similar in the Jemez and the Rio Abajo. Both areas received only minimal attention from the Coronado expedition of A.D. 1540–1542; both areas were also visited and described by the Rodriguez-Chamuscado party of A.D. 1581–1582 and the Espejo party of A.D. 1583 (Barrett 2002). Neither area, however, was immediately occupied by the Spanish following the establishment of the New Mexico colony in A.D. 1598. The first permanent missions were not established in the two areas until the early A.D. 1620s, despite earlier attempts at conversion (Earls 1985; Kulisheck 2001a). In each area, the founding of the missions went hand-in-hand with an attempt to move their populations into fewer and larger settlements, the process of *congregación*. These efforts were most concerted in the Jemez, where the initial mission efforts were focused on removing the Pueblo farmers of the Jemez from mesa-top villages and resettling them in

Table 1. Historic Population Estimates for the Jemez Plateau and Rio Abajo Areas, A.D. 1540—1680

Date	Reporter	Jemez Plateau		Rio Abajo		Source
		Population Size	# of Villages	Population Size	# of Villages	
1540	Coronado	—	—	—	12?	Hammond and Rey (1940:259)
1541	Barrionuevo	—	7 or 10	—	—	Hammond and Rey (1940:259)
1581	Gallegos	—	15	—	20+	Hammond and Rey (1966:82, 107)
1583	Espejo	30,000	7	12,000	10	Hammond and Rey (1966:219,223–224)
1583	Luxán	—	—		9	Hammond and Rey (1966:173–174)
1598	Oñate	—	11	—	44?	Hammond and Rey (1953:322, 346)
1622	Zarate Salmerón	6566	3	—	—	Millich (1966:26)
1629	Benavides	3000	2	6000	14	Hodge and Lummis (1916:19, 25)
1641–44 or 1656	None listed	1860	1	400	3	Baldwin (1984); Scholes (1929:48, 50, 1944:245)
1660 or 1680	Vetancurt	5000	5 or 1	800+	4	Vetancurt (1961 [1698][4]:98,100)

canyon-bottom mission communities (Kulisheck 2001a). *Congregación* was not a stated policy in the Rio Abajo, but was periodically practiced to cope with both falling population sizes at mission communities and as a method of social control (Schroeder 1979b).

Historic accounts of Pueblo population sizes and community occupations point toward a significant abandonment of large settlements in the Rio Abajo and Jemez after A.D. 1625. Table 1 summarizes the counts of settlements and estimates of population made by Spanish explorers, missionaries and government officials for the Jemez and the Rio Abajo between A.D. 1540 and 1680. These numbers indicate relative stability in occupation in the period between A.D. 1540 and 1625, with significant declines in the numbers of villages occupied in each region between A.D. 1625 and 1680. In the aftermath of the Pueblo Revolt, both regions were abandoned. Both the resettled Rio Abajo and Jemez communities have persisted into the present. Jemez descendants now reside at a community (Walatowa) directly adjacent to the Jemez Plateau, while Rio Abajo descendents live in several communities several hundred kilometers south of the Rio Abajo, in the vicinity of El Paso and Ciudad Juarez.

The pattern of community abandonment observed in historic documents for the Jemez Plateau and Rio Abajo is repeated in accounts related to other areas of the northern and central Rio Grande region and elsewhere in the Pueblo world. Along with descriptions of abandonment and the ever-fewer numbers of communities listed in Spanish documents are accounts of epidemics, warfare and other violence, exploitation, and starvation (Barrett 2002; John 1975; Knaut 1995; Palkovich 1994; Reff 1992; Schroeder 1979a). Of these forces, mortality from disease has emerged as the primary explanation for widespread abandonment. The devastation from introduced Old World infectious diseases historically documented for regions such as Mesoamerica, Central America and western South America, and is apparent from the archaeological record of areas such as the U.S. Southeast, is simply too great to dismiss its effects of on Pueblo populations. There has been some suggestion that Old World diseases were introduced into the Pueblo world with the first Spanish explorers in the early A.D. 1500s (Dobyns 1983, 1990; Upham 1986). However, historic records do not support a sixteenth-century introduction into the northern Southwest (Palkovich 1996). Rather, the effects of disease were most likely felt in the seventeenth century, when sustained contact between the Pueblo world and host reservoirs for diseases in Mexico made possible the transmission of infectious ailments. During this time period, historic accounts support the abandonment of 75 to 80 percent of all communities in the region by A.D. 1700, with an assumed corresponding population decline (Reff 1992). The Rio Abajo was likely affected more severely than other areas of the northern Southwest, as its mild climate likely better sustained infectious maladies such as malaria, and because the area served as the entryway to the Rio Grande

region along the main route connecting the colony to Mexico (Ramenofsky 1996).

Descriptions of mobility as a response to disease, warfare and other events also appear in the documents. On the Jemez Plateau, for example, disease and warfare was to have caused the dispersal of the inhabitants of this region in the early A.D. 1620s with the resettlement of its Pueblo populations coming only with the founding of Spanish mission communities (Hodge and Lummis 1916; Millich 1966). In the Rio Abajo, raiding by Apache groups is reported to have dispersed the populations of many Pueblos; there are reports of many fleeing to the surrounding mountains and to other provinces in response to both Spanish settlement and warfare with other Native American groups (Earls 1985:188-190). Such descriptions, however, are anecdotal. With the emphasis that has been placed on mortality as the primary cause of population decline and community abandonment, the potential for systematic shifts in mobility practices as a response to disease, warfare and other challenges has yet to be assessed.

MOBILITY AND ABANDONMENT

Mobility as a strategy for responding to changing conditions presents itself as systematic shifts in residential settlement by subsistence agriculturalists. The evidence which has been used to assess population change during the early historic era have been primarily Spanish documents, with the archaeological record of large settlements used to corroborate historic accounts (Barrett 2002; Schroeder 1979b). This information base contains only equivocal evidence of population movement, and in the eyes of the Spanish chroniclers, the flight from warfare, forced relocation, and refugeeism which is most often described in historic accounts appeared as anything but systematic. These sources, however, consist of only a fraction of the body of settlement evidence available for the early historic era, limited as it is to only those sites which appear in Spanish documents. As a consequence, it is inadequate for evaluating the forms of mobility which may have been employed by Pueblo peoples during the first two centuries of the Spanish presence in the Rio Grande region and for weighing the relative importance of mortality and mobility as causes of abandonment during the early historic era.

To assess the mobility strategies that may have been employed on the Jemez Plateau and in the Rio Abajo, I have examined the ceramic evidence from the large site records from both regions; this evidence provides occupation dates for these communities and is summarized in Tables 2 and 3. I have also considered what is known of the small site records in both areas and the occurrence of these small sites (primarily field houses and farmsteads) relative to large site occupations. In the Rio Abajo, it is also of value to examine directly adjacent areas. These areas were not documented or occupied by the Spanish during the

Table 2. Large Communities on the Jemez Plateau, A.D. 1515–1700

LA Number	Site Name	Site Type	Number of Rooms	Earlier Occupations (A.D.)	Occupied A.D. 1515–1625	Occupied A.D. 1625–1700
96	Patokwa	Mission	600	–	X	X
123	Unshagi	Pueblo	263	1490–1515	X	–
132/133	Kiatsukwa	Large Pueblo	975	1490–1515	X	X
136	Boletsakwa	Mission?	650	–	X	X
303	Seshukwa	Large Pueblo	1100	1490–1515	X	X
398	–	Pueblo	300	1490–1515	X	–
479	Totaskwinu	Pueblo	200	1490–1515	X	–
481	Amoxiumqua	Large Pueblo	1200	1315–1515	X	X
482	Kwastiyukwa	Large Pueblo	1250	1490–1515	X	X
483	–	Pueblo	250	1450–1515	X	–
484	Stable Mesa	Large Pueblo	1850	1490–1515	X	X
541	Nanishagi	Pueblo	350	1490–1515	X	–
679	Guisewa	Mission	350	1315–1515	X	X
1825	Astialakwa	Refugee	250	–	X	X
5918	–	Pueblo	375	1490–1515	X	–
6680	Walatowa	Mission	Unknown	–	X	X
24788	Wahajhamka	Large Pueblo	750	1490–1515	X	–
24790	–	Pueblo	100	–	X	–
44000	–	Pueblo	150	1490–1515	X	–
44001	–	Pueblo	75	1490–1515	X	–
46340	Kiashita	Pueblo	50	1490–1515	X	–

Note: Site data are from Elliott (1982, 1991), except for: LA 679, from Warren (1979); and LA 6680, from Dodge (1982).

Table 3. Large Communities and Small Sites in the Rio Abajo, A.D. 1515–1700

LA Number	Site Name	Site Type	Number of Rooms	Earlier Occupations (A.D.)	Occupied A.D. 1515–1625	Occupied A.D. 1625–1700
244	Tiffany Pueblo	Small Pueblo	40	1315–1450(m)	X	X
282	Las Huertas	Pueblo	180	1450–1515(m)	X	X
283	El Barro	Pueblo	<100?	1315–1450	X(m)	X
286	Estancia Acomilla	Estancia?	16	–	X	X
287	Cerro Indio	Pueblo	117	1315–1425, 1450–1490(m)	–	X(m)
487	San Pasqual	Pueblo	750	1450–1515	X(m)	X(m)
597	Mulligan Gulch Pueblo	Pueblo	300	1450–1515	X	–
755	Las Cañas	Pueblo	200	1100–1315, 1450–1515	X(m)	–
757	Qualacú	Pueblo	200	1450–1515	X(m)	X(m)
768	Al Lado las Cañas	Farmstead	8	1315–1450(m)	X	–
774	Sevilleta	Mission	165	1315–1450, 1425–1515(m)	X	X
778	San Francisco	Farmstead	8	–	X	–
791	Pilabó (Socorro)	Mission	Unknown	Unknown	X	X
1185	–	Farmstead	Unknown	–	–	X
1190	–	Farmstead	Unknown	–	–	X
2004	Piedras Negras	Pueblo	250	1100–1315	–	X(m)
19266	Nuestra Señora	Small Pueblo	35	–	X	–
20896	Sevilleta Shelter	Rock Shelter	None	–	–	X(m)
31698	Upper las Cañas	Small Pueblo	25	1100–1315(m)	X	X
31717	Pueblo Arena	Small Pueblo	36	–	X	X
31744	Plaza Montoya	Pueblo	200	1450–1515(m)	X	X
31746	Pargas Pueblo	Pueblo	200	1450–1490	X	–
31751	Pueblito Point	Farmstead	8	–	X	X

Note: Site data from Marshall and Walt (1984), Mera (1940), and Site Files, Archaeological Records Management Section, New Mexico Historic Preservation Division, Laboratory of Anthropology, Santa Fe. "(m)" signifies a minor occupation.

sixteenth or seventeenth centuries, and may have served as destinations for shifting populations. At unexcavated sites in both areas, surface ceramic collections provide chronology. Presence of the Glaze E series (dating to AD 1515–1625) indicates occupations primarily prior to Spanish settlement of the region in the AD 1620s, while the presence of the Glaze F series (dating to AD 1625–1700) indicates occupations after the arrival of the missions (Vint 1999; see also Marshall and Walt 1984).

Settlement pattern data from the Jemez Plateau do not support the interpretation that significant abandonment or severe population decline took place here during the sixteenth and seventeenth centuries. Based on surface ceramic evidence, there is an overall decline in the total number of large settlements occupied, from 21 prior to A.D. 1625, to 10 after that date (Figure 2). The number remaining, however, is much greater than reported in Spanish documents. When missions were first established in the Jemez in the early A.D. 1620s, its population was described as congregated into just two communities (Hodge and Lummis 1916). All accounts of the Jemez from the A.D. 1640s to 1680 report the occupation of only one community, the mission of San Diego at Walatowa. All sites identified in historic accounts represent only half of those where post-A.D. 1625 occupations are indicated by archaeological evidence. The remaining sites, of which there is no mention of an occupation during the later part of the seventeenth century, are among the largest inhabited during the sixteenth century. This does not necessarily mean that occupations at these sites were at their maximal extent during the middle to latter portion of the seventeenth century. However, the presence of these sites, in addition the populations resident at the mission communities of the period, indicate the persistence of Jemez settlement beyond what would be inferred from historic documents. Most importantly, it demonstrates that there was significant Pueblo settlement in the Jemez of which the Spanish were not aware, or at least that went undocumented (Kulisheck 2001a).

Likewise, the pattern of seasonal circulation practiced by the Pueblo peoples of the Jemez Plateau does not appear to have been interrupted. Although there have been literally thousands of field house sites recorded on the plateau, in the past little attempt was made to distinguish between different periods of occupation for field houses. Field houses known to date between A.D. 1625 and 1700 are distributed mainly on the lower portions of two mesas, San Juan and Virgin, but others have been identified through excavation at several sites in other portions of the plateau (Acklen and Railey 1999; Elliott 1988; Luebben et al. 1988) and may more accurately reflect their full spatial distribution.

The settlement record of the Rio Abajo shows similar patterns to the Jemez Plateau in the occupation of large sites; however, there are also indications of significant shifts in settlement, in the form of movement on the scale of short-term sedentism and the establishment of new small sites. Like the record of the Jemez Plateau, settlement evidence for the number of seventeenth century occupations

is inconsistent with the numbers reported in Spanish documents. Unlike the Jemez, however, there is no evidence of the abandonment of more than a few communities after A.D. 1625 (Figure 3). Of the nine settlements with greater than 50 rooms, and four settlements with between 10 and 50 rooms, all but four have evidence for an occupation after A.D. 1625. In addition, there is evidence of reoccupation at two larger sites which had been abandoned prior to A.D. 1515. The site frequencies observed in the Rio Abajo settlement data are consistent with the number of villages listed as occupied by Benavides in the late A.D. 1620s. However, they are far greater than those reported during the A.D. 1640s to 1680. Like the Jemez, in these accounts only communities with missions are mentioned: Senecú, Alamillo, Pilabó and Sevilleta (Marshall and Walt 1984:245–257). Again, data are currently not available to assess the size and nature of these post-A.D. 1625 occupations; they do indicate that Spanish documents do not accurately reflect the nature and distribution of the Pueblo settlement in the Rio Abajo.

The settlement records of areas directly adjacent also indicate that during the seventeenth century Pueblo peoples in the Rio Abajo employed several mobility strategies in response to Spanish colonization. The first was the movement on the scale of short-term sedentism out of the Rio Grande Valley itself to large communities in the upland areas to the west, in the vicinity of the modern town of Magdalena (Figure 4). In this area are two large pueblos, Magdalena Pueblo and Bear Mountain Pueblo, which have surface ceramic assemblages that indicate occupations between A.D. 1515 and 1700. Despite the large size of these communities, and their persistence into the latter half of the seventeenth century, they are never referred to in the Spanish documents until after the Pueblo Revolt—and the total abandonment of the area—by de Vargas in A.D. 1692 (Marshall and Walt 1984:256). Marshall and Walt interpret this lack of mention to infer that Spanish domination of the southernmost portion of the Pueblo world was restricted to the Rio Grande Valley proper. They believe the sites to be refugee in nature, settled by those seeking to escape the Spanish occupation of the valley. They observe that "these large pueblos, which were home to approximately one-third of the Colonial [Rio Abajo] population, were no doubt an amalgamation of various valley settlements and may be understood in the context of both evacuation/avoidance and coalition for protection (Marshall and Walt 1984:141)."

The second type of movement involved not only a transfer of populations to large pueblos outside of the Rio Grande Valley, but a shift to occupation in small settlements similar to the farmstead settlements found in the valley itself. This movement is indicated by the appearance of small sites in the upland areas in the northeastern portion of the Rio Abajo and in the Chupadera area to the east after A.D. 1625. The Chupadera is located in the shallow basin of the Chupadera Arroyo, which runs parallel to the Rio Grande approximately 35 km to the east. There is no definitive mention of the area in any Spanish historic docu-

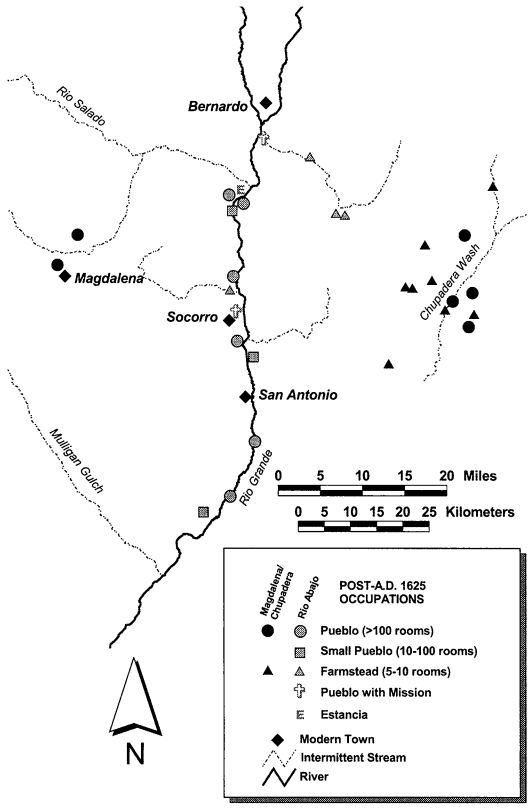

Figure 4. The location of village communities and farmsteads in the Magdalena and Chupadera areas, A.D. 1625–1700, relative to the occupation of the Rio Abajo (in gray).

ments. Based on the presence of surface ceramics, at least seven large pueblos were occupied prior to A.D. 1625. After this date, all but two appear to be abandoned. In their stead are a set of new occupations at small sites of no more than 10 rooms (Kyte 1988; Mera 1940). Mera interpreted the proliferation of these sites as a fundamental shift to a dispersed settlement system during the historic period, in response to Spanish colonization. He wrote:

> the . . . sites not previously occupied [prior to A.D. 1625] are all comparatively small. Taking into consideration not only the size of these but the type of location as well, it appears reasonable to postulate a gradual breaking up of the larger centers with the idea of attracting less attention or perhaps a greater degree of security which might be afforded by more isolated though less advantageous localities [Mera 1940:13].

Like the large site occupations after A.D. 1625 in the Magdalena area, there is no mention of these small site occupations in seventeenth century historic accounts.

DISCUSSION

Both on the Jemez Plateau and in the Rio Abajo, there is poor correlation between archaeological settlement evidence and the historical record which has served as the primary source for previous interpretations of abandonment and population decline. This settlement evidence reveals two patterns which have heretofore been seldom remarked upon (Mera 1940), particularly in the context of population decline. The first is the persistence of some sort of occupation at larger settlements beyond what is indicated in historical records. The second is the prominence of small, seasonally occupied sites in the seventeenth century settlement record. These two patterns manifest themselves somewhat differently in the two different areas, however, and indicate that maintenance and shifts in Pueblo mobility strategies were diverse within the Rio Grande region.

On the Jemez Plateau, evidence of population decline is equivocal. There is a decline in the total number of large villages. The persistence of the largest among them, however, may indicate a concentration of population rather than decline. That the evidence from large settlements does not support dramatic population decline indicates that seasonal circulation as a mobility strategy may have served to ameliorate many of the negative demographic effects introduced by the Spanish. The seasonal rotation between occupation in aggregated and single household residences apparently provided two advantages to the Pueblo farmers of the Jemez. First, dispersion may have acted as a buffer against infectious diseases, by lessening contact between large numbers of individuals during periods of infection, and breaking the chain of disease transmission (McGrath 1991). Within the Southwest historically, it is documented that the Navajo experienced lower rates of morbidity and mortality from Old World infectious diseases than other Native groups because of a dispersed settlement pattern (Shoemaker 1999). While Pueblo peoples of the Jemez would have been very vulnerable to disease episodes during winter months, during much of the year diseases would have spread through the area only with difficulty. Second, seasonal dispersion appears to have allowed many Jemez to escape Spanish awareness altogether. By doing so, they made themselves unavailable for the demands made so often by the Spaniards on the Pueblos for goods and labor; indeed, there are few such demands reported in the documentary history of the Jemez (Scholes 1938). The success of seasonal circulation as a strategy for mitigating the deleterious demographic effects of the Spanish colonial effort are testified to by the lack of substantive change in field house use on the plateau between the sixteenth and the seventeenth centuries (Kulisheck 2001b).

The patterns observable in the settlement data from the Rio Abajo indicate more substantive shifts in mobility strategies from those adopted on the Jemez Plateau. There is limited evidence of seasonal circulation prior to Spanish colonization. Because their populations were concentrated into larger villages

throughout most of the year, the Pueblo communities of the Rio Abajo may have initially felt the effects of disease and labor demands more acutely than their Jemez neighbors to the north; their position on the main artery between Mexico and the Southwest probably increased the likelihood that disease episodes took place (Ramenofsky 1996). While there is no quantitative way to assess the labor demands placed upon the Pueblo of the Rio Abajo, such demands feature prominently in the legal correspondence surviving from the investigation into the actions of Spanish Governor López de Mendizábel in the late 1650s and early 1660s (Knaut 1995:102–117). The Pueblo peoples of the Rio Abajo responded to these demands by engaging in residential movement on the scale of short-term sedentism, both to established village communities outside of Spanish control in the Magdalena area to the west and to small sites both within the Rio Grande Valley and in the Chupadera area to the east.

CONCLUSION

The evidence presented above for the use of long-practiced Pueblo mobility strategies on the Jemez Plateau and in the Rio Abajo during the first two centuries of Spanish presence in the northern Southwest demonstrates the need to incorporate mobility into understandings of population change during the early historic era. Existing residential mobility strategies, such as seasonal circulation, may have been successful at blunting some of the worst demographic effects introduced by the Spanish, while at the same time providing the potential for concealment from both Spanish observation and exploitation. In other instances, residential relocation on the scale of short-term sedentism acted to remove Pueblo peoples from areas of Spanish control and observation. Narrowly, mobility practices in the northern Southwest, including seasonal circulation and short-term sedentism, are strategies for resolving the economic and ecological challenges of subsistence farming in a marginal environment. Yet the Spanish colonization of the Rio Grande region represented both a direct and an indirect challenge to the viability of Pueblo subsistence agricultural practice. The appropriation of foodstuffs and labor directly interfered with the productivity of Pueblo agricultural practice (Earls 1985; Knaut 1995). Disease also disrupted farming as productive members fell ill and were unable to participate in agricultural activities; shrinking populations may have also interfered with the maintenance of collective agricultural work groups (Lycett 1995). Altogether, the challenges that the Spanish occupation of the northern and central Rio Grande region posed to Pueblo agriculture were profound enough that, given the tendency of Pueblo peoples to use mobility, residential movement and the abandonment which accompanies such moves should be fully expected during the seventeenth century.

At the same time, mobility is not a substitute for other explanations of

abandonment during the early historic era, particularly the effects of disease. Our knowledge of the effects of disease are simply too developed to assert, as Schroeder did a generation ago, that "[e]cological factors and intertribal enmities played a far greater role in affecting native population shifts in the Southwest than did the presence of, or pressures from, the Spaniards (Schroeder 1979a:239)." Evidence of the effects of the introduction of Old World infectious diseases in other regions of North America, such as the Southeast, have demonstrated the ability for such diseases to spread among aggregated populations and result in significant population decline. Writes Ramenofsky (1996:177), "the possibilities of disease transmission are simply too great to argue that infectious diseases were not present and did not cause attrition of [Pueblo] peoples prior to 1680." However, both existing and changing mobility strategies among Pueblo peoples must be incorporated into any understanding of the effects of disease in the northern Southwest. In particular, differences in existing mobility practices may explain differences in the persistence of some communities relative to others. Further, shifts in mobility practices and changes in the scale of settlements may be rightly perceived as a response to the threat of disease, in addition to other challenges, such as warfare, forced labor, and the expropriation of surpluses.

Regardless of the weight given to the various possible causes of Pueblo population change during the early historic period, the recognition of mobility as a demographic factor along with mortality demonstrates that abandonment during this period cannot be automatically equated with population decline, which is the current conventional interpretation of Pueblo settlement patterns during the early historic era (Barrett 2002; Ramenofsky 1996; Reff 1992; Haas and Creamer 1992; Upham 1992; but see Palkovich 1996). Recognition of the potential importance of mobility during the historic era suggests a strong need for researchers to bring their approaches to abandonment more in line with those Southwestern archaeologists who examine Pueblo mobility during the time prior to the arrival of the Spanish. Consequently, there is a need to perceive the process of abandonment less as a consequence of crisis, and more as a strategy, consciously undertaken as a response to changing conditions (Cameron 1995; Nelson and Schachner 2002).

NOTES

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