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The Early Pueblo Period in the Northern Southwest

Edited by
Richard H. Wilshusen, Gregson Schachner,
and James R. Allison

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Crucible of Pueblos

The Early Pueblo Period in the Northern Southwest

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The Early Pueblo Period in the Northern Southwest

Edited by

Richard H. Wilshusen, Gregson Schachner, and James R. Allison

Cotsen Institute of Archaeology
University of California, Los Angeles

Dedication

To Dee Ann Suhm Story

One of the first women to earn a Ph.D. from the Anthropology program at the University of California at Los Angeles (1963) and a great mentor to numerous archaeologists.

The Cotsen Institute of Archaeology Press is the publishing unit of the Cotsen Institute of Archaeology at UCLA. The Cotsen Institute is a premier research organization dedicated to the creation, dissemination, and conservation of archaeological knowledge and heritage. It is home to both the Interdepartmental Archaeology Graduate Program and the UCLA/Getty Master's Program in the Conservation of Archaeological and Ethnographic Materials. The Cotsen Institute provides a forum for innovative faculty research, graduate education, and public programs at UCLA in an effort to impact positively the academic, local and global communities. Established in 1973, the Cotsen Institute is at the forefront of archaeological research, education, conservation and publication and is an active contributor to interdisciplinary research at UCLA.

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This book is set in 10.5-point Janson Text, with titles in 28-point Chaparral.
Designed by William Morosi
Edited by Carol Leyba

Front cover: The circular plaza/great kiva at Nancy Patterson Village (42SA2110) in winter (photograph by Jonathan Till); Abajo Red-on-orange bowl from Alkali Ridge Site 13 (42SA13) (Courtesy of the Peabody Museum of Archaeology and Ethnology, Harvard University, ID # 33-44-10/3088).
Back cover: Decorated basket bowl from Tseahatso Cave, Canyon del Muerto (AMNH 29.1/1753; courtesy of the Division of Anthropology, American Museum of Natural History, Laurie Webster, photographer).

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Acknowledgments/Foreword

When you have a book with three editors and 25 authors and coauthors, it is guaranteed that any recounting of the events or acknowledgment of the people who have helped bring it to fruition will be imperfect. Still, it is important to acknowledge those who at key junctures ensured the book's genesis.

The Crucible of Pueblos was conceived during a conference called "The Early Pueblo World," organized by Rich Wilshusen and Jim Potter and held at Towaoc, Colorado, on August 2–5, 2007. Prior to the conference, participants were primed with a battery of queries so that they arrived ready to discuss the demography, landscape, and cultural diversity of the northern Southwest for the period between A.D. 650 and 950. Participants were explicitly asked to share what we knew of the early Pueblo period in an open-ended, collegial setting and not to present formal papers. The conference was generously sponsored by the Ute Mountain Ute Tribe and the Bureau of Reclamation and intended to provide context for the completion of the massive Animas–La Plata Project. Jim Potter (then of SWCA), Terry Knight (Ute Mountain Ute Tribe), and Lynn Hartman (Ute Mountain Ute Tribe) guided the conference through to completion.

During our discussions, many of us were surprised by how much we collectively knew about this rarely discussed period. The success of our meeting was due to the fact that so many participants came so well prepared for what was intended to be an informal meeting. By the end of the conference, two of the editors (Schachner and Allison) and several of the participants (Varien, Potter, Van Dyke, and Lekson) thought there was the seed of a book in the informal presentations, if our discussions and data could be captured in text. With a little convincing, Wilshusen was brought back on board as the primary organizer.

Twenty-five people participated in the conference, and 18 of those individuals ultimately authored 11 of the chapters in this book. Kirk Anderson (Northern Arizona University), Carla Van West (Statistical Research Foundation), Michelle Hegmon (Arizona State University), Mark Varien (Crow Canyon Archaeological Center), and Tim Kohler (Washington State University) made important contributions to the conference, and we are heartened to see that many of their ideas have been published in other venues. Warren Hurley (Bureau of Reclamation) and Tom Yoder (SWCA) generously shared their knowledge of the early Pueblo period based on investigations at the Animas–La Plata Project, but went on to other projects after the conference.

We did not fully commit to the idea of transforming our discussions into a manuscript until a year and a half after the conference, when, after being asked for possibly the twentieth time about "how the book was coming," we finally relented. We would like to specifically thank Ruth Van Dyke for her suggestion of a book title that enabled us to envision a collective product. Steve Lakatos, Dean Wilson, and John Kantner—who had not been part of the Towaoc conference—were asked to contribute two papers to fill gaps noted at the conference. Three additional authors—Donna Glowacki, Don Irwin, and Tom Windes—were not able to attend the conference physically, but had avatars at the conference and participated in the book from the beginning. Kellam Throgmorton joined us during the rewriting of the first chapter, and his reimagining of our original text helped us to craft an introduction that addressed the weaknesses of our first draft. Phil Geib provided vital eleventh-hour help on figures. All who contributed to this volume did an extraordinary job of synthesizing difficult-to-find data for what in many areas was a poorly known early Pueblo period. One of the particular strengths of this project is that it weaves together insights from both academic and cultural resources management archaeology in a way that

we hope will make both stronger. The genesis and maturation of this undertaking continues to amaze us, and we owe all these colleagues, and dear friends, our deep thanks.

We also would like to acknowledge the generosity and patience of the Cotsen Institute of Archaeology Press. Shauna Mecartea, Eric Gardner, Carol Leyba, and Julie Nemer deserve commendation for assisting us in various parts of the publication process. Once we turned in our original manuscript, the Press sought the aid of two reviewers (one anonymous individual and Bill Lipe) who helped us significantly reshape and hopefully improve the volume based on their critique. In addition to providing a thoughtful and detailed review, we would also like to note that Bill has been, and continues to be, a role model to us and many others interested in the early Pueblo world.

Finally we would like to thank our various family members for putting up with an at times obsessive distraction over the last few years.

Richard Wilshusen
Boulder, Colorado

Greg Schachner
Los Angeles, California

Jim Allison
Provo, Utah

Editor Biographies

Richard H. Wilshusen (Ph.D., University of Colorado, 1991) is the State Archaeologist and Deputy State Historic Preservation Officer at History Colorado. Dr. Wilshusen has worked as an archaeologist in the American Southwest for over 30 years and is known for his work on population change and settlement shifts in the early Pueblo period, with an emphasis on the processes leading to the first pueblo villages in the northern Southwest. He is the coeditor (with Mark Varien) of *Seeking the Center Place: Archaeology and Ancient Communities in the Mesa Verde Region* (2002) and coauthor of "Chaco's Beginnings" (with Ruth Van Dyke) in *The Archaeology of Chaco Canyon: An Eleventh-Century Pueblo Regional Center* (2006) and "Evaluating the Emergence of Early Villages in the North American Southwest in Light of the Proposed Neolithic Demographic Transition" (with Elizabeth Perry) in *The Neolithic Demographic Transition and Its Consequences* (2008). Recently he has turned his interests to the dramatic changes in Pueblo and Navajo communities after A.D. 1540 and to the relatively unknown early Pueblo villages of the eastern Mesa Verde region.

Gregson Schachner (Ph.D., Arizona State University, 2007) is an Assistant Professor in the Department of Anthropology and Cotsen Institute of Archaeology at the University of California, Los Angeles. Dr. Schachner's research focuses on mobility and transformations in leadership and settlement structure in village contexts in the American Southwest. Over the past 15 years, he has worked as a field archaeologist in a variety of areas in the Southwest, including the Cibola, Mesa Verde, Hohokam, and Mimbres regions. His recent publications include "Changes in Regional Organization and Mobility in the Zuni Region of the American Southwest during the Pueblo III and IV Periods: Insights from INAA Studies" in *Journal of Archaeological Science* (2011) (with Deborah Huntley and Andrew Duff), "Ritual Places and Landscapes: Connecting Southwest Peoples across Space and Time" in *Movement, Connectivity, and Landscape Change in the Ancient Southwest* (2011), "Corporate Group Formation and Differentiation in Early Puebloan Villages of the American Southwest" in *American Antiquity* (2010), and "Imagining Communities in the Cibola Past" in *The Social Construction of Communities* (2008). Dr. Schachner is currently directing a survey and mapping project investigating village formation in the Petrified Forest of Arizona.

James R. Allison (Ph.D., Arizona State University, 2000) is an Associate Professor in the Department of Anthropology at Brigham Young University. His primary research interests are in the small-scale societies of the northern Southwest, quantitative methods, ceramic analysis, and archaeological theory. He has conducted archaeological research in the northern Southwest and eastern Great Basin for more than 20 years and is currently pursuing several research projects examining the roles of cultural diversity, immigration, ritual, and exchange in the development of ancestral Pueblo and Fremont villages. His recent publications include "The End of Farming in the 'Northern Periphery' of the Southwest" in *Leaving Mesa Verde: Peril and Change in the Thirteenth-Century Southwest* (2010), "Exchanging Identities: Early Pueblo I Red Ware Exchange and Identity North of the San Juan River" in *The Social Construction of Communities* (2008), and *Animas–La Plata Project:* Volume XIV—*Ceramic Studies* (2010).

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CHAPTER 1

Early Pueblos in the American Southwest:

The Loss of Innocence and the Origins of the Early Southwestern Village

GREGSON SCHACHNER, KELLAM THROGMORTON, RICHARD H. WILSHUSEN, AND JAMES R. ALLISON

MOST OF US GET DRAWN INTO ARCHAEOLOGICAL problems almost by accident. We bumped into a particularly interesting site, worked on a fantastic project, or got frustrated by the limitations of some explanation, or all of the above. The four of us were pulled into the archaeology of the northern Southwest fairly early in our careers and have long been fascinated by the research problems central to the origins of village life among ancestral Pueblo people. We differ somewhat in our methodological and theoretical views, but we all agree: research on this topic has been underappreciated by most archaeologists, both within the Southwest and beyond.

Early villages in the northern Southwest date to the Pueblo I period (A.D. 750–900 in most areas) under the Pecos Classification, an 80-year-old chronological scheme which still colors most archaeologists' perceptions of culture change in the ancient Southwest. The Pecos Classification (Kidder 1927) and most subsequent considerations of Southwest chronology and culture change labeled the Pueblo I period as part of a gradual transition, whereas we and many others now see it as a decisive turning point in Southwest prehistory. For too long Southwest archaeologists have been distracted by the architectural transition from subterranean pit houses to aboveground pueblos during this interval and insufficiently focused on what happened to the peoples, societies, and cultures. As illustrated by the research presented in this volume, the Pueblo I period, together with the adjacent few decades on either end, was a fundamentally transformative era, the crucible in which the northern Southwest's earliest permanent villages were forged and the first clearly Pueblo identities emerged.

As long as prehistoric change was seen as gradual, evolutionary, and affecting little more than architectural styles, it was reasonable to portray Pueblo I villages as something of a postscript to the adoption of agriculture and an uneventful prelude to more serious matters, such as the rise of a complex regional system centered on Chaco Canyon during the Pueblo II period (A.D. 900–1150) or the final migrations from the Mesa Verde region in the last decades of the thirteenth century A.D. This depiction jibed well with the archaeology of our culture historian and processual forebears, but it increasingly is out of sync with recent research findings and theoretical concerns. In fact, some would now argue that the seeds of Chaco and the Mesa Verde migrations were planted among Pueblo I period villages (Ortman 2009; Van Dyke 2007; Wilshusen and Van Dyke 2006). In addition, a truly remarkable

amount of empirical data has been generated in the Southwest—and, for that matter, across the world—over the last 30 years, and this has fueled a growing archaeological interest in early farming villages as contexts that changed how humans related to one another and conceived of the landscape around them. A major goal of this volume is to update the early Pueblo story and outline its importance in our understanding of Southwest prehistory and early farming societies in general.

Much of our current understanding of the Pueblo I period is the result of recent archaeological inquiry focused on the area north of the San Juan River that comprises the Mesa Verde region (Figure 1.1). Work in this area has directly challenged overly simplistic, gradualist depictions of this era by documenting the rapid appearance of large villages, strong evidence for developing social hierarchy, and connections between the Mesa Verde region and societies living in surrounding areas. This research has increasingly contributed to cross-cultural studies of early village societies focused on the proposed Neolithic Demographic Transition (Kohler et al. 2008; Wilshusen and Perry 2008), the evolution of

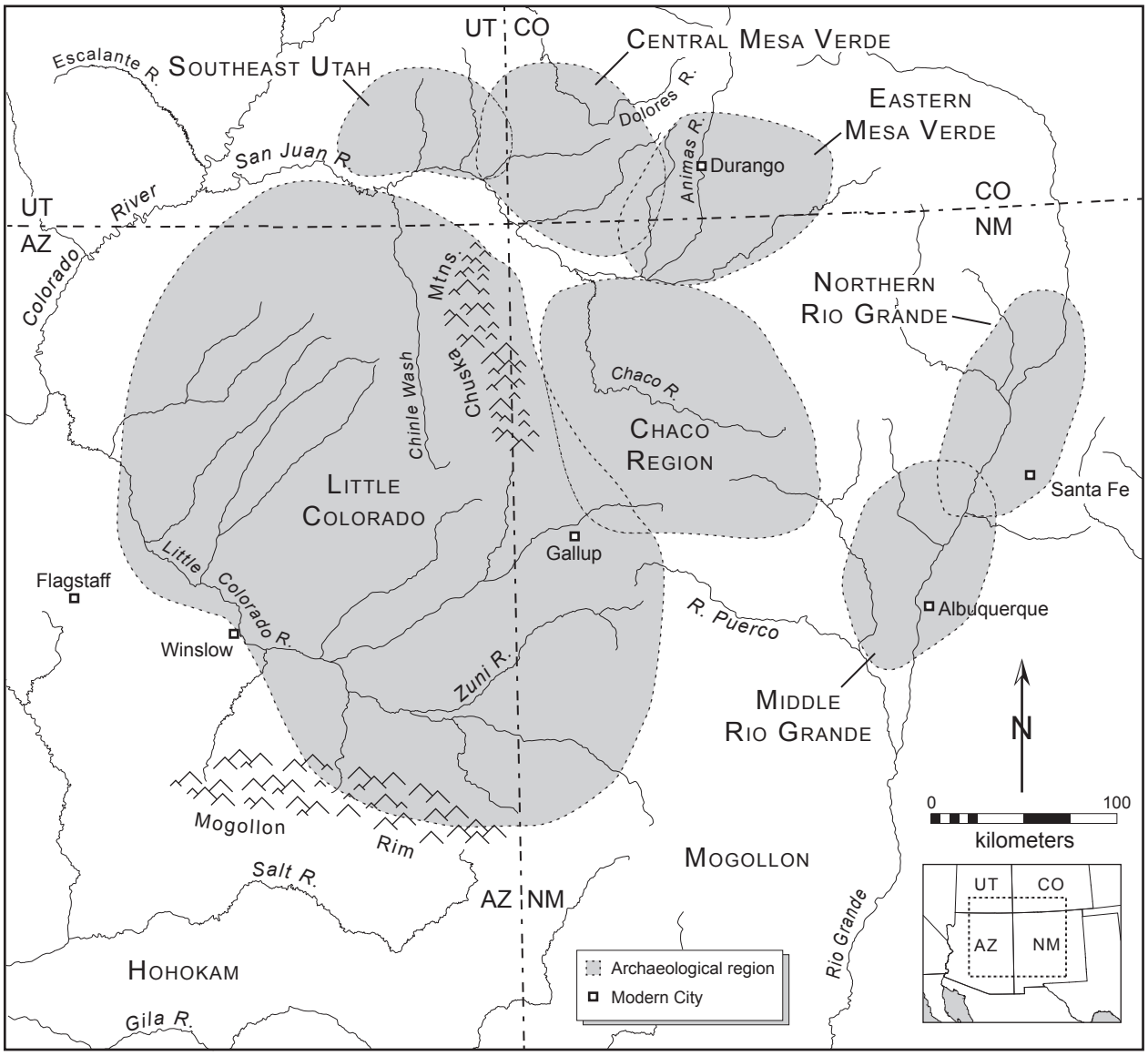


Figure 1.1. Archaeological regions of the northern Southwest for the early Pueblo period.

leadership (Kantner 2010), warfare and its relationship to village formation (Kohler and Varien 2010; Wilshusen and Potter 2010), and political stability in early complex societies (Bandy 2010).

The archaeological record of the Southwest provides the opportunity for unparalleled insights into the biological, ecological, social, and cultural effects of the adoption of farming. The inherent strengths of that record—preservation, chronology, and strong ethnographic analogues—and the intensity of research in the region have yielded what is arguably the most complete, data-rich view of life in ancient farming villages anywhere in the world. Yet this very wealth of data often causes Southwest specialists to focus on the details of regional chronologies and idiosyncrasies and to forget how our work on Pueblo prehistory can inform, and be informed by, global research on the Neolithic. As the simple and largely incorrect assumption that the Neolithic was marked by the simultaneous emergence of agriculture, sedentism, and the rise of social complexity was discredited, the study of the origins of villages lost some of its luster in the Southwest and elsewhere. This was due in part to our successes in documenting early farming societies, as well as our consideration of complex hunter-gatherers and other societies, which challenge prior views of Neolithic exceptionalism. Yet we would suggest that more recent studies of early farming societies have refocused research attention on new, but perhaps more interesting questions, concerning fundamental transformations in sociality, the relationship between people and the environment, and even human cognition and biology. As the focus of Neolithic research has elsewhere turned toward the dynamic changes in agricultural population distributions and size (Bellwood 2001; Bocquet-Appel 2002; Shennan 2008), the emergence of common patterns in culture and behavior associated with the shift toward village life (Lewis-Williams and Pearce 2005; P. J. Wilson 1988), and the rapid expansion, organization, and demise of early village communities (Kuijt 2000; Bandy and Fox 2010), we have not always been contributors to this research, despite the fact that such developments are frequently even more evident in the Southwest. We hope that this volume inspires our Southwest colleagues to think more broadly about the implications of their research for understanding early farming societies in a global context and provides our colleagues working in other regions with a sorely needed synthesis of this key era in ancient Southwest history.

A fundamental barrier to understanding the rise of villages in the northern Southwest has been the lack of a pan-regional context for cultural change during the late Basketmaker III–Pueblo I–early Pueblo II (A.D. 650–950) period. The six regional summaries in this volume aim to remedy this deficiency and to offer a comprehensive examination of the northern Southwest, extending the traditionally strong research focus on the Pueblo I period in the Mesa Verde region to surrounding areas (see Figure 1.1). Although these surrounding areas were often the subject of foundational early twentieth-century research on the late Basketmaker III and Pueblo I periods, for a variety of reasons they have been less important in recent theorizing about the rise of villages or early Pueblo period histories. A larger perspective has been crucial for examining cultural process during later periods in the Southwest (Adams and Duff 2004; Adler 1996; Lekson, ed. 2006) and, as the following chapters illustrate, is just as essential for understanding earlier time periods. As illustrated in a number of chapters, the ability to place the formation of early villages in such a detailed regional record is perhaps one of the most intriguing—and possibly unique—contributions of our research to the worldwide understanding of the rise of farming villages. In addition to an expanded spatial perspective, all of the regional summaries address a period from A.D. 650 to 950 that we hereafter refer to as the early Pueblo period. As noted above, this interval includes portions of several periods from the Pecos Classification, but by considering it as a single period we can even better capture the important changes in subsistence, architecture, social organization, and settlement patterns associated with the rise of village life in various parts of the northern Southwest. Because of the sheer magnitude and detail in the data we have for the greater Mesa Verde region, we offer three different

chapters on this area, even though it accounts for only one-quarter the area of our largest region, the Little Colorado. We hope this volume will spur new research on the early Pueblo developments in the Little Colorado, Chaco, and Rio Grande regions that will enable similarly detailed treatments for each of those regions in the future.

The regional summaries are followed by four synthetic chapters that focus on aspects of the rich early Pueblo material culture record to examine social identity, power, and gender from a variety of perspectives. These case studies hint at how the Southwest might serve as a useful comparative case study for understanding other early farming societies throughout the world. In case we have missed any major points, the concluding chapters are authored by two of the reigning "great synthesizers" of Southwest archaeology. These chapters challenge archaeologists to think in even bigger terms, extending the insights of this volume to the Greater Southwest and Mesoamerica and cross-culturally around the world.

So, how did our vision of the early Pueblo period come to be so limited over the last century of research, and why has only a relatively small (but growing since the 1990s) cadre of archaeologists focused on it? We need to indulge in a bit of historiography to understand why researchers in adjoining regions often have constructed, for the same time period, distinct and sometimes contradictory narratives on fundamental topics such as population growth and migration, the materialization of early villages, cultural diversity in regions and settlements, and relations of social power.

For simplicity, we have grouped our review of this research history into three periods. The first is a period of discovery in which the Pecos Classification was created based on research in the northern Southwest. During the second period, regional differences and chronologies were refined. The third period is characterized by immense cultural resource management (CRM) projects as well as dramatic improvements in our research methods and information technologies, new ways of thinking about the past, and the rise of indigenous archaeology and more historically based archaeologies. The last period is the one we are presently in, and it provides the context for the remainder of the volume. Although this research history is focused on the study of the early Pueblo period in the northern Southwest, archaeologists who are familiar with other areas likely will see broad similarities in how our understanding and interests in the Neolithic have changed over time.

How Early Pueblos Got Lost in the Pursuit of Chronology: Untangling the Original Applications of the Pecos Classification and the Development of Regional Phase Schemes

> One does not discover new continents without consenting to lose sight of the shore for a very long time.
> André Gide

The Original Stages of Development

A critical breakthrough in Southwest research occurred in 1927 when A. V. Kidder organized what would later be known as the first Pecos Conference and brought together a number of leading figures in Southwest archaeology to outline a common developmental sequence that traced the earliest Pueblo origins back through five stages of Pueblo change (I–V) to its Basketmaker beginnings (Kidder 1927). In the original Pecos Classification—which was intended to be a developmental rather than a chronological sequence—the Pueblo I period was considered to have three diagnostic traits: neck-banded pottery, cranial deformation, and villages with aboveground, contiguous rooms. The storage cists, baskets, and early pottery of the Basketmaker III period were well known from the dry caves of northeast Arizona and southeast Utah, and the masonry surface structures of the Pueblo II and III periods were easily identifiable across the northern Southwest. Even though the features of the Pueblo I period were only superficially known at the time, it was placed between the Basketmaker III and Pueblo II periods in the interests of demonstrating progressive cultural development. Key Pecos Conference scholars suggested it would exhibit pit houses and rudimentary surface structures that would, by the Pueblo III period, be transformed into fully realized

kivas and large pueblo villages. Many large hamlets with masonry pueblos of 10 to 15 rooms and associated kivas were already well known in 1927, and these Pueblo II period structures seemed to lay the groundwork for the Pueblo III—or Great Pueblo—period. At the time of the first Pecos Conference, the Pueblo II great houses of Chaco Canyon were incorrectly associated with the later Pueblo III cliff dwellings of Mesa Verde, which reinforced the perception of hamlets gradually transforming into large pueblo villages by the Pueblo III period.

In addition to being a period of incipient architectural development, the Pueblo I stage was to be a transition that bridged the cultural divide between the Basketmaker and Pueblo cultures. At the time, many researchers thought that the two "cultures" might actually represent distinctly different peoples (Kidder 1924; see Wilshusen and Perry, Chapter 10). Yet it was unclear whether the changes proposed for Pueblo I represented the migration of a new group of people who gradually replaced the Basketmakers, or if the ideas of aboveground pueblos, kivas, and larger villages represented the diffusion of ideas from another more "advanced" area or possibly even an independent innovation for this region (E. H. Morris 1939; Roberts 1935). Was the "muddle in the middle" (i.e., Pueblo I) due to the mixing of the two cultures or simply the awkward changes of a developing proto-Pueblo culture?

For the next decade, almost every Southwest archaeologist with funding and a field crew tried his hand at uncovering the small pueblos, and sometimes the large sprawling villages, that were thought to characterize the Pueblo I period. Frank Roberts (1930), Earl Morris (1939), Paul Martin (1939), and J. O. Brew (1946) all excavated stunning examples of immense Pueblo I villages in the Mesa Verde region, but in a sense they found too much (see Figures 2.3, 3.5, or 4.9). Large Pueblo I villages of 10 or more pit structures with 100 to 300 associated surface rooms made no sense as a developmental stage between the small Basketmaker III hamlets of one or two pit houses and a few storage cists and the slightly larger Pueblo II hamlets of one or two kivas and a few masonry surface rooms. Consequently, many researchers were reluctant to accept the Pueblo I period as anything other than a brief, and somewhat confused, transition (A. A. Morris 1934:56; E. H. Morris 1939:35; Roberts 1935) between Basketmaker and "true" Pueblo. But we now recognize that, throughout the world, the earliest farming villages were often large, unstable settlement forms, in many cases soon replaced by a return to smaller hamlets (Goring-Morris and Belfer-Cohen 2010; Shennan 2008).

Elsewhere in the northern Southwest, Gladwin (1945) and Roberts (1931, 1939, 1940) produced a series of seminal excavation reports on early Pueblo period settlements found along the Puerco River in eastern Arizona. Again, the specifics of the Pecos definition of Pueblo I made it difficult for the researchers along the Puerco to recognize these sites as truly being Pueblo I. The pottery was sufficiently different from that associated with the Mesa Verde region Pueblo I villages that Gladwin considered most of the sites he worked with to be a southern variant of Basketmaker III. Further confounding the situation, Roberts (1935) created his own rival developmental sequence that combined the Pueblo I and II stages of the Pecos Classification into a single "Developmental Pueblo" period. Roberts' sequence dealt with the muddle in the middle by simply collapsing Pueblo I and II together as a single transitional phase, which perhaps made sense in light of the stronger continuity between Pueblo I and Pueblo II in the Little Colorado region where his research was centered (see Schachner, Gilpin, and Peeples, Chapter 6).

Of the early researchers, J. O. Brew probably made the most sense of Pueblo I. Brew summarized previous classificatory schemes and presented a sweeping argument that finally clarified the Pueblo I to II architectural shift. In 1932 and 1933, he had excavated one of the earliest and largest Pueblo I period villages in the northern Southwest (Site 13 on Alkali Ridge, Utah), and based on that work Brew (1946:292–294) proposed a more interconnected early Pueblo period than was usual for this time, with potential cultural contacts between the Mesa Verde region and the Mogollon, as well as possibly the Hohokam (see Allison et al., Chapter 3; Lekson, Chapter 12). He suggested that there was, despite

the great variation in pottery and architecture of the Mesa Verde region, a biological continuity between earlier Basketmaker and later Pueblo people of the Mesa Verde region (Brew 1946:68–73). The fact that the Site 13 village was a magnitude larger than anything that preceded it, and equal in size to pueblos of the so-called Great Pueblo period of the thirteenth century, was of less interest to him than the documentation of cultural continuity.

Brew saw the details of the architectural changes of the period, not the sizes of the sites, as the central issue. Lack of concern with the scale of settlement was not unusual in these days before settlement archaeology became popular, and coupled with uncritical use of the term "village" for habitations of almost any size, archaeologists were ill equipped to deal with variability in terms other than cultural development. For example, according to researchers working in the Mesa Verde region at the time, Basketmaker III pit structures were used exclusively as residences, but by the Pueblo I period had been transformed into "protokivas," structures that had both domiciliary and ceremonial uses (E. H. Morris 1939:30). By the Pueblo II or early Pueblo III period, these pit structures had been transformed fully into "kivas," or subterranean structures used primarily for ritual based on analogy with the modern Pueblos (see Lekson 1988 for updated views on these changes). From an anthropological perspective, the variation in the size of Pueblo I sites was simply an aspect of the transition from single lineage Basketmaker bands to multilineage Pueblo societies with nonlocalized clans (Steward 1937; also Lipe and Hegmon 1989). This noisy variation was sorted out by the Pueblo II period, when small "unit pueblos" of several households—which probably represented a unilateral lineage—became the typical residential unit. Variability and diversity within architectural forms simply represented the confusion of a cultural transition, not variability or diversity in the uses of a structure or cultural trajectories. Change was still seen as linear and progressive.

During this initial period of study in the northern Southwest, early villages were seen as a way station between the Neolithic and Urban revolutions identified by V. Gordon Childe (1936). The growth of population was a consequence of settling down and domesticating plants and animals; it set the stage for the development of cities and early states or civilization. Although portions of Neolithic villages along the Danube such as Vinča had been exposed, and the Bandkeramik village of Köln-Lindenthal had been extensively excavated and published in 1936 (Bogucki 1988:50), relatively few early Neolithic villages the size of the early Pueblo villages had been exposed worldwide. It is likely that far more large Neolithic villages had been excavated in the Southwest in the 1930s than anywhere else in the world. Yet few outside of a relatively tiny group of Southwest scholars were interested in them. They were considered little more than an awkward and fleeting transition from semisedentary Basketmaker settlements to the large multistory masonry pueblos of Chaco, Mesa Verde, and the Rio Grande. Besides, most of the intellectual energy of Southwest archaeologists at the time was devoted to completing the mission of outlining archaeological culture areas and chronology (Reid and Whittlesey 2010) rather than exploring the dynamics of culture change.

The Shift to Chronological Periods and Regional Archaeologies

With the explosion of archaeological work in the Southwest in the 1950s, almost all concern about the large villages of the early Pueblo transition was quickly lost. As tree-ring and radiocarbon dating techniques were used to assemble specific regional chronologies in the 1950s and 1960s, archaeologists—almost without blinking—transformed the Pecos scheme from a proposal of broadly applicable, pan-Southwestern progressive developmental stages to a series of variants applicable only in specific regions. During this time, archaeologists were becoming more regionally focused, and the mounting interregional inconsistencies in specific temporal ranges, traits, and characteristics of the late Basketmaker III (A.D. 500–750), Pueblo I (A.D. 750–900), and early Pueblo II (A.D. 900–1150) periods were generally overlooked. McKern's (1939) taxonomic system was popular at the time, and almost every project created distinct chronologies

for the particular localities that were being investigated. This served to create insular pockets of early Pueblo period research, each with its own distinctive chronological sequences and particular trait lists. For example, the widely recognized White Mound phase of eastern Arizona has been variously assigned to both the Basketmaker III and Pueblo I periods: "late Basketmaker III and early Pueblo I" (Wendorf 1953); "late Basketmaker III" (Wasley 1960); "Basketmaker III" (Gladwin 1945; Martin and Plog 1973); and "Pueblo I" (Bullard 1962; McGregor 1965), depending on which locale one is in, even though these locales often adjoin one another.[1]

The vast increase in archaeological work in the 1950s was a result of changes in how archaeology was practiced. State museums, research labs, and universities increasingly participated in salvage archaeology projects in conjunction with the construction of oil and gas pipelines (Wendorf et al. 1956), the building of dams (Eddy 1966), and the creation of the postwar interstate highway system (Gumerman and Olson 1968; Sciscenti 1962; Wasley 1960). None of these projects specifically targeted early Pueblo period sites; the researchers were focused on all the archaeology contained within areas affected by development. Archaeologists garnered new understandings of the early Pueblo period by happenstance.

The salvage projects of the 1950s and 1960s also exacerbated the splintering of Southwest archaeology into areas of regional expertise. For example, Interstate 40 crosses both New Mexico and Arizona, and when its construction required archaeological salvage excavations, the projects were divided along the state line between the Laboratory of Anthropology in Santa Fe and the Arizona State Museum and the Museum of Northern Arizona. The three groups used different excavation methods, and the artifacts and paperwork from the I-40 highway salvage projects are still housed in three separate repositories. Although relatively little known, these projects remain crucial for understanding the early Pueblo period in the Little Colorado region (Schachner, Gilpin, and Peeples, Chapter 6).

At the same time, the National Park Service and other government agencies were engaged in large-scale survey and excavation projects associated with new visitor center displays and park trails (Hayes 1964; Hayes and Lancaster 1975). Large-scale investigations on Mesa Verde between 1958 and 1965 used a ceramic typology that unknowingly conflated Pueblo I– and Pueblo II period sites in the park. This misunderstanding was further compounded by park archaeologists' assignment of these sites to Roberts's (1935) Developmental Pueblo period (A.D. 700–1000), which was really better suited to the area south of the San Juan River, where the early Pueblo period was more challenging to distinguish. A similar conflation of time periods plagued early surveys of Chaco Canyon, masking a key archaeological transition linking the early Pueblo period histories of the Mesa Verde region and Chaco (Windes and Van Dyke, Chapter 5).

Consequently, by the 1960s, sites dating to the early Pueblo period in the northern Southwest were variously placed within the Pecos Classification or newly developing regional phase sequences, depending on the research idiosyncrasies of each region investigated and the training of different investigators. The use of phase names was intended to clarify the archaeological diversity of a wide amount of territory. It actually served to render the archaeology of various parts of the Southwest increasingly incommensurate with one another, and sometimes affected the ability of researchers to understand the archaeology beyond the borders of their particular geographic specialty. As federal agencies, museums, research institutions, and universities began to generate increasingly larger data sets in the 1960s and 1970s, the inconsistent application of the Pecos Classification meant it was harder and harder to perform records searches for sites of a specific chronological period. As a consequence, regional and chronological syntheses suffered. The importance of the early Pueblo period as a time of great social change was difficult to recognize for many researchers because the actual sequence of events and contemporaneity of particular changes were obscured in interregional comparisons. Data sets from this era remain difficult to incorporate in

modern studies due to the variation in phase terminology and chronological assignments.

The focus on delineation of chronology and regional material culture variation was true of much of the archaeology of early farming societies across the world during the mid-twentieth century, clouding some of the apparent cross-cultural commonalities in the emergence of village life that have recently assumed greater archaeological interest. Archaeologists interested in early farming societies are likely to make important contributions by revisiting the products of our cultural historian predecessors, as many of their projects yielded crucial and unique data and insights that are no longer replicable after a half-century of population growth and development. All of the chapters in this volume illustrate the benefits of these reanalyses and the continued relevance of these earlier projects.

The World Turned Upside Down: Public Archaeology and the Remaking of Southwestern Prehistory

> Behold, the LORD maketh the earth empty, and maketh it waste, and turneth it upside down, and scattereth abroad the inhabitants thereof. Isaiah 24:1 (King James Version)

Investigations centered on the Chaco core area in northwestern New Mexico (Lekson, ed. 2006), Black Mesa in northeastern Arizona (Powell and Smiley 2002), and the Coronado generating plant between the Little Colorado and Puerco drainages in eastern Arizona (Stebbins et al. 1986), all uncovered significant early Pueblo period remains and were among the first big archaeological projects in the Southwest that occurred within the new framework of cultural resource management laws passed in the 1960s and 1970s. These projects also marked a significant shift in the study of the early Pueblo period, as most academic archaeologists of this era became increasingly focused on the later periods of the Southwest sequence, particularly the Pueblo III period (A.D. 1150–1275) migrations and the emergence of large villages during the Pueblo IV period (A.D. 1275–1540). The primary locus of early Pueblo period research shifted dramatically to the newly developing cultural resource management industry.

The Chaco, Black Mesa, and Coronado projects were typically much bettered funded and had much larger staffs than the salvage archaeology projects of previous decades. These projects and others of the era increasingly had research designs, sampling plans, and well-defined methodologies that brought a new rigor to the examination of the past. This research, which was often at least initially supported by universities, was heavily influenced by the development of processual archaeology. The new more explicitly scientific approaches proposed to ask new questions and to stop the flow of counterfeit histories of the past (Clarke 1978:3). As was generally the case for the 1970s, most of these projects were framed within ecological models of human adaptation. Although late Basketmaker and early Pueblo sites were investigated by all these projects, a number of factors—such as the increasing demands and multidisciplinary nature of CRM research, the insular nature of regional research, and the insufficient publication of CRM investigations in widely distributed academic journals and books—all served to maintain the status quo interpretation of Pueblo I. For most archaeologists, it remained a period of relatively long-lived sites, small populations, and gradual change across the northern Southwest between A.D. 650 and 950.

When one of us (Wilshusen) began work in 1979 on the Dolores Archaeological Project (DAP) (Breternitz et al. 1986), which remains one of the largest archaeological projects ever conducted in the United States, two prominent Southwest archaeologists who visited the project both privately confided that he would quickly get bored because much of the research would be on late Basketmaker III and Pueblo I sites. One said: "If you have seen one Pueblo I site, you have seen them all," and the second reiterated that Pueblo I sites were "cookie-cutter" in their conception, with little to figure out. Yet the excellent preservation, the possibility of precisely dating sites with dendrochronology, and the immense number of sites that would be affected by the construction of the McPhee Reservoir defied this prediction. The work at Dolores offered an

amazing opportunity to look at early farming villages in greater detail and across a wider area than earlier studies. The scope was mind-boggling, with over 100 sites to be investigated, some of them immense villages of multiple roomblocks and hundreds of rooms. Among the revelations of these investigations were that the large villages investigated by Roberts, Morris, Brew, Martin, and others were not anomalies. Within the Dolores study area there were seven villages—with a total of over a thousand rooms—that appeared to have been built, flourished, and thereafter abandoned all within the span of three to four generations in the ninth century (ca. A.D. 825–890). The problems presented by the Pueblo I "transition" clearly required new attention, and the more specific topic of early villages was receiving renewed interest elsewhere (Flannery 1972, 1976).

The immense amount of site survey and excavation data from projects such as Dolores, Chaco, Coronado, Black Mesa, and others—even in the crude computer data sets of the time—exponentially multiplied our ability as archaeologists to trace out the culture history of the northern Southwest. Whereas histories had been stitched together from hundreds of sites, we now had thousands of sites that could be accurately placed between A.D. 650 and 950. Based on the temporal pattern of these newly recorded sites, Michael Berry (1982) suggested that the occupation of large regions of the Southwest was episodic, with the Pecos periods representing major boom-and-bust cycles in particular areas. Scholars such as Sarah Schlanger (1988) modified this interpretation to trace out population growth and movement at a finer scale, but still had people moving across landscapes in ways that had not been contemplated by prior archaeologists who thought they were studying sedentary societies. Migration was one of many "dependent" variables that increasingly became "independent" as the tidy closed-system models of processualism began to be challenged by the messiness of all the new data that was being generated (Anthony 1990). But as long as Southwest archaeologists confined our investigations to a specific region, such as the central Mesa Verde, the creation of the large villages and their relatively quick abandonments still defied explanation. The precision of our dating had to be combined with a much larger scope of investigation.

Through the 1980s and 1990s, larger-scale phenomena, such as the late Pueblo III period reorganization (Adler 1996), the rise and fall of the Chaco regional system (Crown and Judge 1991; Doyel 1992), and the emergence of pan-regional ritual and economic networks during the Pueblo IV period (C. E. Adams 1991; Crown 1994; Upham 1982), were at the heart of discussion and debate in the archaeology of the northern Southwest. Archaeologists began to increasingly appreciate the scale, complexity, and dynamic nature of the ancestral Pueblo past. Data continued to build and to augment our understanding of, as well as our confusion about, the early Pueblo period, but making larger sense of the early Pueblo transformation eluded our grasp until researchers recognized and attempted to explain the diversity within the Pueblo I archaeological record.

Unlike researchers in the initial period of study whose confusions developed because of the lack of information from early Pueblo period sites, Southwest archaeologists were now literally drowning in data. The scale and pace of CRM projects had begun to outstrip the ability of the discipline to absorb, critically engage, and synthesize new information. Producing publications that adequately incorporated this new data, passed through peer review, and were available to a wide audience were (and are) very real problems within the CRM industry. In spite of this, we feel that the insights into early farming societies presented in this volume exemplify the promise of research driven by historic preservation legislation. Similar, if not more extensive, insights have been gained through CRM in the Hohokam culture area of the southern Southwest and much of the central Mississippi Valley.

In the late 1990s, some of the original DAP researchers and their younger colleagues began to reevaluate the massive Dolores data set. Wilshusen and Ortman (1999) suggested that the seven documented ninth-century villages of this locale were organized in two distinct patterns, such that they likely represented distinct, yet contemporary, cultural groups who had lived next to each other along

the Dolores River in the A.D. 800s. In addition, there was greater recognition of historical ties that might link the rise of Chaco and the early Pueblo villages of the Mesa Verde. Windes and Ford (1992) had already suggested that the large early pueblos at Dolores—which had yielded archaeological evidence of feasting, ritual, and political authority—might have served as models for the initial great houses at Chaco. The patterns at Dolores that foreshadowed aspects seen in Chaco Canyon later in the tenth and early eleventh centuries did seem striking, and investigators increasingly wondered whether "the ancestors of both Chacoans and Mesa Verdeans lived together" in the Mesa Verde area in the late ninth century (Wilshusen and Ortman 1999:391). Our relatively naive separation of the great regional traditions such as Mesa Verde, Chaco, Kayenta, Cibola, and Rio Grande began to be questioned, which opened the floodgates for reintegrating the "separate, but equal" regional culture histories that had held sway since the 1930s. In other parts of the world, there were similar attempts to better understand regional histories as the complex interplay of interactions among different people and groups within a region combined with influences from outside a region (Anthony 1990; Renfrew and Cherry 1986). The stage was being set for more nuanced discussions relating diverse material culture to distinct ethnicities or cultural identities.

East and West, North and South: A World Remade by History, Indigenous Archaeology, and Crossing State Lines to Incite Archaeology

> "Away to the north, holy people are gathering from every direction!
> They come, with their corn-growing powers,
> And still they come!
> Until here they have arrived!" (Ortiz 1979, cited in Sweet 1985)

Over the last decade, the fundamental changes in our understanding of early Southwest villages have come from two very different directions. One perspective is informed by the greater emphasis on historical contingency and interpretive history (Lekson 2009), along with an increased concern with issues such as identity and agency (Mills 2004; Varien and Potter 2008). These emphases have repositioned archaeology in the Southwest, as well as across the globe, as a much more humane science. This tendency has been reinforced by the implementation of the Native American Graves Protection and Repatriation Act (NAGPRA), which has produced many far-reaching effects on Southwest archaeology, such as a quicker turnaround on the analysis of skeletal remains, increased collaboration with Native Americans, and a burgeoning indigenous archaeology movement (Colwell-Chanthaphonh 2010).

Increased emphasis on pan-regional approaches and overcoming the narrow, regional studies of past decades has also encouraged Southwest archaeologists to incorporate different scales of analysis and diverse theoretical perspectives in their research. They have combined fine-grained analyses of material culture to detect greater cultural diversity in local communities, while at the same time trying to relate these differences to pan-regional changes (Gregory and Wilcox 2007; Lekson 2009). As discussed earlier in this chapter, Southwest archaeologists have also begun to think of the Formative (i.e., the Neolithic in the Americas) changes in the Southwest within the context of the Neolithic globally. These developments have made for a much more energized anthropological and historical Southwest archaeology than we have seen in a long time.

NAGPRA, in particular, has compelled archaeologists and Southwest nations, tribes, and pueblos to consider each other's views of the past. Whereas earlier archaeologists such as A.V. Kidder thought Pueblo groups incapable of accurately accounting their past (Kidder, quoted in Givens 1992:59–60), Southwest archaeologists in the last decade have increasingly used indigenous oral histories and expert opinions in their reconstructions of Southwest history (Bernardini 2005; Liebmann et al. 2005). By necessity, NAGPRA has renewed a focus on human burials in archaeological research, as Native American burials now have to be studied quickly within the construction zones of large

federal projects and repatriated to descendant peoples. This has refocused our analyses on much larger burial populations and in a number of cases has resulted in new interpretations of the past, such as the estimation of much higher population growth during the early Pueblo period than we had ever expected (Wilshusen and Perry 2008).

Although historically based approaches have been used to analyze later Pueblo periods, they have been unusual in examinations of the early Pueblo period until the last decade. Using the concepts of cultural landscapes and memory, Van Dyke (2007) has demonstrated that early Pueblo period sites become focal points for later communities, influencing architecture and settlement patterns. Studies incorporating historical process over the long term and at a large scale have shown how cultural patterns established as early as the A.D. 800s reverberated through time to influence distinct developmental trajectories in the Mesa Verde and Little Colorado regions (Cameron and Duff 2008).

With many regions in the northern Southwest approaching 10 to 15 percent samples of survey coverage (and higher proportions if uninhabitable environments are excluded from calculation), there are remarkable collections of data sets to address the topic of early villages anew. Increasingly, federal and state agencies are commissioning large-scale reevaluations of existing survey and excavation data because of the need to update old and sometimes inadequate records (Chuipka 2009a; Chuipka et al. 2010; Lipe et al. 1999). Looking at one village or even a group of nearby villages is no longer sufficient. This was the context in which 26 archaeologists met in 2007 to reshape our conception of the early Pueblo period in the larger crucible of regional histories, cultures, climates, landscapes, and people. Under the sponsorship of SWCA, Inc. (Jim Potter) and the Ute Mountain Ute Tribe (Terry Knight), and with the coordination of the senior editor (Wilshusen), we gathered at Towoac, Colorado, almost exactly 80 years after the original Pecos Conference. The ostensible focus was to assemble comparable regional data on demography, settlement organization, cultural diversity, and migration between A.D. 650 and 950 in order to make better sense of the early Pueblo I excavations associated with the Animas–La Plata Project. It rapidly became something more than that. This volume is the primary product of those discussions and hopefully does justice to the enormous amount of effort that has gone into early Pueblo archaeology over the last eight decades. The authors in this volume bring a variety of perspectives to the study of the early Pueblo period, all of which reflect and build upon the history of research that we have presented here. We intend this volume not only to serve as a primary reference for the early Pueblo period, but hope that the depth and detail of our data, as well as the originality and relevance of our theoretical concerns, attract the interest of scholars studying early farming societies across the world.

As with the original Pecos conception of the early Pueblo period, we begin our examination with the greater Mesa Verde region. Allison and his colleagues (Chapter 3) and Potter, Chuipka, and Fetterman (Chapter 4) trace out the histories of the first villages founded between A.D. 760 and 790 in the eastern and western regions of the Mesa Verde region. These villages were surprisingly short-lived, and there was an apparent coalescence of the many clusters of villages in the central Mesa Verde region between A.D. 825 and 890 (Wilshusen et al., Chapter 2). It is evident that people with different ideas about houses, cuisine, and organizations were living side-by-side in these communities and that our current histories are at best first approximations. Among the questions that remain in the greater Mesa Verde region are, How and why did people with different cultural backgrounds and histories forge the common social identities that are evident in these villages? What made the population densities of the Mesa Verde region rise so fast and reach higher peaks than those found in regions to the south?

Many Mesa Verde–region archaeologists argue that leaders of larger groups must have taken on increasing importance in both economic and religious matters, likely driving the extremes of population aggregation documented in the region. Periodic ritual gatherings, with associated performances and feasts, may offer one means to explain

how large villages emerged and why some villages were organized so differently from others. Potter (Chapter 8) examines faunal data from across the greater Mesa Verde region to determine what dietary advantages were offered by residence in large villages and participation in communal events. In addition, periodic gatherings, with their shared activities—feasting, dancing, singing, and the like—could have been important in creating and reinforcing the emergence of community-scale social organization. Wilshusen, Ortman, and Phillips (Chapter 11) present archaeological evidence that sheds insight on the structure and role of these events, but as Kantner notes in his summary in Chapter 13, there are still plenty of gaps and possible contradictions in our present explanations.

Another major issue that has become clear in the last decade is that the areas south of the San Juan River are equally interesting and important during the early Pueblo period, if somewhat neglected by archaeologists. Migration and interaction among populations in what have been archaeologically defined as different regions of the northern Southwest have become increasingly evident during the early Pueblo period, just as these processes have assumed greater significance in the study of later periods. It has become clear that the populations of a variety of areas likely contributed to changes in the social organization, ritual, and settlement structure that created the dynamism of the early Pueblo period as well as the emergence of the later regional system centered at Chaco Canyon. Schachner, Gilpin, and Peeples (Chapter 6) explore the great kiva communities of northeast Arizona and the potentially quite large villages that existed along the tributaries of the Little Colorado during the seventh, eighth, and ninth centuries. Social changes that arose in these areas illustrate the emergence of alternatives to the social models of Mesa Verde villages and exhibit quite different connections to the later rise of Chaco. Windes and Van Dyke (Chapter 5) discuss the early Pueblo period archaeology of Chaco Canyon and surrounding areas. This region was an early center of population during the Basketmaker III period and the recipient of substantial immigration from other parts of the early Pueblo world beginning in the A.D. 880s. All studies of the rise of Chaco Canyon as a preeminent social center must now begin with this era. Lakatos and Wilson (Chapter 7) outline the early Pueblo period archaeology of the northern and middle Rio Grande, which are unfortunately often overlooked in syntheses of the northern Southwest that focus on periods prior to the A.D. 1200s. Rio Grande communities of this era appear to represent radically different forms of community structure and subsistence emphases, which provide a key point of contrast for understanding developments farther west.

Future work on the early Pueblo period needs to concentrate on these regions if we are to understand the possible sources of immigrants and influences in the eighth-century villages far to the north and the possible destinations of the emigrants from the Mesa Verde region in the early tenth century. Modifications in the nature of social power and leadership during the Basketmaker III period in these southern communities may have foreshadowed the emergence of the northern, Mesa Verde villages a century later (Wilshusen, Ortman, and Phillips, Chapter 11). Wilshusen and Perry (Chapter 10) suggest that earlier changes in population structure and household organization and size, the result of a Neolithic Demographic Transition, may underpin these transformations and help to explain how new economies and communities came into being within the early villages.

Southwest archaeologists will not make sufficient sense of the collapse of the ninth-century villages in Mesa Verde and the expansion of the early great houses in the Chaco region in the tenth century until we break free of the confines of "Mesa Verde" and "Chaco" and examine the settlement data at the scale of the northern Southwest. Our artificial boundaries have occasionally gotten the better of us. Webster's (Chapter 9) research on early Pueblo period perishable materials such as cordage, basketry, and sandals from throughout the northern Southwest well illustrates the promise of new, pan-regional studies. Her study uses data from across the entire northern Southwest, even stretching beyond what otherwise is the western

boundary of this volume's coverage to include data from early Pueblo sites in the vast, but archaeologically poorly known area across the Colorado River. She shows that distinct material culture preferences were maintained through time between the eastern and western portions of the northern Southwest, but that the traditional, reified culture areas may bear little resemblance to social boundaries recognized by early Pueblo people. Although textiles and other woven artifacts may be uniquely suited to these types of pan-regional studies, we envision that similarly broad research on the production and distribution of other objects is likely to yield potentially transformative insights into the social scale and intensity of early Pueblo period interaction. Although sedentism and increasingly local economic interactions have long been assumed to be hallmarks of the Neolithic transition, these assumptions are increasingly facing serious challenge from archaeological data in the Southwest and beyond.

It is clear we need to consider the prehistory of the Southwest at a variety of scales, from the small twists of a length of cordage to the vast spaces between the Rio Grande and Colorado rivers and beyond, if we are to make sense of how the earliest villages came into being. Do these early villages map out social relationships with the layout of each new roomblock and the arrangement of each roomblock within a village? How and why were they replaced in less than a century by the nascent great house system that led to Chaco Canyon's florescence? Do great people, or people who aspire to be great, construct "great houses"? Are the new villages, or maybe the great houses within them, making evident the social relations of a "community"? Lekson urges us to think at an even larger scale in Chapter 12, but we had to be content with the northern Southwest for this volume. His instincts are spot on, though, in terms of understanding not only the Southwest, but also early farming societies in general. Kantner's concluding chapter (13) draws on the insights of the first 11 chapters to attempt what may be the first true pan-regional synthesis of the early Pueblo period. His work illustrates the analytical benefits of a historically minded approach as well as the potential for early Pueblo period archaeology to contribute to larger anthropological questions about population growth and the origins of villages, social power, and regional interaction in early farming societies. We hope that the fine-grained and large-format nature of the Neolithic snapshot afforded by the northern Southwest and presented in this volume encourages and provides the basis for future conversations, whether they take place in the Mississippi Valley, on Europe's Atlantic coast, the banks of the Euphrates, or along the Yellow River.

For ancestral Pueblo people, the Pueblo I period was in some ways "a world turned upside down," and perhaps the same can be said for the transformation in thinking about this period by archaeologists. The archaeological perspective on this era remains far from complete, however, as there are still plenty of clues required to make better sense of this transformative period in the future. Southwest archaeologists still need to work on the details and the variations, but the authors of the chapters in this volume at least begin to trace out the deep history and important place of the early Pueblo world in the creation of the modern Pueblos that exist today.

Note

1. Special thanks to Dennis Gilpin for pointing this out.

CHAPTER 2

Heartland of the Early Pueblos:

The Central Mesa Verde

RICHARD H. WILSHUSEN, SCOTT G. ORTMAN, SHANNA DIEDERICHS,
DONNA M. GLOWACKI, AND GRANT COFFEY

THE CENTRAL MESA VERDE REGION HAS the highest number and greatest concentration of early Pueblo villages in the northern Southwest. Literally hundreds of sites dating from A.D. 650 to 920 have been excavated in this area, and there are over 5,000 late Basketmaker and early Pueblo sites in regional survey databases. Almost 30 sites provide evidence for the rapid development of large, early villages in the late eighth to the mid-ninth century and their widespread disintegration by early in the tenth century. We draw upon the diverse histories of these excavated and surveyed sites to consider how and why so many villages of 100 to 300 people flourished on this landscape. Initially, these villages were sufficiently attractive to draw in population from the eastern or western Mesa Verde regions as well as from south of the San Juan River (Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen and Ortman 1999), such that a culturally diverse and potentially competitive network of communities emerged between A.D. 810 and 880. Although at least half of the regional population of over 8,000 lived in villages at this time, the organizational glue and subsistence systems that held these villages together apparently were insufficient to withstand stresses such as civil strife and environmental degradation in the late ninth and early tenth centuries. The ensuing massive exodus of people from this region to the south and west between A.D. 880 and 920 may have ultimately triggered the rise of early Chaco great houses. Our understanding of the region between A.D. 920 and 950 is limited, so we end our discussion at A.D. 920.

We first offer a brief description of the region's geography, vegetation, climate history, and early cultural history in order to distinguish it from the eastern and western Mesa Verde regions (see Figure 1.1). This background highlights key characteristics that may have made the central Mesa Verde more attractive than other regions to a large early agricultural population. Although dispersed populations persisted in the region throughout the period we examine, our primary focus here is on the nature of the cultural transformation of early dispersed communities into the first aggregated communities that we can call villages. This issue is particularly critical to the central Mesa Verde region, as it would become the most densely occupied area in the northern Southwest by A.D. 850.

We also summarize our present archaeological knowledge of the cultural history of the region for the A.D. 650 to 920 period and illustrate key

settlement changes and representative sites for four important subperiods. These subperiods are important heuristic categories that allow us to isolate key attributes influencing the prevailing conditions to more closely examine the process of change as early village populations grew and then declined. Through this assessment, we also discuss the controversies associated with estimating site use life and regional populations for the period A.D. 650 to 920.

By examining the changing organization of sites and shifting regional settlement patterns through time, we suggest how the inhabitants of these villages, or early pueblos, constructed a collective identity to "become" a village. This type of analysis allows us to begin to address such key questions as, How did villagers create a new form of social solidarity that drew people into villages and yet could be derived from the fundamental cultural institutions of earlier dispersed communities? What was the "social glue" (the internal hierarchies and social schemas) that helped to hold these villages together? Although the high population density and total are a reflection of a potentially highly productive agricultural landscape, these early villages ultimately failed to last more than a few generations and fell apart in association with significant region-wide population decline by the early tenth century. Thus, another critical question is, What role did environmental and social factors play in the disintegration of these early villages and the emigration of regional populations during the A.D. 880s?

The Inherent Attractiveness of the Central Mesa Verde Region for Early Farmers

In the early Pueblo world, the central Mesa Verde region, as we define it for the early Pueblo period, is bounded to the south by the high desert badlands and hills between the Mesa Verde cuesta and the San Juan River, to the north by the highlands just beyond the Dolores River, to the east by the La Plata River drainage, and to the west by a gradient demarking 40 cm (15.75 inches) of average annual precipitation, a line that somewhat approximates the present Utah–Colorado state line, with higher annual precipitation generally occurring to the east and lower precipitation to the west. Although the central Mesa Verde region has great ecological and topographic variability, it has several qualities that make it distinct from the regions east and west of it and would have made it particularly attractive to farmers with rapidly growing populations in the eighth and ninth centuries. The core of the central Mesa Verde region (Figure 2.1) is relatively high, with elevations in the main agricultural lands between 1,830 and 2,195 m (6,000–7,200 feet); and it has relatively consistent summer growing-season precipitation that ranges between 158 and 244 mm, or 6.2 to 9.6 inches, with precipitation typically increasing with altitude (Adams and Petersen 1999). Although growing crops at higher and potentially wetter elevations (above 2,000 m) and in water-rich river valleys generally increases the risk of early and late summer frost (these areas average less than the 2,500 cumulative growing degree days [CGDD] recommended for corn or beans), farmers can readily exceed the minimum CGDD requirements for crops such as maize and beans by selecting upland field areas with favorable aspects and lower risk of cold air drainage. Consequently, much of this region, with its deep, rich eolian-derived loamy soils, has been successfully farmed in corn, beans, sunflower, and alfalfa over the last century, even though there have been episodic droughts and localized crop losses due to freezing.

The eastern and western Mesa Verde regions have seen intensive agricultural use of particular locales both historically and prehistorically (K. R. Adams 2006:2–5), but the moderately high elevations, agricultural soils, and good summer moisture averages of the core of the central Mesa Verde region provide much more agricultural acreage with higher productive potential than either of the other two regions. Although the relatively rugged territory of the eastern Mesa Verde does have much lower agricultural potential than the central region (Adams and Petersen 1999: table 2–7), at specific times and in particular locales, especially the lower reaches and Pleistocene terraces of the La Plata drainage (Toll and Wilson 2000), maize-bean agriculture

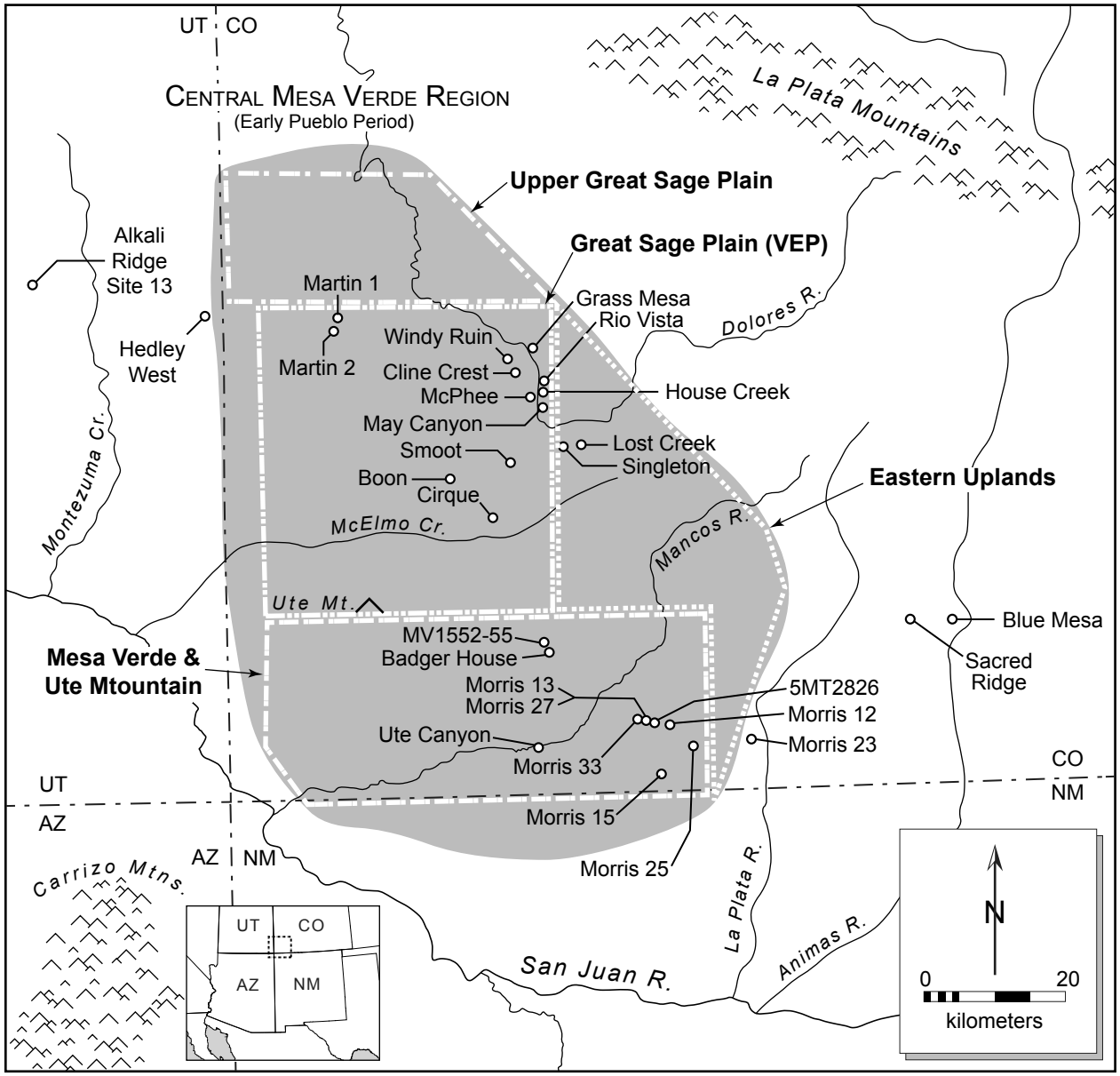


Figure 2.1. Central Mesa Verde region with locations of some of the key Pueblo I villages, mountain ranges, and rivers. Four study subareas are outlined in white.

has been very successful. For example, Bellorado and Anderson (2009) demonstrate that during the A.D. 740–790 period some areas around Durango were particularly favorable for maize agriculture. Similarly, although the western Mesa Verde region (southeast Utah) has had historically lower moisture averages than the central Mesa Verde, it too has areas that have prehistorically and historically been successfully used for maize-bean agriculture (Thompson 1993). The sheer extent and amount of potentially arable lands in the central region, in combination with its mosaic of wild resources, is what distinguishes it from the other two regions. Many of the block survey areas in the central Mesa Verde have approximately 50 percent of their total area in arable land (Wilshusen 2002:115). The average extent of arable land in comparable survey areas in the eastern and western Mesa Verde regions is much lower, with greater risk of either cold air damage or drought in many locales.

The central Mesa Verde uplands were covered with piñon-juniper woodland and gambel oak scrubland at the time of the first significant human settlement in the late sixth century (Petersen 1988). The Four Corners, especially the central Mesa Verde region, appears to have been relatively unattractive to Paleoindian and Archaic hunter-gatherers and foragers (Matson 1991) and only sparsely utilized in Basketmaker II (Lipe 1999a:161), so this region would have offered a relatively untouched resource base for early agriculturalists in late Basketmaker times. Wood for construction timber, springs and creeks for water, and wild plants and animals for food would have been in good supply in those areas of arable soil most likely to be picked for agricultural settlement (Adams and Petersen 1999: table 2–5). Although both the eastern and western Mesa Verde regions have well-documented Basketmaker II occupations (Matson 1991) whose histories would have clouded the claims of newcomers during the seventh century resettlement of those areas, the central Mesa Verde, in contrast, would have been virgin territory.

Petersen (1994; see also extensive summary in Adams and Petersen 1999:41–42) has argued that the primary period of Pueblo occupation of southwestern Colorado effectively corresponds to the Medieval Warm Period (ca. A.D. 800–1200). Using piñon pine pollen as a proxy measure of summer precipitation, Petersen argued that summer monsoons gradually increased during the A.D. 600 to 1200 period and that higher summer moisture would have made the Mesa Verde region particularly attractive to early agriculturalists. Yet, we also know there was localized variation within this broader pattern. For example, Schlanger and Wilshusen (1993) proposed a series of relatively favorable and unfavorable years for agriculture in the Dolores area using a localized climatic reconstruction computed with five-year unweighted running means of tree-ring departures for the years A.D. 600 to 910 based on a measure of "good" years and "bad" years for moisture which Petersen had computed from a century of historic climatic and agricultural data for the area. Their data show a measurable and somewhat predictable relationship between the occupation and abandonment of sites in the Dolores area and favorable and unfavorable variation in local precipitation and projected maize harvests.

Follow-up studies such as those by Bellorado and Anderson (2009) suggest that there is some promise in understanding population movements within a region in comparison with high-frequency climatic reconstructions that predict potential success or failure within various agricultural locales. In recent decades, archaeologists have increasingly recognized the need to consider a number of integral factors, including the influences of anthropogenic ecology (K. R. Adams 2004; Kohler 2004), the local climatic and topographic risks for maize-bean agriculture (Van West 1996), farmers' abilities to monitor variable conditions and to respond to changes through social networks (Reynolds et al. 2003), and the impact of diets with varying mixes of game, domesticated turkeys, a variety of domesticated crops, and wild fruits and plants among contemporary neighboring groups (Potter, Chapter 8). While we are presently not able to model and compare the annual differences in resource potential for the five or more distinctive agricultural/wild resource zones within the central Mesa Verde (Adams and Petersen 1999: fig. 2-1), the hypothesis that populations monitored agricultural/wild resource output and shifted the locations of their houses remains a possible explanation of population fluctuations in a locale.

The data we do have suggest that region-wide there were periods of low potential production in the late 600s, the mid-700s, the late 800s, and early 900s Yet, there was only one interval in the A.D. 650–920 period—specifically, A.D. 685–710—when agricultural yields would have been poor for an extended period (15–20 years). Even then, there was apparently sufficient agricultural potential in certain locales, and enough unclaimed land in these locales, that agricultural populations were able to persist in these areas. Numerous sites with construction dates in the droughty period of the A.D. 690s and early 700s were situated in the uplands close to Cahone and Dove Creek and the Mesa Verde cuesta (Wilshusen 1999a: table 6–1). So, although environmental opportunities may help to account for why the region was attractive to early farmers, the

climatic downturns of the late ninth century represent only one factor behind the disintegration of the early village settlement system in the tenth century.

REGIONAL POPULATION GROWTH, SETTLEMENT PATTERNING, AND COMMUNITY TRANSFORMATION, A.D. 650–920

Data and Constraints

For our review of existing survey and excavation data, we divided the central Mesa Verde region into four subareas: the upper reaches of the Great Sage Plain in the bean fields around Dove Creek; the western core of the region, which is the center of the recent Village Ecodynamics Project (VEP); the area of Mesa Verde National Park (MVNP), combined with the Ute Mountain Ute tribal lands; and the uplands in the east drained by the Mancos and Dolores rivers. There is a remarkably strong survey database for this region that covers 13–15 percent of the total area (Lipe 1999b:405; Varien et al. 2007:274). The temporal classification schemes and assumptions about structural and site use life vary somewhat from data set to data set, yet overall the early Pueblo site data are surprisingly comparable. Many early residential communities and villages are now only visible as diffuse artifact scatters because their surface remains have been cleared to make way for agricultural fields or housing developments; nevertheless, by experimenting with different analytical methods we have been able to use the intensive block survey results in combination with limited testing or excavation data to estimate population for subareas and for the region as a whole.

After a brief discussion of the coverage and data issues for each of the subareas, we summarize our regional population estimates for five time periods. Thereafter, we discuss how site layouts and regional settlement patterns changed from A.D. 650 to 920.

The upper reaches of the Great Sage Plain are the northernmost subarea of the region and are characterized by fertile upland soils and piñon-juniper woodland. This upland area has been historically used for dry-farming pinto beans, wheat, corn, sunflowers, and rapeseed. Although the University of Colorado (1960s) and Paul Martin (1930s) have surveyed large areas west of State Highway 491, the results of these surveys only provide an impressionistic, rather than a quantifiable, view of the area, given the very limited records we have of this work. The main quantitatively useful surveys in this area in the last decades consist of large-scale linear right-of-way reconnaissance and excavations (e.g., McNamee and Hammack 1992), and graduate student research (Coffey 2004, 2006) targeted at specific research problems. Given the lack of large block surveys, estimating the number of sites in this locale with precision is difficult for many periods, yet reasonably good population estimates can be suggested for late Pueblo I–early Pueblo II because a significant portion of the prehistoric population appears to have concentrated in and around well-documented community centers, which were some of the last villages in the region in the early tenth century and which were the primary focus of Coffey's recent survey.

A substantial portion of the southwest quadrant of the region is covered by the recent VEP study area (Varien et al. 2007), which has had some of the largest, most thorough, and quantitatively useful archaeological block surveys in the central Mesa Verde region. Yet, even in this study area, limited data for many surveyed late Basketmaker–early Pueblo sites require novel methods (Ortman et al. 2007) to estimate their population histories. Ortman and colleagues used excavated site data from 36 well-dated and well-documented site components falling between A.D. 600 and 920 to calibrate the relationship between surface evidence and excavation results. This calibration allowed them to estimate the range of occupation for less well-dated sites with limited survey data. Momentary population estimates for sites were calculated by taking the component population estimate for the whole period, which might be up to 125 years long, and multiplying it by the fraction produced by site occupation span (ranging from 8 to 28 years, depending on time period and site type) divided by the total length of the time period to which the component was assigned. The VEP study area has been extensively researched over the last three decades, and

these estimates are probably the most accurate and precise of any of our population estimates.

Mesa Verde National Park is the most intensively surveyed area of any in the region. Past MVNP data, however, were of limited utility because of the use of the Roberts (1935) chronological system, which combines sites dating to Pueblo I and II (A.D. 750–1150) into a single time period termed Developmental Pueblo. Recent resurveys of areas in the park that have burned in the last two decades resulted in the reanalysis of previously documented sites and the discovery of additional sites. These burned areas cover a substantial portion of those sections of the park where early Pueblo sites are common and the resurvey data allow us to distinguish Basketmaker III, Pueblo I, and Pueblo II assignments from one another and incorporate a much more detailed set of site descriptive data into our analyses (Eininger 1990; Ives et al. 2002; Kleidon et al. 2003; Kleidon et al. 2007). A total of 350 Pueblo I components have been documented in the park. The only areas missing new survey data are the North Escarpment and the southern portions of Park and Long mesas, and earlier surveys suggest neither of these areas was intensively inhabited in early Pueblo times. Site occupation ranges were based on tree-ring date construction estimates or other chronometric measures when available, but for most sites components were assigned using the chronological framework of changes in pottery complexes developed by Wilson and Blinman (1995; see also Pierce et al. 1999). Total site population was estimated using a measure of roomblock length (Wilshusen and Blinman 1992), and momentary population was calculated by multiplying this population estimate by component occupation span divided by 25 (a generation's worth of years).

The Ute Mountain Tribal Park (UMTP) lands south of the Mancos River and the MVNP are similar to the northwestern area of the central Mesa Verde region in that they have only been investigated via linear surveys (Farmer and Emslie 1976), graduate student research (Wilshusen and Blinman 1992), and early, but still very important, area surveys (E. H. Morris 1939). Based on relatively comparable densities of early Pueblo sites recorded in the survey areas of the UMTP and the MVNP, as well as almost equal acreages in mesa tops with good agricultural potential and access to water, we have chosen to double the population estimates for MVNP to estimate the total population for both Mesa Verde and the Ute lands to the south of it. We hope to see extensive and rigorous survey work in this area in the near future.

The eastern uplands along the upper reaches of the Dolores and Mancos rivers, Lost Canyon, and Summit Ridge are at the upper extreme of where early Pueblo residential sites are feasible as agricultural settlements. Only limited right-of-way (Riches and Biggs 1983) and Forest Service surveys have been conducted in this area. Our population estimates for this area are clearly based on limited data, but our sense is that early Pueblo population in this locale contributes only a small fraction to the regional total. Again, this is an area where we hope to see targeted surveys in the future.

The population estimates for two of the subareas, the VEP study area and the Mesa Verde cuesta, were calculated on the basis of excellent survey sample data and reasonable assumptions and methods as described above (Table 2.1). The

Table 2.1. Central Mesa Verde region population estimates, A.D. 600–920

	Population Estimates by Date				
Central Mesa Verde Subregion	*A.D. 600–725*	*A.D. 725–800*	*A.D. 800–840*	*A.D. 840–880*	*A.D. 880–920*
Upper Great Sage Plain	< 250	500	< 250	< 250	1,000
VEP Study Area (Great Sage Plain)	1,826	1,955	5,013	6,181	2,223
Mesa Verde cuesta and Ute Mountain tribal lands	642	1,496	2,226	1,088	830
Eastern uplands	500	750	1,000	1,000	500
Total	3,218	4,701	8,489	8,519	4,553

other three subareas, the upper Great Sage Plain, the Ute Mountain tribal lands, and the eastern uplands, lack the precision of our better-surveyed areas, and the population estimates are in increments of 250 people, ranging from less than (<) 250 people to 1,000 people. Although our estimates in these peripheral areas can certainly be improved, they almost certainly represent conservative totals and slightly underestimate the total populations of the peripheries.

There is scant evidence of occupation in the central Mesa Verde between A.D. 375 and 575 (Wilshusen 1999a:167; Varien et al. 2007:283). Thus, the fairly substantial population estimated in Table 2.1 for the A.D. 600–725 period must represent a substantial and rapid colonization of the area in the late sixth and early seventh centuries (Varien et al. 2007), combined with an explosive growth rate made possible by agricultural innovations (Kohler and Glaude 2008). The overall trend seen in the population data is one of rapid growth beginning early in the seventh century and continuing until the mid-ninth century. Thereafter, there is a dramatic decline in population through the tenth century. This trend is very consistent with, but not quite as remarkable as, the regional population changes plotted by Wilshusen and Perry (2008: fig. 6), which trace population growth from A.D. 375 to 975. They plot negligible population in the central Mesa Verde for A.D. 375 to 575 and calculate rapid growth of population to a peak at about A.D. 875. Thereafter, they suggest a much more dramatic population fall to less than 1,000 people in the whole region in A.D. 975. Varien and others (2007: table 4) calculate a more moderate—but still marked—decline in momentary population to 1,733 in the Great Sage Plain subarea between A.D. 920 and 980. Given the likelihood that population is not restricted to this subarea in A.D. 975, it is reasonable to suggest a momentary regional population of at least 2,000 and possibly 2,500. Even this estimate shows a decline of 340 percent from the population peak a century before.

When we compare our present estimate with previous calculations, the similarities are conspicuous. Wilshusen (2002:116) used a selective survey sample and employed somewhat simpler and less precise methods to calculate an early Pueblo population maximum of 8,629 people for the central Mesa Verde region for A.D. 840–880. He did not have the large and well-calibrated site samples of the VEP or Mesa Verde study areas, yet it is striking that his total is remarkably close to the 8,519 estimate offered here. Wilshusen and Ortman (1999) suggested a greater Mesa Verde regional population of at least 10,000 people for A.D. 860, but their estimate included both the eastern and western Mesa Verde regions, as well as the central region. The agreement in the different regional population estimates is noteworthy, given the differences in data and enumeration methods. The bottom line is that we think our estimate of total population is accurate and even somewhat precise.

Archaeologists have increasingly argued that pit structures remained the central architectural space in Mesa Verde region households throughout the ancestral Pueblo occupation (Lekson 1988; R. R. Lightfoot 1994; Lipe 1989; Ortman et al. 2007). Others have argued this norm was overturned at certain times and in certain settings prior to A.D. 1300 (Bernardini 1996; Glowacki 2006). For example, Wilshusen (1999b:214) argues that in many early villages, the locus of the household shifted to rooms within the surface pueblo and that pit structures took on special functions and may have been shared by multiple households for communal activities (Wilshusen 1989). He suggests that extended households—with an average of seven persons per pit structure—may have been the norm at hamlets, and nuclear households—with an average of five persons per individual room suite (a living room with associated storage rooms)—may have been more usual in many of the larger pueblos (Wilshusen 1999b:214). Although regional archaeologists disagree on how the locus of the household is defined and how to enumerate it, this appears not to have hindered our ability to produce relatively comparable population estimates using slightly different assumptions. We hope to investigate this issue in future research and to improve both our understanding of early Pueblo households and population estimation in the process.

Changing Patterns of Residence and Community

There are a number of ways that residences and communities changed during the three-century period examined here. For convenience, we break this period into four sequential phases that capture significant settlement and architectural changes: (1) an initial period between A.D. 650 and 725 in which households increasingly reorganized to support more people for longer periods of time, depending primarily on stored agricultural goods; (2) a period between A.D. 750 and 810 of tremendous innovation in residential site design, during which the first villages in the northern Southwest and a rapidly increasing number of multihousehold surface pueblos, which are essentially the earliest "unit pueblos" (Prudden 1918), appeared; (3) a time of rapid growth between A.D. 810 and 880, during which villages became the primary population centers; and finally (4) a period of significant emigration and population decline that began during the A.D. 880–920 interval.

The changes in site structure, population growth, and social organization we outline here did not occur simultaneously or uniformly across the region. There was considerable geographic and temporal variation in the appearance of houses, villages, and communities. Some of this diversity, such as the novel site plans of early villages and the distinctive engineering solutions associated with roofing ever larger pit structures and great kivas, was due to innovative cultural behavior. Other variations, such as in pit structure shapes and associated architectural features, appear to represent distinct cultural styles or preferences. Differences in site layout, public architecture, and even site abandonment may correspond to historical as well as cultural variation in communities, which is all the more striking because these communities were often within sight of each other. The patterns we summarize here are general trends or important innovations that often foreshadow later changes.

A.D. 650–725: Innovations in Family Living

Although the earliest settlers to the region probably arrived in the late sixth century, it was not until the mid-seventh century that significant population levels were achieved (Varien et al. 2007:283; Wilshusen 1999a:167–170; Wilshusen and Perry 2008:426). Over the following 70 years, dramatic changes took place. There was a measurable intensification of long-term storage of foodstuffs (Gross 1992), a diversification and specialization of food processing tools and facilities (Wilshusen and Perry, Chapter 10), an ever-increasing size in the average residential site, and, in the regions just to the west and east, there is evidence of community, or possibly intraregional, gatherings at great kivas or dance circles (Wilshusen, Ortman, and Phillips, Chapter 11). One of the most critical outcomes of these changes was a reshaping of the household. By the end of this period, the basic social unit of ancestral Pueblo culture—whether we call it an extended household, a unit pueblo, an inter-household suite, or later a kiva suite—was architecturally evident.

By A.D. 675, many people in the central region lived in year-round residential sites. These sites were typically made up of one to two compounds of residential structures, food storage pits, work areas, and other features within a fairly well-defined space that was sometimes partially or completely enclosed by a fence or stockade. Motsinger and Chenault (2004) have suggested African residential compounds as a reasonable ethnographic comparison for these sites, and Flannery (2002) has argued that courtyard sites in Mesoamerica and Southwest Asia represent extended household residential sites. These scholars and others have suggested a variety of reasons for this shift to larger households, including changes in marriage patterns (monogamous to polygynous), increased labor needs for more extensive or intensive agricultural practices, greater demand for agricultural land and stored goods, and the need to protect one's holdings, and increased disparities in productive or reproductive potential that fosters size and status differences among households.

Exemplary sites from this era include the Stevenson site (5MT1) and Dead Dog Hamlet (5MT11861), which both have construction dates in the A.D. 670s and 680s (Chenault 2004; Mitchell 2009). They have multihousehold residential compounds with numerous semisubterranean storage

structures, large residential pit structures, and work areas within a relatively tightly enclosed, oval or circular space, with a maximum diameter in the range of 32 to 48 m (Figure 2.2). The semisubterranean pit structures typically had 35 to 100 m^2 of floor space. This included a main chamber and a smaller antechamber, each built from local materials and covered with the earth excavated from the subterranean portions of the structures. We estimate the use-lives of these structures at 12–15 years (Ahlstrom 1985:633–639; Schlanger 1988:783; Wilshusen 1988a:674–675), so even with the one or two remodeling episodes that are periodically documented at these early sites, the average site use-life is probably within the 8- to 28-year range suggested by Varien and others (2007: table 3) for residential sites in the A.D. 600–725 time period.

An examination of a number of the excavated examples of these early sites demonstrates that each main residential compound area contained at least one to three contemporary domestic use areas, with hearths, storage and grinding facilities, and other household items. These household domestic areas are always associated with the main chambers of the largest pit structures, are usually associated with secondary, smaller pit structures (if they are

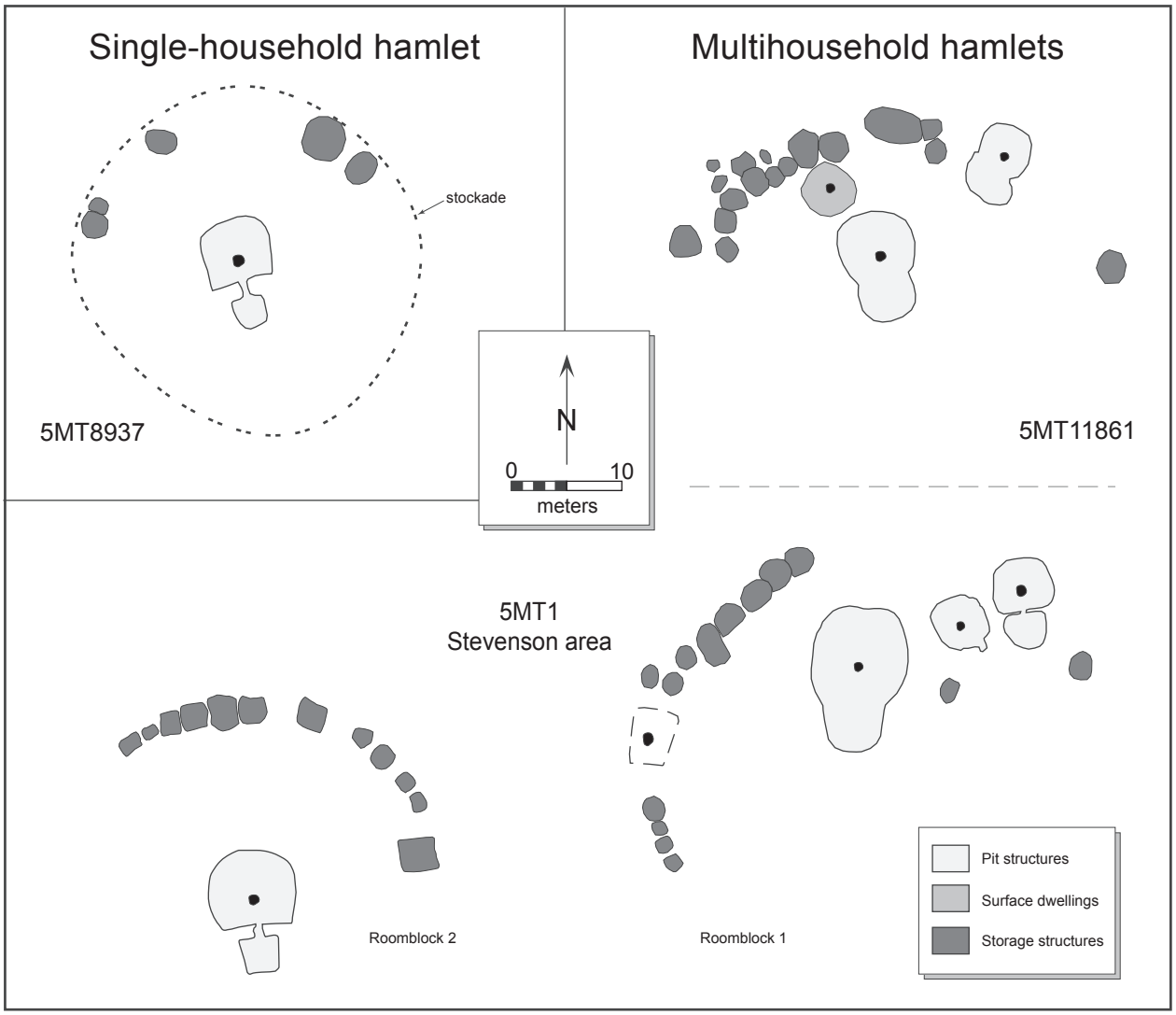


Figure 2.2. Examples of two large hamlets, Yellow Jacket (5MT1), Stevenson site and Dead Dog Hamlet (5MT11861), and a single-household hamlet (5MT8937). All sites were constructed and occupied in the A.D. 650–720 period and site plans are portrayed at the same scale.

present), and are sometimes even associated with pit structure antechambers, which implies that it was not unusual to have more than one domestic unit associated with a residential compound. The most common residence type for this time period, however, is a single household hamlet. Of the 38 well-dated and well-excavated early hamlets from this era, slightly more than 60 percent were single-household hamlets (Wilshusen 1999b: table 6-1).

Single-household sites such as 5MT8937 (Errickson 1995) can have relatively simple site assemblages or can be nearly as complex as the large hamlets discussed earlier (Figure 2.2). Some have stockades, some have immense pit structures containing unusual floor drum sipapu features, yet all the single household sites are residences regardless of the types of features present. The main distinction appears to be the number of different domestic use areas (i.e., areas with domestic features and artifacts typical of food processing) associated with a residential compound. In social terms, the difference might be between a single-stem, or nuclear, household with a single set of domestic activity areas and an extended household with consanguineal and/or affinal family members sharing a common store of goods, but with somewhat distinct living spaces.

Our understanding of community organization is worse than meager for this late Basketmaker period. Birkedal (1976) suggested that the primary social unit for Basketmaker III may be equivalent to a primary subsistence band of approximately 25 people or fewer, but there is much in the ethnographic record to argue against this idea. It is difficult to see a growing agricultural population, especially of recent immigrants, primarily being organized at such a minimal level, even for daily interactions. For example, the high rate of population growth (Wilshusen and Perry 2008) and the need for wide-ranging economic exchange to counter agricultural risks (Kohler and Van West 1996), among other reasons, might necessitate a more extensive network of social relationships among the local inhabitants of a neighborhood.

Yet our understanding of early social organization is additionally challenged by our lack of sites that are well dated to between A.D. 725 and 750 (Wilshusen 1999a: table 6-1; 1999b: table 7-1). In most other archaeological regions, a possible 25-year gap in well-dated sites would not be mentioned, but we have such a rich data set that we need to note this. Potential communities dating after A.D. 750 are much more obvious, so if we had a better sense of the settlement organization immediately prior to this period, it would aid our search for communities dating to A.D. 650–725. We believe the region continued to be occupied in the 25-year interval between A.D. 725 and 750, but we have little knowledge of the details. During the subsequent A.D. 750–810 period, however, there was clearly a significant reorganization. By A.D. 780, at least 14 regional, or community, ritual gathering places with either great kivas or large dance circles had been constructed in either the eastern or western Mesa Verde region. These structures may be the earliest examples of community centers. In addition, there are at least 10 such sites south of the San Juan River (Wilshsuen, Ortman, and Phillips, Chapter 11).

A.D. 750–810: Early Villages and Great Kivas

During this period, many changes that exemplify key characteristics of the early Pueblo transition occurred in the central Mesa Verde region: a rapidly expanding regional population, dramatic changes in residential architecture, the first true villages in the northern Southwest, and regional ritual and community centers marked by great kivas. The most fundamental architectural change of this period is the rapid, almost abrupt, shift to having substantially more roofed floor area in surface architecture than in the associated pit structures at residential sites.

Although the sudden appearance of villages was a stunning innovation—with little to foreshadow it—some of these early villages, such as Martin Site 2, appear to represent five or six large hamlets analogous to House 3 in the Badger House Community (Figure 2.3), joined together to form two or three large roomblocks with associated pit structures. Yet, these villages were more than a series of interlocked hamlets. Early villages were also often associated with, or near, a contemporary great kiva. For example, there is an early great kiva

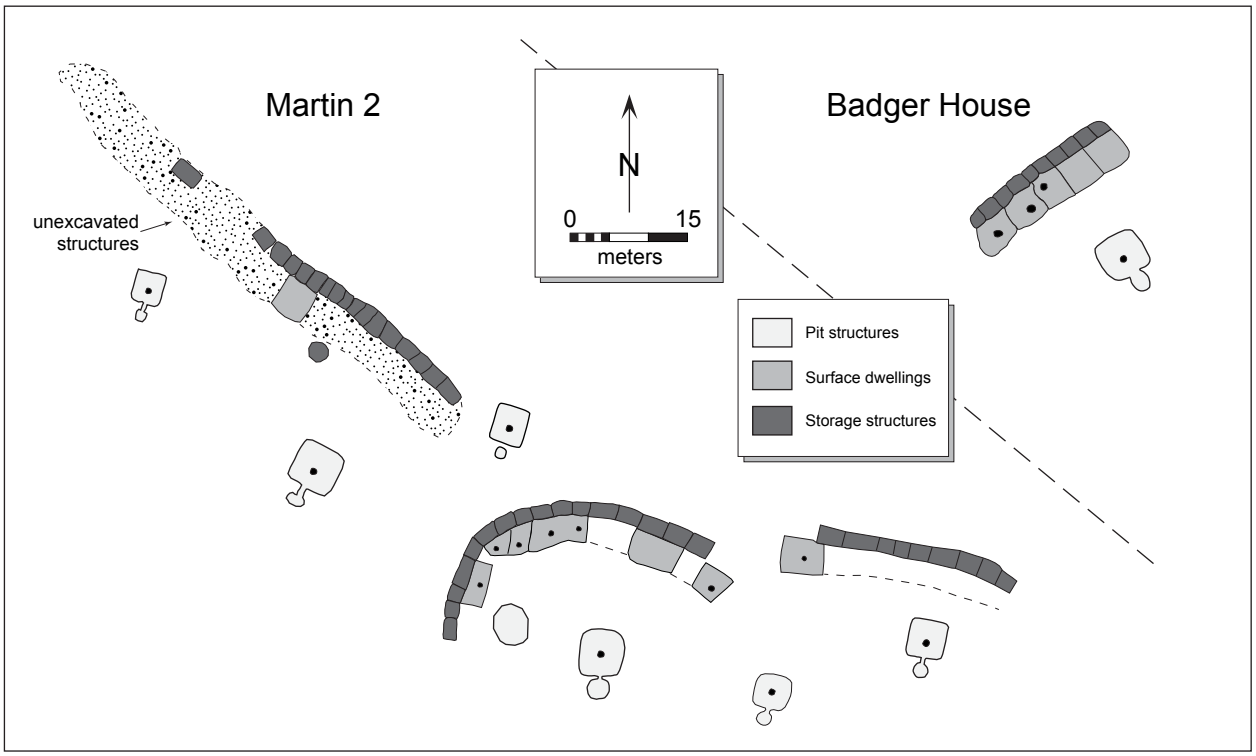


Figure 2.3. Plan maps of Martin Site 2 (5MT2107), an early village near the old town site of Ackmen, Colorado, and House 3, a hamlet at Badger House Community on Wetherill Mesa, Mesa Verde National Park. Both sites have tree-ring construction dates which place their construction at approximately A.D. 760–780.

or dance circle 1 km northeast of Martin Site 2 (5MT2107) at the edge of 5MT2108 (Martin Site 1), a later village. This public ceremonial structure is on a prominent ridge with an impressive overlook of the Cahone drainage. Based on its location outside the adjacent village at 5MT2108, its non-masonry construction, and its associated ceramic debris, it potentially predates the village, which was built around A.D. 860. Five other early villages dating between A.D. 750 and 810 in the central region also have great kivas built within the village areas or nearby.

Prior to the occupation of these early villages, great kivas—places for community rituals—were uncommon in the central Mesa Verde region (Wilshusen, Ortman, and Phillips, Chapter 11), so their appearance within or near villages is a notable change. It is unclear whether evidence of community rituals dating to this period means that community rituals were largely missing prior to A.D. 750 or whether ritual performance simply became more visible with the construction of great kivas. In either case, it is striking that both villages and great kivas appeared at about the same time. This association is relatively short-lived, however, because after A.D. 810 the number of villages increased rapidly but the number of great kivas decreased.

There is presently no evidence of warfare in the central Mesa Verde to associate with early village formation. Yet the evidence of substantial violence in the eastern Mesa Verde region (Potter, Chuipka, and Fetterman, Chapter 4) and the presence of defensive citadel sites in southeastern Utah dating to this same period (Allison et al., Chapter 3) make it clear that the threat of violence did exist at the time villages were coming into being. The relative lack of evidence of violence to date is remarkable, given the wide range of pottery traditions, architecture styles, and associated cultural traditions evident in the archaeological record of this period.

There were many differences in the site plans, architecture, and occupational histories of early

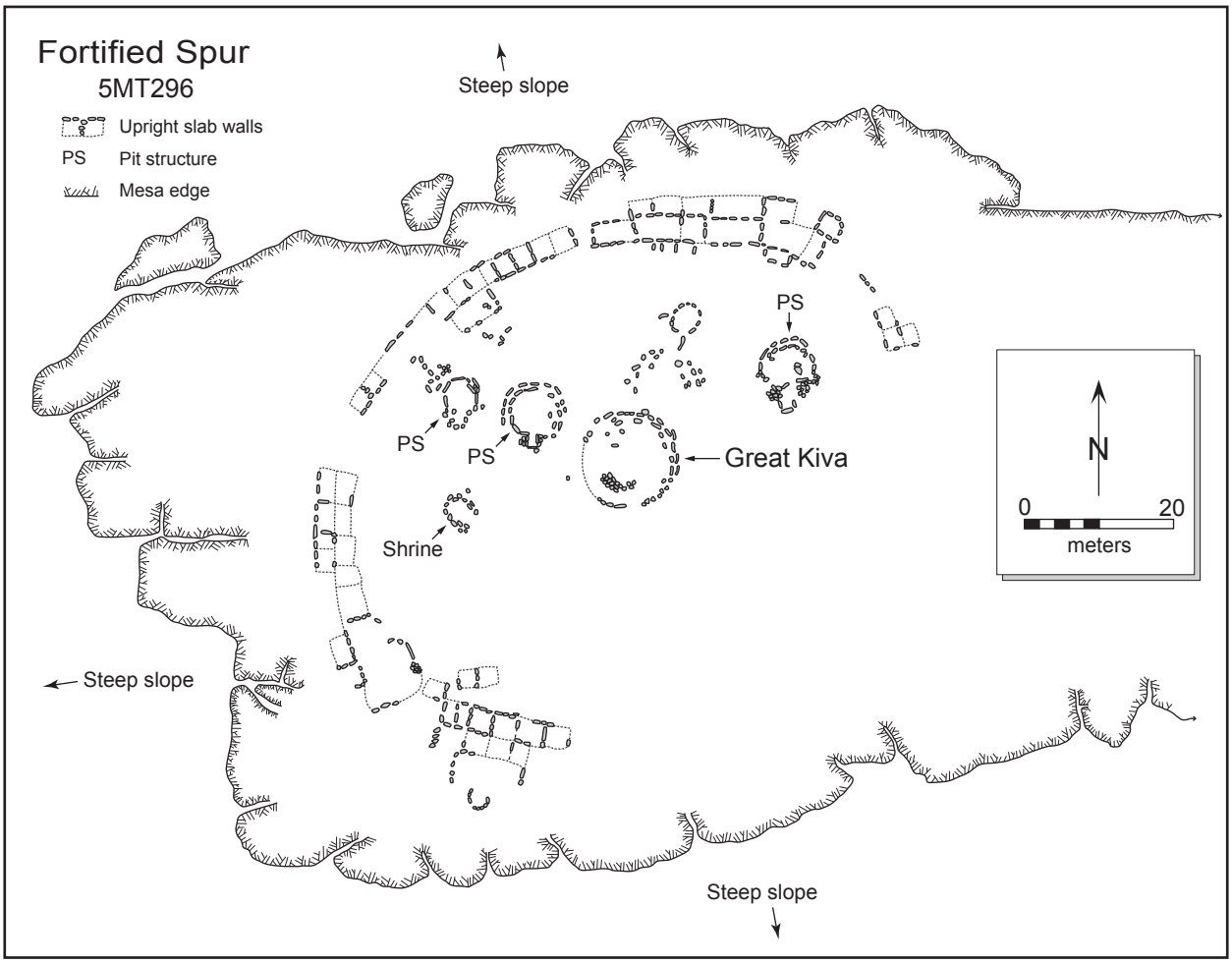


Figure 2.4. Plan map of Fortified Spur (5MT296), an early village situated on a point overlooking the mouth of Yellow Jacket drainage. Note circular shape of pueblo, in contrast to more rectangular shape of Martin Site 2. Also notice the presence of a great kiva in the center of the main plaza of village. Map courtesy of Crow Canyon Archaeological Center.

villages. A comparison of Martin Site 2 (5MT2107) in the central region with other contemporary early villages, such as Fortified Spur (Figure 2.4), Alkali Ridge Site 13 (Figure 3.5), and Sacred Ridge (Figure 4.10) and Morris Site 23 (Figure 4.9), reveals than none of them look particularly alike. Each represents a pioneering design with characteristics that would eventually be incorporated into many later villages; but as early versions of villages, these sites are more provisional than archetypal in plan. Site layouts ranged from rectangular to circular; architecture had varying ratios of space devoted to pit structures and surface rooms; some were built around great kivas, whereas in other villages the largest structures were oversized pit structures which were only one-half to one-quarter the size of great kivas. In the following period, this variety was quickly replaced by two basic village designs marking differing community organizations.

A.D. 810–880: Large Villages, Early Great Houses, and Peak Population

Between the early and the mid-ninth century, the total central Mesa Verde population peaked at approximately 8,500 people, with approximately 50 percent of this population living in large villages (Varien et al. 2007:284; Wilshusen 2002:118). Whereas in A.D. 760 there may have been only a handful of newly minted villages in the central region, by A.D. 860 there were at least 25, and

possibly as many as 40, nucleated settlements that each housed 70 to 300 people across a broad swath of the regional landscape. Hamlets of one to four households were still common, but it is striking that dispersed settlements appear to have been concentrated in different areas than the locales dominated by villages. These village roomblocks packed 10 to 15 households into the space that only 100 years before had been the average residential area of two to three households (Figure 2.5).

Momentary population estimates for the A.D. 725–800 and A.D. 800–840 periods suggest that population in the central region increased by over 80 percent as populations from the eastern and western Mesa Verde regions either declined or remained stable. Even if we accept relatively short population-doubling rates during these two time periods (Wilshusen and Perry 2008, Chapter 10), the magnitude of the population increase and the proliferation of nonlocal material culture in the central region both suggest that part of the population growth in this central area was due to immigration from areas to the east and west that were potentially losing population in the early ninth century. The ceramic types associated with the founding of some of the A.D. 810–880 villages include types found in the eastern (Rosa Black-on-white) and western (Abajo Red-on-orange and Bluff Black-on-red) portions of the greater Mesa Verde region. Wilshusen and Ortman (1999) argued that these population shifts led to the presence of at least two and possibly three different cultural groups in the central Mesa Verde. They contend that differences in the percentages of ceramic types associated with the founding of various villages, differences in village designs and public architecture, and variation in village abandonment modes combine to suggest a minimum of two historically and culturally distinct populations. Webster's (Chapter 9) restudy of sandals recovered from villages on either side of the Dolores River shows there were also fundamental differences in sandal construction on the two sides of the river, even though the habitations were contemporary with one another.

The two basic plans of mid-ninth-century villages (Wilshusen and Ortman 1999) clearly incorporated

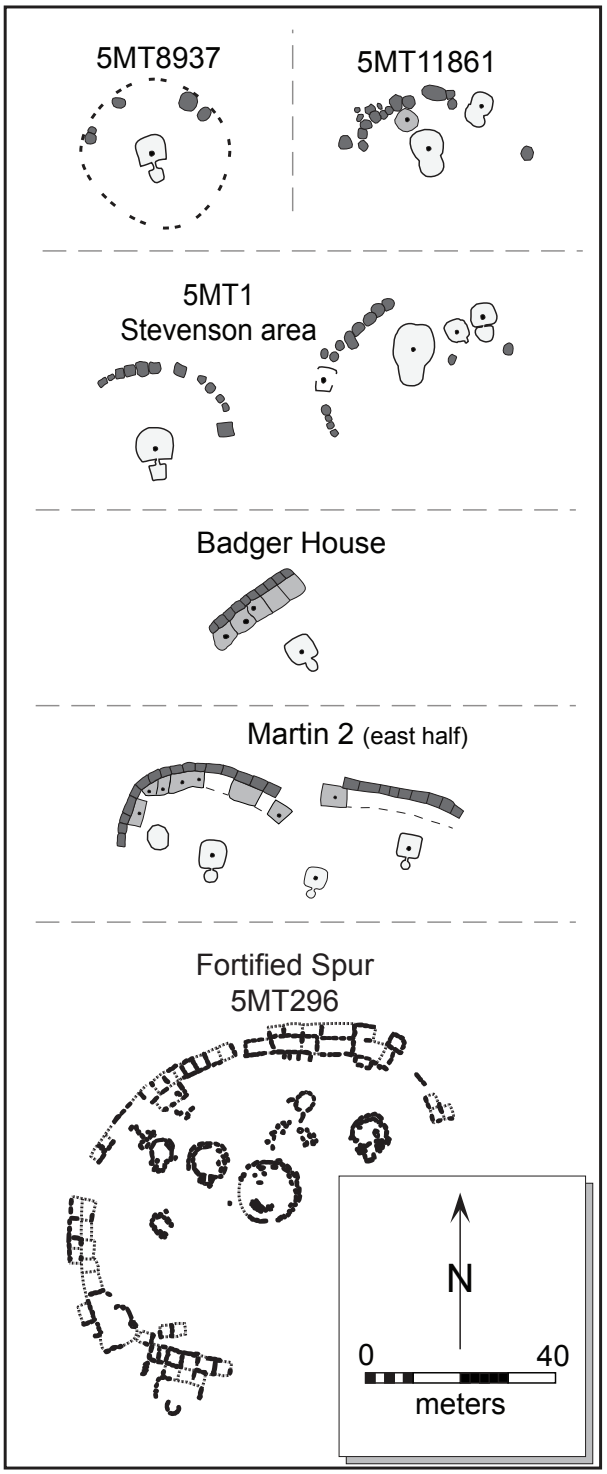


Figure 2.5. Comparison of changing site plans in the central Mesa Verde region between A.D. 650 and 800. Note that the area of the two- to three-household site of 5MT1 (Stevenson) is essentially the same as that of Fortified Spur, which probably housed 10 to 15 households.

elements of earlier village layouts. One such plan, exemplified by Grass Mesa Village on the east side of the Dolores River, is a multi-pueblo (or multi-roomblock) village consisting of a series of aligned or stacked roomblocks not unlike earlier plans such as that of Martin 2 (Figure 2.3). These villages likely grew up around earlier great kivas, but came to lack a clear ritual center once the great kiva fell into disuse. The other plan, exemplified by McPhee Village on the west side of the Dolores, incorporates one or more large, U-shaped great houses (Windes 2004) within the village layout. Small and large linear roomblocks surround this great house, but the U-shaped roomblock was clearly the cultural center of these villages. Close examinations of these villages have found evidence of different internal hierarchies within each community and a surprisingly close clustering of contemporary villages (Wilshusen and Ortman 1999: fig. 4, table 2). A key issue that remains to be resolved is whether there was a fundamental reorganization in the ways social units related to architectural units in these villages, or whether these villages represent a stringing together of extended family households (i.e., the units of hamlets) to form a nucleated community. Wilshusen, Ortman, and Phillips (Chapter 11) argue that there was a basic social reorganization of ritual and lineal influence within villages based on multiple lines of evidence.

Certainly those villages composed of linear roomblocks could be viewed as a series of extended households. Many ethnographically documented villages appear to stitch together disparate households using the fairly simple principles of dual organizations (such as moieties) to balance and distribute the social power of larger households and lineages throughout the community and create community solidarity (e.g., Tuzin 2001). The layouts of many—in fact, almost all—ninth-century villages betray symmetrical "dual" design elements. For example, at Morris 25 (Figure 2.6), which was constructed during the A.D. 870s, the two large groups of roomblocks are almost mirror images of each other, with a great kiva or circular roomblock in the center (Firor and Riches 1988). This pattern is even seen in some of the earliest villages, such as Martin Site 2 (Figure 2.3), with its two main roomblock and plaza areas.

Dual organizations may be basic institutions for assembling and organizing households or lineages into villages (Fowles 2005), but for people to be attracted into and identified with a particular village requires something far more charismatic and dynamic, or threatening, than the mechanical workings of a dual organization. In most ethnographic cases, villages assemble around ascendant leaders, protectors, or small organizing groups (STPs—"the same ten people" kind of group that is often found

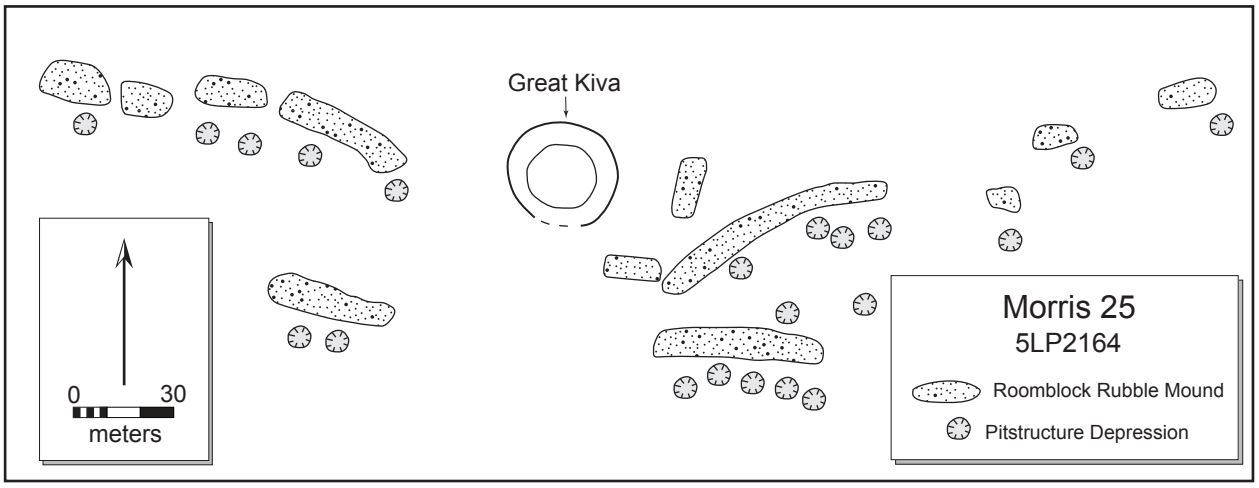


Figure 2.6. Morris 25, Site 5LP2164, a large Pueblo I village with construction dates in the A.D. 870s.

in small towns or communities). Unlike the rather diffuse histories and identities associated with pioneering communities comprised of farming hamlets, villages must quickly establish a deep-rooted social stability and clearly defined cultural identity if they are to avoid going bust. The daily problems and conflicts of hundreds of people living in relatively close quarters could rapidly get out of hand and require a more well-defined leadership than is found in dispersed communities. Thus, villages were much more than a string of hamlets, and the tricks of mechanical solidarity that might be useful to arrange households and lineages within a village using dual organization principles were probably insufficient to sustain themselves. A well-defined and charismatic leadership is needed to cope with the new problems created by packing so many people into a relatively small space.

At present, our best guess is that religious discourse, ritual practice, and emergent socio-religious hierarchies were the means whereby early village leadership emerged and villages were united. The ritual performances and discourses that previously drew together intermittent gatherings of widely scattered groups at solitary great kivas likely played a role in the formation of some villages (Wilshusen, Ortman, and Phillips, Chapter 11) since great kivas were intimately connected with their early construction and expansion. Early village leaders would have built on a rich cultural tradition of community ritual performance, symbols and meanings, and material exchanges in large public spaces as they formed the social institutions of early villages. Ritual performance, religious aesthetics and concepts, and even ritual landscapes must have been used as potent means of drawing people into village settings and creating and reinforcing a distinct cultural identity as a community. In late Basketmaker times, community may have consisted of a complex, difficult to identify network of relationships, and the annual gathering spot—whether a dance circle or a great kiva—may be our only sure means of identifying the cultural center of a community's landscape. In contrast, by the ninth century, villages appear to have become the center of both daily domestic life and community religious performances, as is evidenced by the presence of great kivas or oversized pit structures in the center of a key roomblock within the village. It must have been a brave new world in which the community's "house" got much bigger.

Yet, not all early villages have great kivas. Instead, in many of these villages we find U-shaped roomblocks (Figure 2.7) with a distinctive set of features. These U-shaped roomblocks typically have greater storage space (Schachner 2010), more substantially constructed rooms (Windes 2004), distinctive oversized pit structures with special ritual features (Wilshusen 1986a, 1989), and well-developed middens to the south of the plaza. In a few cases, the plazas are enclosed by low walls to create a D-shaped outline for the site. Scholars have progressively come to the conclusion that these roomblocks should be regarded as early great houses that prefigure later Chacoan great houses (Van Dyke 2007; Wilshusen and Van Dyke 2006; Windes 2004).

In these early great houses, it appears that the "functional" elements of ritual that work in service to a community's sense of solidarity and well-being were also turned to a more "materialistic" emphasis, thereby allowing emergent leaders to accrue power, resources, or positions within an increasingly ranked or stratified society. There is positive evidence of an intensification of ritual in these villages, with ceramic evidence, faunal debris, and features interpreted as the debris or trappings associated with religious performance and feasts (Blinman 1989; Potter 1997; Schachner 2001; Wilshusen 1986a). Based on ethnographic analogy, Wilshusen (1989) argued that these oversized pit structures were likely controlled by the leadership of either a community religious society or an important corporate group larger than a household or extended household. He argued these large pit structures had become sufficiently specialized that they no longer function as residences. This very basic proposal has been amplified considerably by the evidence of the last decade in which researchers have recognized the importance of the large U-shaped roomblocks, which enclose these oversized pit structures.

The most well-known and most completely excavated example of an early great house is the

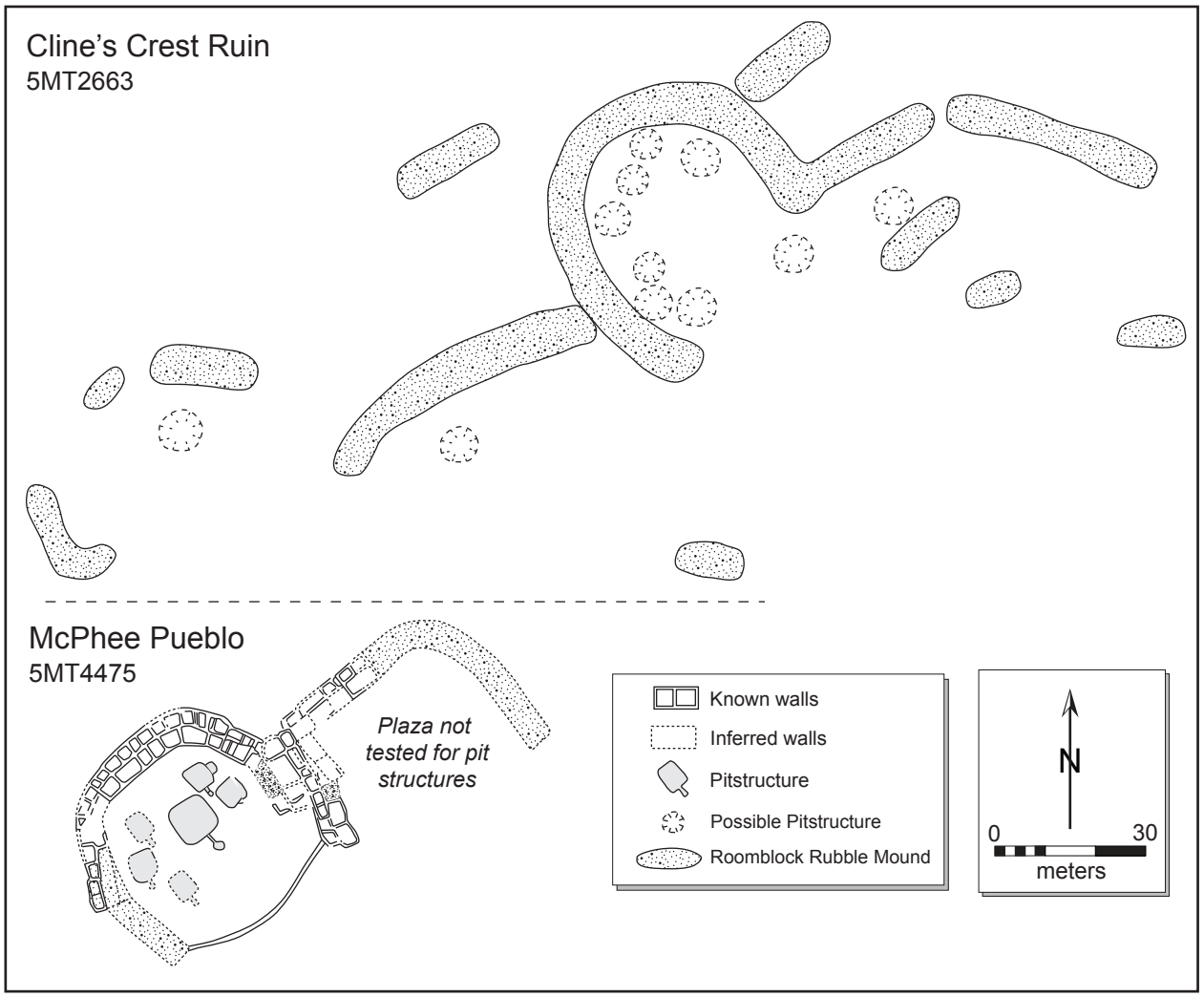


Figure 2.7. Cline's Crest Ruin, Site 5MT2663, a Pueblo I village 2 km north of McPhee Village, Dolores, Colorado, and McPhee Pueblo (5MT4475), a partially excavated pueblo that is part of a large village, for comparison. Note that the possible pit structure depressions at Cline's Crest Ruin were not confirmed by auger testing and probably do not accurately represent the size or number of pit structures at the site.

U-shaped roomblock named McPhee Pueblo (Wilshusen and Ortman 1999: fig. 5; Windes 2004). There are a number of other well-documented, large U-shaped roomblocks, such as Cline's Crest Ruin (Figure 2.7), which were contemporary with McPhee, but we infer their organization based on surface survey maps and, in some cases, limited testing. A critical element in the argument for early great houses is that the control of ritual performance and village identity is centered in the oversized pit structures or plaza of these U-shaped roomblocks. The U-shape of the pueblo both encloses and in a sense focuses these activities. The special features—altars, foot drum sipapu (floor vaults), and shrines—associated with the oversized pit structure, as well as its huge floor area, allow for many more people to participate in the most sacred aspects of ceremonies, but even as large as it might have been, an oversized pit structure still considerably restricts participation when compared with the considerably larger and more openly positioned great kivas and dance circles (Figure 2.8).

We still do not understand many of the details of these early villages, and early village formation,

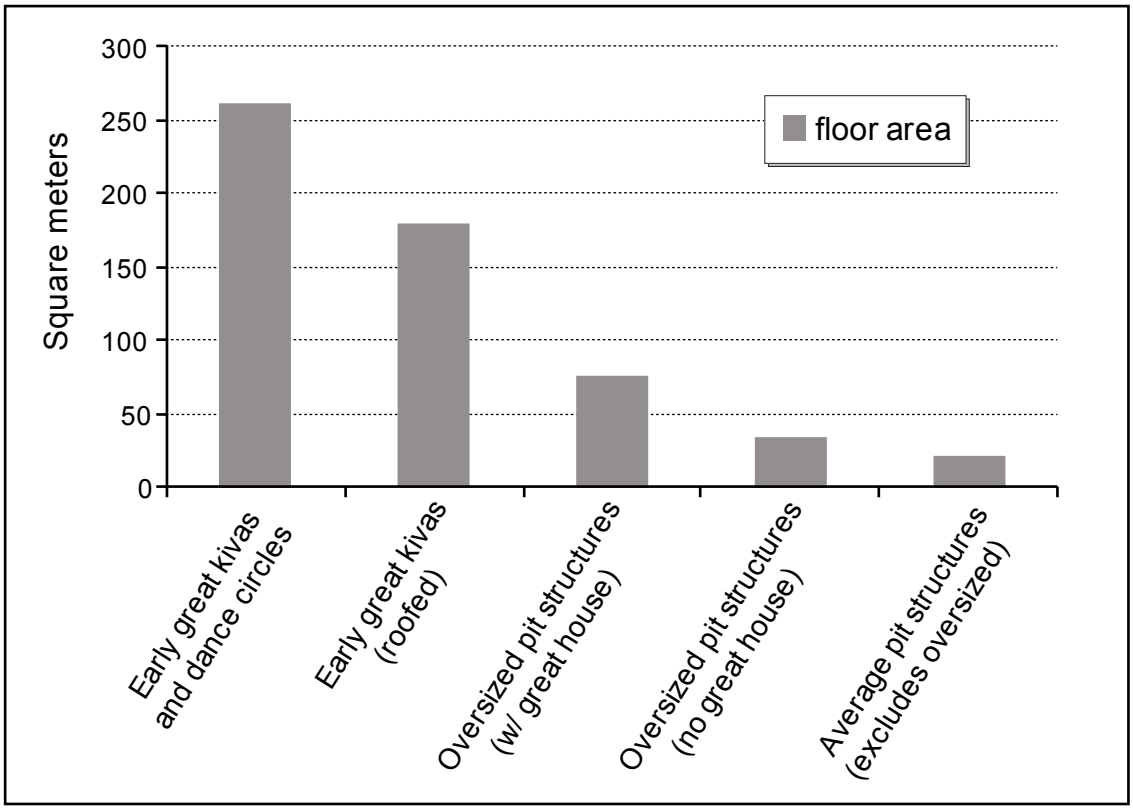


Figure 2.8. Floor areas of early Pueblo great kivas, dance circles, and pit structures.

maintenance, and abandonment all deserve much more investigation. Several important key framing issues for future research on these villages are clear, however. First, there are fairly distinct patterns in village design, construction, and organization, with some villages tied to a model almost directly derived from great kiva ritual gatherings, where ceremonial and economic power do not appear to have been concentrated in one locus in the village, and another model in which distinctive persons, lineages, or sodalities emerged as critical leaders and possibly became controllers of important ritual, economic, and political matters. Second, almost all early villages show some signs of having a symmetrical, or dualistic, design in the layout of their roomblocks, plaza areas, and middens. In villages that began around a great kiva, it is not uncommon to have two complementary clusters or lines of roomblocks, pit structures, and middens. Dual organization can even be seen in early great houses, such as McPhee Pueblo, which is actually two U-shaped roomblocks joined together. The oversized pit structures associated with great houses sometimes have paired foot drum sipapus (or floor vaults). These aspects of the built environment reinforce the importance of balance in meeting the needs of social groups within these early villages. Third, there is a clear mix of different immigrant histories and cultural preferences that may account for some of the subtle architectural and artifactual variation within and among villages, and must certainly account for some of the differences between villages.

Two important points remain to be made for this period in which early villages changed the social and ecological landscape of the central Mesa Verde so dramatically. One is that, despite our emphasis on the differences we can document in the histories, architectural designs, and fundamental organizing principles of well-documented villages dating to this period, it is striking how similar villages became

through time. Although Wilshusen and Ortman's (1999) argument about the fundamental differences between east- and west-side villages along the Dolores River has been widely cited—and somewhat accepted—the different villages were so similar in most respects during their final decades of occupation that these patterns initially escaped the attention of the many exceptional archaeologists who excavated these sites. It is remarkable that the distinct variations in the village designs of sites dating to A.D. 775—such as Alkali Ridge Site 13, Sacred Ridge, Morris 23, and Martin Site 2—were transmuted into very subtle, almost indistinguishable differences among later, A.D. 800s villages.

One of the most interesting patterns to emerge from this survey is that the marked variation in ceramics, architecture, and site design that existed in A.D. 775 was homogenized as villages spread across the central Mesa Verde landscape. In fact, the old saying about Pueblo I was that these sites were so similar that they almost looked like they were made with a "cookie cutter." By A.D. 875, villages had been so transformed and homogenized as to foreshadow the basic organization of Chacoan great houses. Sites such as Martin Site 1, with its massive masonry roomblock construction, its unusually early masonry-lined great kiva enclosed within a roomblock plaza, and its relatively small size for a village (Figure 2.9), appears remarkably similar to Chaco-era great houses constructed some 150 years later.

A second point is that, based on the survey and excavation data, there must have been hundreds of hamlets that were contemporary with the peak of village aggregation between A.D. 840 and 880 (Varien et al. 2007: table 3; Wilshusen 1999b: 234). Although we do not focus on these hamlets here, studies such as Ricky Lightfoot's (1994) analysis of the Duckfoot site (5MT3868) are fundamental to any discussion of this period. As noted earlier, the majority of scholars would argue that the household organization evident in hamlets is essentially the same as that within villages, but we suggest that the nature and size of the household may have been transformed at least in the U-shaped roomblock, thereby allowing the possibility of great "houses." Most accept that early villages were difficult to hold together over multiple generations. Construction at villages decreased rapidly by the end of this period, foreshadowing significant population decline in the subsequent period.

A.D. 880–920: Population Decline and Reorganization

The period between A.D. 880 and 920 was a tumultuous one during which many villages and hamlets were abandoned. The remarkably small number of sites securely dated to this period (Coffey 2004: table 3.1) are concentrated in the uplands close to Dove Creek in the north, and at the southern edges of the region. Otherwise, almost all the large villages associated with the previous period were substantially or totally abandoned by the third decade of the tenth century. The abandonment of substantial portions of McPhee and Grass Mesa villages offers a stark contrast in abandonment modes. Violent sacrifices of individuals in smaller pit structures and the fiery ceremonial destruction of oversized pit structures are notable abandonment modes at McPhee; in contrast, pit structures at Grass Mesa Village were only destroyed several years after they had fallen out of use (Wilshusen 1986a). The violence appears limited in its scope and appears to be the result of internal conflicts within the village, rather than warfare. In a number of cases, heavy or bulky items were left in abandoned structures at McPhee; Schlanger and Wilshusen (1993) argue that this pattern reflects an anticipation of long-distance migration, which would necessitate the abandonment of cumbersome items. This pattern is not apparent at Grass Mesa, however, and suggests that the inhabitants of this village planned to move a shorter distance, at least for their initial move. Perhaps emigration between A.D. 880 and 920 was disproportionately of the ethnic group that had constructed and used U-shaped roomblocks.

The regional population declined by almost half during the A.D. 880–920 period. After A.D. 920, the population was reduced almost by half again, such that the total remaining population by A.D. 980 is estimated to have been between 2,000 and

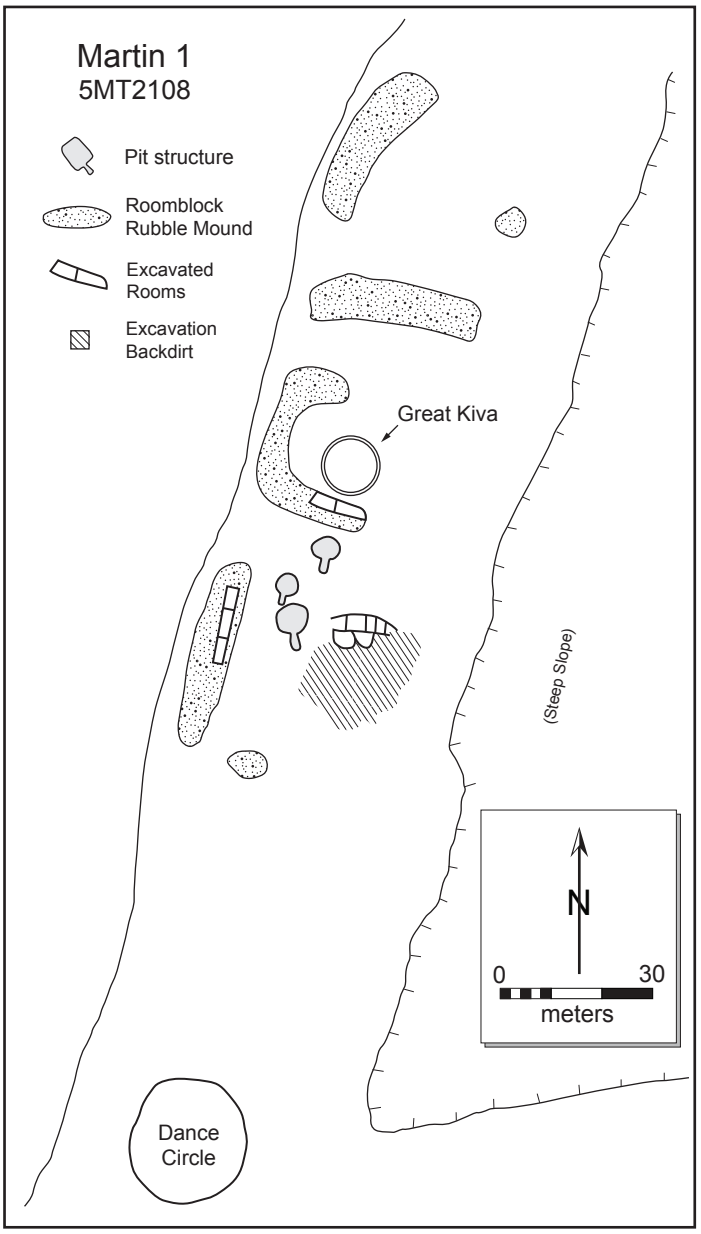


Figure 2.9. Site 5MT2108, Martin Site 1, a late Pueblo I village (A.D. 850–880) on a ridge overlooking Cahone Canyon. Note the masonry great kiva built into the center of a probable early great house. The area has not yet been auger tested to be able to map the likely locations of unexcavated pit structures. Overburden from excavations in 1938 obscure the extent of some of the external roomblocks and midden areas. The dance circle at the southern edge of the site appears to predate the main village area.

2,500 (see Varien et al. 2007; Wilshusen 2002). This decline is all the more remarkable when one realizes that this remnant population was smaller than the original colonizing population for the A.D. 600–725 period, which we have estimated to be 3,200.

No doubt, additional sites will be found to aid us in understanding the tenth-century occupation of the Mesa Verde region, but unless we have totally misjudged the ceramic sequence and site survey profiles of this period, the population decline between

A.D. 880 and the mid-to-late tenth century is significant and largely due to emigration from the area. Population of course increased again in the eleventh century to rise to another peak in thirteenth century in what is in some ways a repeat of the seventh- to tenth-century population expansion and disintegration we have examined here.

A variety of reasons have been offered over the last 15 years to account for the tenth-century population crash in the region, and it is clear that drought, short growing seasons (Petersen 1994), anthropogenic environmental damage (Kohler and Matthews 1988), and the failure of relatively new sociopolitical or religious institutions associated with villages, as we have discussed above, all contributed to the tipping point that was reached in the late ninth century. As noted earlier, Schlanger and Wilshusen (1993) argued that intense multi-year episodes of drought between A.D. 880 and 910 made maintenance of large community centers in the Dolores area difficult and contributed to their failure. Although there had been earlier periods of intense drought and local abandonments, in those cases population returned after several decades to reinhabit the Dolores area. The challenging times of the late ninth century appear to have resulted in a century of low population in the area.

As the archaeological data for this region have become more complex and robust, researchers have increasingly been able to bring human agency into their accounts of this migration. Adams and Petersen (1999:40) used a much more wide-ranging and refined paleoenvironmental data set to propose that an increasingly narrow farm belt in the late ninth century, coupled with short growing seasons in the early A.D. 900s, would have contributed to the abandonment of some of the most productive upland agricultural lands, such as those close to Dolores. They recognized that carrying capacity would have allowed human populations to continue to farm the region, but that more attractive possibilities may have existed outside the region. Kohler (1992) and Varien and others (2007) additionally recognized that the deleterious anthropogenic effects of swidden-style agricultural systems and localized overharvesting of wood for construction timbers, cooking, and warmth may have made it increasingly costly for households to remain in aggregated settlements in the late ninth century. Finally, as we reconstruct a more detailed cultural history of this region and its ties to other regions in the northern Southwest, it is becoming apparent that some of the very cultural histories and social institutions that shaped the formation of early villages may also have influenced their breakup (Wilshusen 1999b:237) and guided emigrants to new homelands in the tenth century (Wilshusen and Ortman 1999; Wilshusen and Van Dyke 2006).

Although population declines were steep, there still was measurable population in the central Mesa Verde in the tenth century. Coffey's (2004, 2006) documentation of 15 early tenth-century residential sites in the Dove Creek area provides some of the best clues we presently have about how populations adapted to the challenges of the A.D. 880–920 period. The four villages he documented are multi-roomblock designs with total roomblock lengths of about 100–130 m (Figure 2.10). The roomblocks are typically found on ridges above small drainages and near good and deep agricultural soils. These villages are estimated to have had populations of around 70–90 people. Coffey also documented a number of smaller hamlets that probably date to this period. If we use the average population density of the 16 km^2 area Coffey examined in this study to extrapolate the population of the upper Great Sage Plain between A.D. 880 and 920, we get an estimated momentary population of close to one thousand people. Coffey argued that this upland setting would have provided access to good agricultural soils, possibly greater summer rainfall (because of higher altitude), and ready access to the relatively unexploited wild resources of the nearby mountainous areas. The earliest known reservoirs are also found at these sites, so it is clear that people began to manage resources in new ways and adapt to changing environmental constraints. However, public architecture is rare, and it is striking that the densest early tenth-century residential populations are in essentially the same locales where we have documented hamlets for the very dry times of A.D. 690–710. This suggests that Petersen's reconstruction of colder temperatures

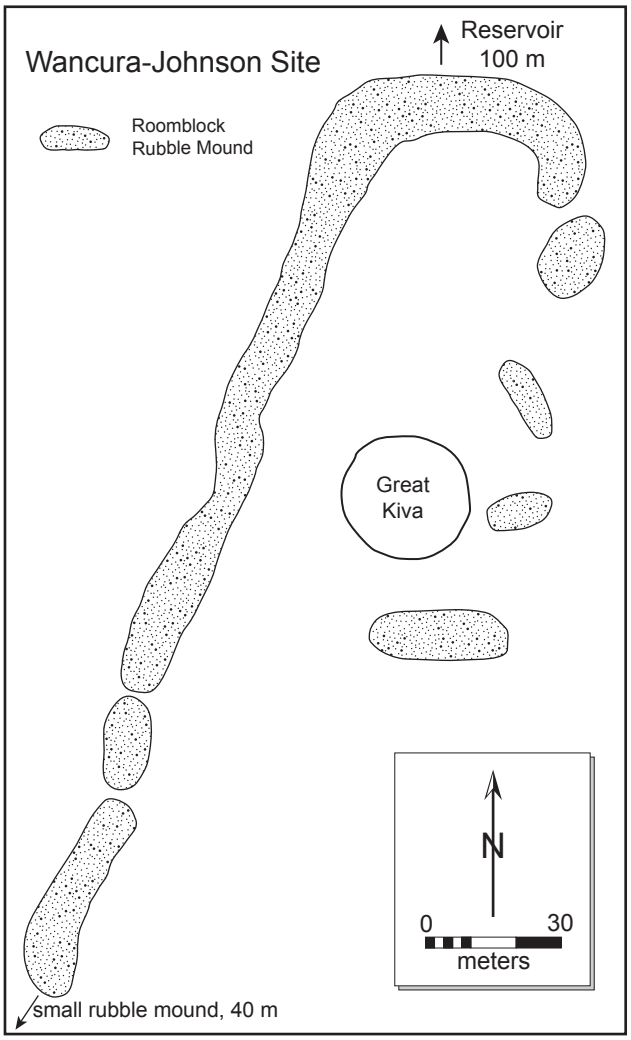


Figure 2.10. Wancura-Johnson Site, a late Pueblo I–early Pueblo II village, Dove Creek, Colorado. The locations of possible pit structures are unknown.

and droughty conditions for these two periods may not have been quite so deleterious in these uplands.

Although a residual population was able to survive in the region throughout the tenth century, it persisted at much lower numbers and in more dispersed settlements than was the case in the ninth century. Villages and village clusters that were common in some locales until A.D. 880 all but disappeared sometime between A.D. 920 and 980 as population continued to decrease regionally. There were a few specific locales where population did survive and maybe even increased—such as the northern periphery of the region and on Mesa Verde—but otherwise it appears that population fell dramatically throughout the central Mesa Verde in the tenth century.

CONCLUSIONS

The period between A.D. 650 and 920 was a time of remarkable change and innovation in the central Mesa Verde region. Population grew from practically nothing in A.D. 600 to a level that made this region the most densely populated area of the northern Southwest by A.D. 850. Residential sites also grew in size, such that the first surface pueblos were evident by the mid-eighth century. One of the earliest villages in the Mesa Verde region came into being at the western edge of the area in the A.D. 760s, not long after the appearance of the earliest small pueblos. Although earlier Basketmaker III villages appeared to the south of the San Juan River, they were pit house villages. The villages in the greater Mesa Verde region were distinctly different, with large groups of pueblo roomblocks holding 10 to more than 40 households. Within less than three generations, two distinct village forms had emerged, one centered on great kivas and the other focused on early great houses, characterized by U-shaped roomblocks and oversized pit structures. These great houses presaged many features found in Chacoan great houses two centuries later (Wilshusen et al. 2012; Windes and Van Dyke, Chapter 5). A maximum population of 8,500 people was reached by the mid-ninth century, when at least half of the regional population lived in large villages. The abandonment of these community centers in the late ninth and early tenth centuries appears to be due to a decreasing quality of village life, as well as opportunities outside the region. The breakup of these early villages may also have triggered the development of the Chacoan regional system in the A.D. 900s. The rapid population decline in the tenth-century central Mesa Verde deserves much more research and clearly had long-term ramifications for this region and for areas to the south.

CHAPTER 3

Meanwhile, in the West:

Early Pueblo Communities in Southeastern Utah

JAMES R. ALLISON, WINSTON B. HURST, JONATHAN D. TILL, AND DONALD C. IRWIN

THE EARLY PUEBLO SETTLEMENT OF WHAT is now southeastern Utah exhibits patterns that complement and contrast with trends in better-known regions such as southwestern Colorado (see Wilshusen et al., Chapter 2). Shortcomings in the current data limit the detail we can include in this description, but a number of patterns are clear. This chapter elucidates the patterned variability in the area's settlement strategies, the basic trends associated with social organization, and the basic demographic trends through time. We hope to develop, in the end, a basic historical narrative for these last centuries of the first millennium.

To create this narrative, our chapter first briefly describes the geography of southeastern Utah, with a focus on major topographic features and the elevation-related climatic variability that influenced ancestral Pueblo settlement patterns. Next, we provide a cursory review of our data set, with an emphasis on the weaknesses of those data. We then briefly describe the ceramic dating methods that we use to compensate for the lack of well-dated sites. We turn next to the body of our presentation, which offers our understanding of early Pueblo demographic, settlement, and social organizational trends. Our concluding discussion touches upon other trends and observations for the early Pueblo period occupation(s) of southeastern Utah.

PHYSICAL GEOGRAPHY

Our discussion focuses on that part of the Mesa Verde region that lies between the Montezuma Canyon drainage on the east, Cedar Mesa on the west, the San Juan River to the south, and the Abajo Mountains to the north (Figure 3.1, see color plates). This area lies at the heart of the Colorado Plateau, and its topography and biogeography are typical: a complex topography of mesas, plateaus, canyons, valleys, and benches that is punctuated by isolated laccolithic mountains, supporting a patchwork of biological communities that vary according to elevation and microenvironment.

This topography is produced by the interplay of tectonic uplift associated with the Abajo Mountains and the erosional downcutting of the San Juan River and its tributaries. The resulting landscape tumbles from a high of 11,300 feet (3,444 m) at Abajo Peak, to below 4,000 feet (1,220 m) along portions of the San Juan River. A series of parallel, south-flowing tributaries to the San Juan River separate and define a series of flat-topped mesas and benches that also slope gently to the south. Vegetative communities

vary according to precipitation, which is largely in turn a function of elevation. Both actual and effective precipitation are greater at higher elevations and less at lower elevations. These patterns are sufficiently robust to enable us to define, for discussion purposes, a series of general environmental zones.

The "highland" zone, restricted to the Abajo Mountains and the higher parts of the Elk Ridge plateau, includes elevations above about 8,000 feet (2,440 m) and receives from about 20 to over 30 inches (50 to 76+ cm) of annual precipitation. Growing seasons in this zone are short, but are somewhat extended in areas with south-facing slopes. Characteristic vegetation is dominated by ponderosa pine and aspen forest, mountain meadows, and extensive areas of mixed mountain shrubland.

The "upland" zone encompasses the middle-elevation mesa/canyon country that constitutes the heart of our study area. It ranges from about 5,000 to 8,000 feet (1,524–2,438 m) in elevation and receives from about 10 to 20 inches (25–51 cm) of precipitation. When we refer to the upland zone, we often have in mind the Blanding area and similar piñon-juniper-sagebrush environments between about 5,000 and 6,500 feet (1,524–1,981 m), extending east from Comb Ridge and Elk Ridge into Colorado. Much of this zone falls within the "Great Sage Plain," but it also includes Cedar Mesa to the west. Conditions on these mesas are generally adequate for agriculture, with Blanding averaging about 12 inches (30.5 cm) of precipitation and a 149-day frost-free growing season. We also include canyon environments between the upland mesas within this category, even though their elevations drop below 5,000 feet (1,524 m).

The "lowland benches" zone encompasses the broad benches between the southern scarps of the upland mesas and the San Juan River canyon. Elevations range from about 4,600 to 5,000 feet (1,402–1,524 m), and precipitation ranges from about 7 to 10 inches (18–25 cm). Soils are typically aeolian sand dunes with intermittent bedrock exposures, supporting a relatively xeric mosaic of vegetation communities dominated by blackbrush, shadscale, snakeweed, and native perennial grasses.

The "San Juan River corridor" consists of the San Juan River inner canyon and its terraces. Elevations at river level range from about 4,400 feet (1,350 m) near Four Corners to below 4,000 feet (1,200 m) in the canyon below Mexican Hat, and precipitation averages around 7 to 8 inches (18–20 cm) per year.

The Data

To develop our narrative, we had to work with a flawed and incomplete data set. The only regional-scale data come from the Intermountain Antiquities Computer System (IMACS) database, which is compiled from site forms that have been produced over the last three decades as the result of many projects completed by multiple institutions for various purposes. Systematic population estimates are difficult or impossible to generate from the IMACS data because of vague, inconsistent site-dating assessments and the lack of any site size information other than total site area. Additionally, the IMACS ceramic data are limited to the presence or absence of no more than six pottery types, which severely limits our capacity to use ceramic assemblage data to date these sites.

Because of these shortcomings, the IMACS data are useful only for documenting major trends in site location. Several such trends are evident in maps of sites classified in the IMACS database as "Basketmaker III," "Basketmaker III-Pueblo I," "Pueblo I," and "Pueblo I-Pueblo II" (Figure 3.2): (1) In all periods, sites are scattered throughout the area from just west of Comb Wash east to the Utah–Colorado state line; (2) notable concentrations of Basketmaker III/Pueblo I and Pueblo I sites occur in the upland regions just south of the Abajo Mountains, on lands managed by the Manti-LaSal National Forest; and (3) the IMACS database includes few sites from these time periods south of the San Juan River or from Comb Wash west to the Colorado River.

Even these general trends are in part problematic. The apparent lack of sites south of the San Juan River and west of Comb Ridge is likely exaggerated by the paucity of accessible survey data in those areas. West of Comb Ridge, for example, the pre-IMACS Cedar Mesa surveys (Matson et

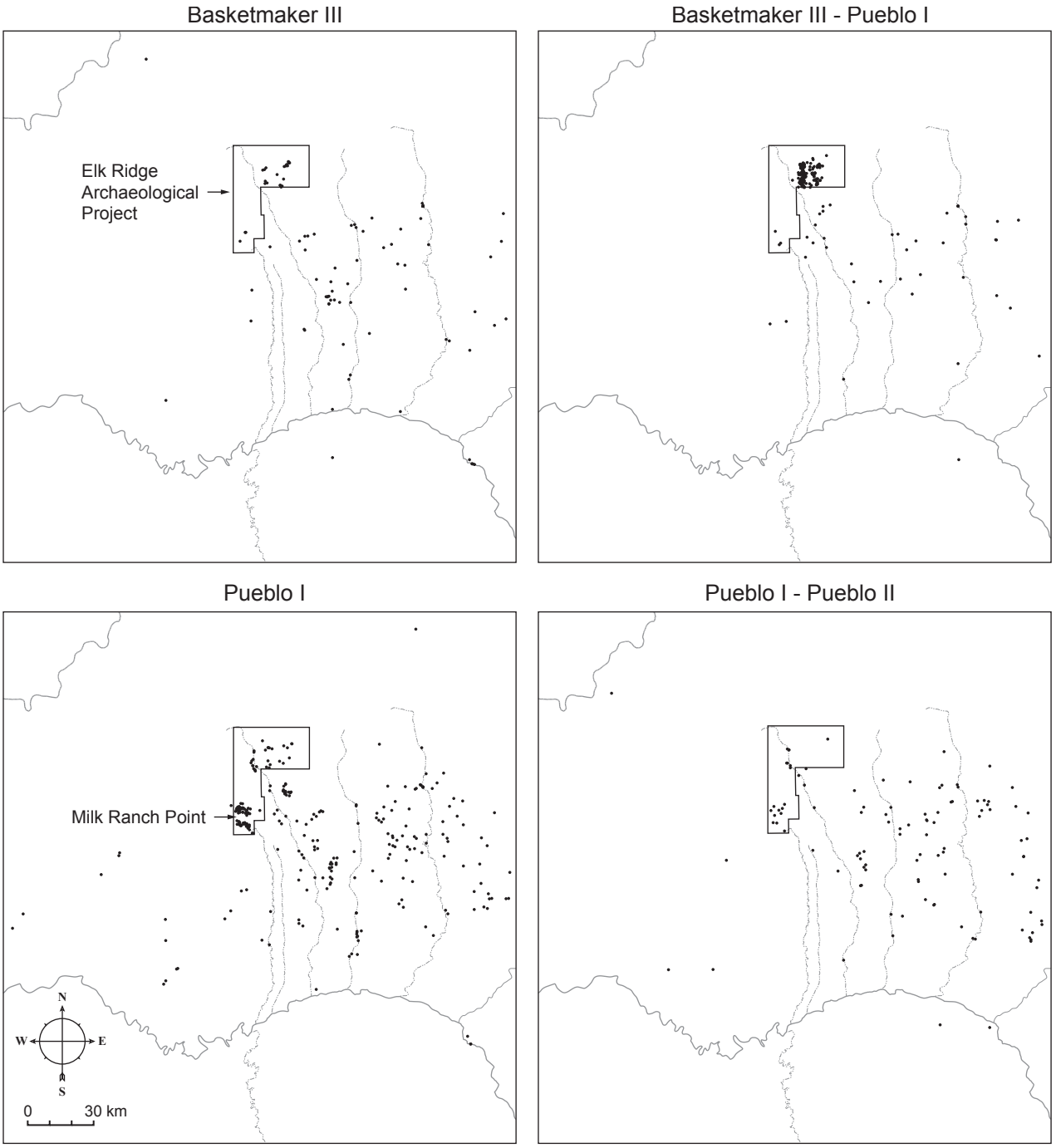


Figure 3.2. Maps showing the locations of early Pueblo sites by time period, based on data from the IMACS database. Note the significant clusters of "Basketmaker III–Pueblo I" and "Pueblo I" sites in the high upland areas within the area included in the Elk Ridge Archaeological Project.

al. 1988) documented a significant Basketmaker III presence, dated to A.D. 650–725, that is not evident in the IMACS data. Pueblo I sites were essentially absent in the Cedar Mesa surveys, however. A number of Pueblo I sites are found along the eastern edge of Cedar Mesa, but there apparently was no significant Pueblo I occupation west of there. Geib (1996:112–113) infers the existence of a "no man's land" dividing Fremont populations on the northwest side of the Colorado River from the Basketmaker III and Pueblo I inhabitants of our study area. The defensive siting of some of the sites

along the western edge of Pueblo I settlement lends support to Geib's argument.

The impressive early Pueblo occupation of the high uplands (above about 6,500 feet elevation) south of the Abajo Mountains has been known for decades, thanks to a series of surveys completed in the 1970s as part of the Elk Ridge Archaeological Project (Berge et al. 1976; DeBloois 1975; DeBloois and Green 1978; Green 1974; Louthan 1977). The original publications focused largely on site location models, sampling, and survey design, generally characterizing these upland Pueblo I sites as small agricultural sites that operated in a larger seasonal settlement strategy. However, survey and resurvey in the past decade have revealed a complex array of cultural features in this landscape, including multiple-household residential sites, single-household residential sites, isolated features (e.g., cists, granaries, check dams, rock art panels, etc.), and artifact scatters (e.g., Guilfoyle 2004; Hurst et al. 2004; Irwin et al. 2000; Irwin and Wolfe 2011). This significant and intriguing concentration of Pueblo I sites in the uplands south of the Abajo Mountains represents one of the largest collections of relatively well-preserved Pueblo I sites in the Four Corners region, although it is not well understood. More thorough study of these sites promises to greatly expand our knowledge of Pueblo I occupation in southeastern Utah and beyond.

Despite the problems with the IMACS data, our synopsis of large-scale settlement patterns and social organization for the early Pueblo populations in southeastern Utah is now better informed than would have been possible even a few years ago. The observations that we report here derive from numerous projects and our shared personal knowledge of large sites and significant site concentrations. We still acknowledge major gaps in our knowledge. These result from incomplete, unsystematic survey coverage; the inconsistent, and often poor, quality of site documentation; the lack of excavation data from large portions of our study area; the relatively small number of well-dated Pueblo I period sites; and the tendency for sites to be reoccupied, frequently more than once. These last two points underscore the importance of ceramic assemblage analysis, which is often the principal tool available for dating individual sites and for understanding larger settlement trends through time.

Ceramic Dating

Tree-ring dates are available from a small number of early sites in southeastern Utah (Table 3.1). These dates demonstrate a strong Basketmaker III presence in the A.D. 600s and indicate that the early Pueblo I period, as defined below, dates primarily to the late 700s. The number of tree-ring-dated Pueblo I sites is too small to contribute much to our reconstruction, however. Instead, we rely on ceramics to place sites into four temporal categories, to which we assign approximate dates based on cross-dating with the greater number of tree-ring-dated sites in the central Mesa Verde region (Ortman et al. 2007; Wilson and Blinman 1995).

The periods we use include Basketmaker III, early Pueblo I, Middle Pueblo I, and Late Pueblo I–early Pueblo II. The Basketmaker III period probably starts in the A.D. 500s, although the tree-ring dates suggest most sites date to the A.D. 600s. Basketmaker III ceramic assemblages consist almost entirely of Chapin Gray and Chapin Black-on-white, occasionally with trace amounts of Tallahogan Red or Dolores Red. Early Pueblo I ceramic assemblages date from about A.D. 750 to 825 and also include Chapin Gray and Chapin Black-on-white, but in southeastern Utah, early Pueblo I assemblages always include significant quantities of Abajo Red-on-orange. They sometimes also include minor amounts of Moccasin Gray and/or Bluff Black-on-red.

Middle Pueblo I sites, dating between about A.D. 825 and 880, have ceramic assemblages that include significant amounts of neck-banded gray ware sherds, with Moccasin Gray dominating or co-dominant with wide-clapboard Mancos Gray. Abajo Red-on-orange is still present but less common than Bluff Black-on-red. White wares include some Chapin Black-on-white with some Piedra Black-on-white and/or early White Mesa Black-on-white. In southeastern Utah, a number of multicomponent

Table 3.1. Tree-ring dates from early Pueblo sites in southeastern Utah.

Site Number	Site Name	Location	Period	Non-Cutting Dates	Cutting and Near-Cutting Dates
42SA8876	Wagon Rut Ridge	Recapture Community	BM III	610vv	631r
42SA8889	Weaving House	Recapture Community	BM III	49+vv, 629vv, 640vv, 684++vv	—
UT W:5:39		Natural Bridges	BM III	563+vv	—
UT W:5:50		Natural Bridges	BM III	561vv, 599vv, 629vv, 638++vv, 641+vv	—
42SA2142	Egg Hamlet/Big House	U-95	BM III	597vv, 603vv	—
42SA3201	Long Point Village	U-95	BM III	575vv	—
42SA20977	Milepost 43	lower White Mesa	BM III	567+vv, 597+vv, 609vv, 621vv, 656+vv, 682+vv	659r, 680B, 683+r
42SA3775	Casa Coyote	lower White Mesa	BMIII	537vv, 545+vv, 550vv, 564+vv, 598++vv, 628vv, 632vv, 636+vv, 637vv, 663+vv, 666+vv, 669vv, 674vv, 674++B, 683++B, 683vv(3), 684vv, 685vv, 690vv	690r, 691v
42SA22449	Hosler Site	Blanding	BM III	692vv	692+r, 692rB, 693v, 693rB, 694r
42SA2096	Cave Canyon Village	Montezuma Canyon	BM III	904vv, 925+vv, 1025vv, 1117vv, 1137vv, 1214vv	—
42SA6396		White Mesa	BM III	676vv	—
42SA6757		White Mesa	BM III	627vv	—
42SA971	Monument Village	Montezuma Canyon	Early P I	557+vv, 581vv, 745+vv, 745+vv, 749vv	752v, 755r comp, 755rB comp
42SA13	Site 13	Alkali Ridge	Early P I	749vv, 753vv, 758vv, 760vv, 761vv, 764vv, 765vv (5), 766vv, 768vv, 771vv (2), 772+vv	757v, 768v, 769v, 778+v
42SA12213	ML534	South Cottonwood Canyon	Middle P I	809+vv	827r, 829v
42SA12209		Cottonwood Wash	Late P I	786vv, 823+vv	—
42SA2096	Cave Canyon Village	Montezuma Canyon	Late P I- P II	876vv, 886vv, 945vv, 947vv, 1004vv, 1016vv, 1043vv, 1113+vv	951r

Note : The dates from the Basketmaker III component at Cave Canyon Village (42SA2096) are obviously too late. The most likely explanations for this involve either reuse of Basketmaker III structures that was not detected during excavation or post-excavation confusion of sample numbers and/or provenience information. The Pueblo II dates from the same site are problematic for a different reason. The overall site complex clearly includes a substantial late Pueblo I–early Pueblo II component evidenced by numerous sherds from neck-banded, neck-corrugated, and early-style all-over corrugated vessels, as well as abundant sherds of Cortez Black-on-white, Bluff Black-on-red, and early-looking Deadmans Black-on-red. A smaller number of Mancos Black-on-white and corrugated sherds indicates that occupation continued into (or resumed in) late Pueblo II as well, however. Most of the tree-ring dates from the late Pueblo I-early Pueblo II component are within the expected range, although the latest two dates (at least) seem too late. Unfortunately, sorting out the ceramic associations for each date would require reanalyzing large ceramic collections.

References: 42SA8876, Hurst (1985) ; 42SA8889, Billat (1985); UT W:5:39 and UT W:5:50, Schroeder (1965:101) ; Egg Hamlet/Big House, Dalley (1973), Wilson (1974); Long Point Village, Wilson (1974); 42SA20977, Firor et al. (1998) ; 42SA3775, Hurst (2004) ; 42Sa22449; Hurst (1994) ; 42SA2096, Christensen (1980:102-108) ; 42SA6396 and 42SA6757, Davis (1985:185) ; 42SA971, Miller (1976 :29), Towner (2011); 42SA13, Allison (2012), Bannister et al. (1969); ML534, Green and DeBloois (1974) ; 42SA12209, Fetterman et al. (1988:87).

sites exhibit composite assemblages of early and late Pueblo I ceramics, apparently with a mid-800s hiatus. Real middle Pueblo I components can be distinguished from these mixed assemblages by a significant representation of Moccasin Gray.

The sites we include in our late Pueblo I–early Pueblo II period date from the very late A.D. 800s well into the 900s. Early in this period ceramic assemblages are distinguished by abundant wide-clapboard versions of Mancos Gray, with minor amounts of later narrow-band Mancos Gray, and minor amounts of Moccasin Gray. Bluff Black-on-red is the dominant red ware type, with little or no Abajo Red-on-orange and minor amounts of stylistically early Deadmans Black-on-red. White Mesa Black-on-white is the most common white ware and is especially common in the western part of our study area. In the ceramic assemblages from the latest sites in our sample, the amounts of narrow-banded Mancos Gray increase relative to earlier styles of neck banding, and minor amounts of early corrugated ceramics appear, mostly

representing sherds from neck-corrugated vessels. The frequency of slipping on red ware types also increases in these latest sites, as does the number of sherds identifiable as Deadmans Black-on-red, and small amounts of Cortez Black-on-white are sometimes present, although Cortez is never common in southeastern Utah.

In assigning individual sites to specific time periods, we relied on a variety of sources of ceramic data. Published sherd counts were used when available, but often we relied on unpublished data. Sources include unpublished analysis or reanalysis of excavated collections from a few sites (Nancy Patterson Village, Monument Village, Edge of the Cedars), but data from a number of the largest Pueblo I sites in our sample are limited to counts of surface sherds made by the authors during site visits.

Early Pueblo Settlement and Society in Southeastern Utah

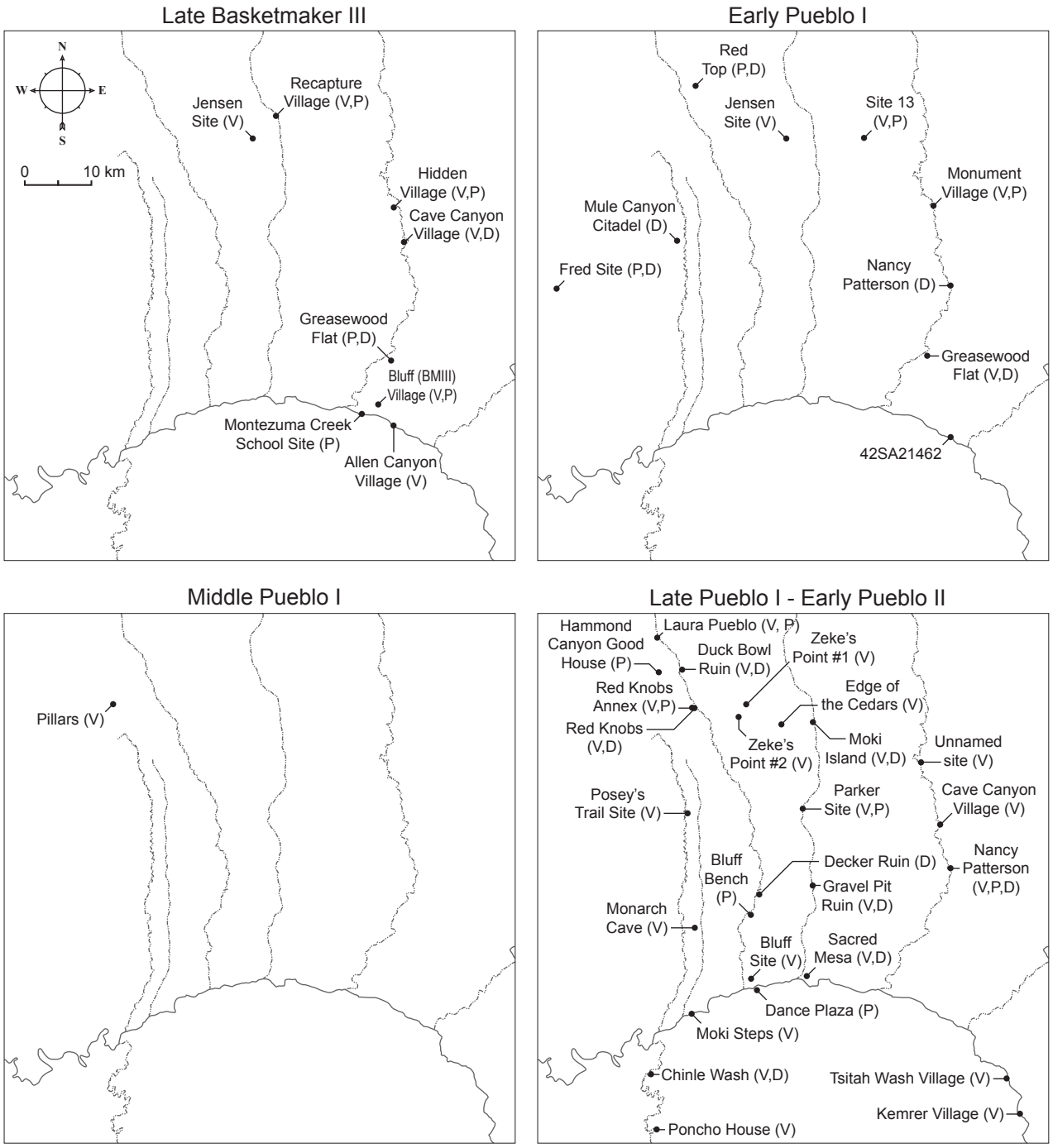
Basketmaker III (A.D. 500–750)

To understand the Pueblo I period landscape of southeastern Utah, one must first consider its historic development. Important elements of the Pueblo I archaeological pattern clearly have their roots embedded in the Basketmaker III substratum. These elements include a basic architectural footprint for the household, or Lipe's (2006) "San Juan pattern" (pit structure located between storage rooms or cists to the north or northwest and a midden to the south or southeast); patterned two-chambered pit structure architecture with an emphasis on bilateral symmetry, which allows for both mundane habitation and formal cosmological expression; a pottery technology that developed to accommodate intensive, sustained cooking; a basic agricultural food package that centered on maize, beans, and squash; and cosmological belief systems that are indicated by persistent symbolism and formal patterns.

By the late A.D. 600s, the Basketmaker III period population appears to have been relatively high. The landscape of what is now southeastern Utah had witnessed a rapid population expansion over the previous two centuries, likely involving immigration as well as an accelerated fertility rate. Earlier Basketmaker populations appear to have been concentrated along the San Juan River corridor and its major tributaries in areas with exposures of limestone, a rock apparently used in the boiling of maize to enhance the grain's nutritional properties (Katz et al. 1974; Matson 1991:7) prior to the introduction of beans. By the A.D. 600s, Basketmaker III people had acquired beans and the pottery technology necessary to cook them. With this improved subsistence regime, Basketmaker peoples expanded rapidly out across the upland mesas of the Great Sage Plain and into the highland benches of Elk Ridge and the Abajo Mountains, occupying landscapes characterized by relatively deep, well-drained soils in areas amenable to both dry- and runoff-farming strategies. By the late A.D. 600s, we believe that the population of southeastern Utah included at least a few thousand people. While a land-extensive strategy, high residential mobility, and multi-settlement residential pattern may create the illusion of inflated population, there are probably at least several Basketmaker hamlets per square mile throughout most of the upland zone of the canyon and mesa country.

At least several loosely clustered Basketmaker III communities developed in the region by the A.D. 600s, all with some form of community architecture (Figure 3.3). Three of those have been partly excavated and one has been surface mapped. They are located on the San Juan River corridor near Bluff (Neily 1982), at Recapture reservoir near Blanding (Jacklin 1984; Nielson et al. 1985), and at Hidden Village (Montoya 2008) and Cave Canyon Village (Christensen 1980; Nielsen 1978) in the middle stretch of Montezuma Canyon. Given the subtle and scattered nature of Basketmaker III settlement, and the difficulty of discerning community clusters, it is likely that other late Basketmaker proto-village communities remain unidentified in southeast Utah.

The Bluff, Recapture, and Hidden Village communities all include multiple habitations associated with public architecture. The public structures at the Bluff and Recapture villages, both of which have been excavated, consist of "over-sized pit



V=Potential Village, P=Great Kiva or other public architecture, D=Defensive site

Figure 3.3. Maps showing the locations, by time period, of known early Pueblo sites that are (or may be) village size, have public architecture, or appear to have been located in defensible settings.

structures," rooms that are essentially very large pit structures with antechambers (Figure 3.4). The Hidden Village public feature has not been excavated, but appears to be a large circular feature with no antechamber.

The largest excavated pit structure in the Bluff community had an interior area of approximately 78 m^2, almost four times the average size (20.1 m^2) of the six other pit structures excavated there. A smaller pit structure adjacent to the large one was

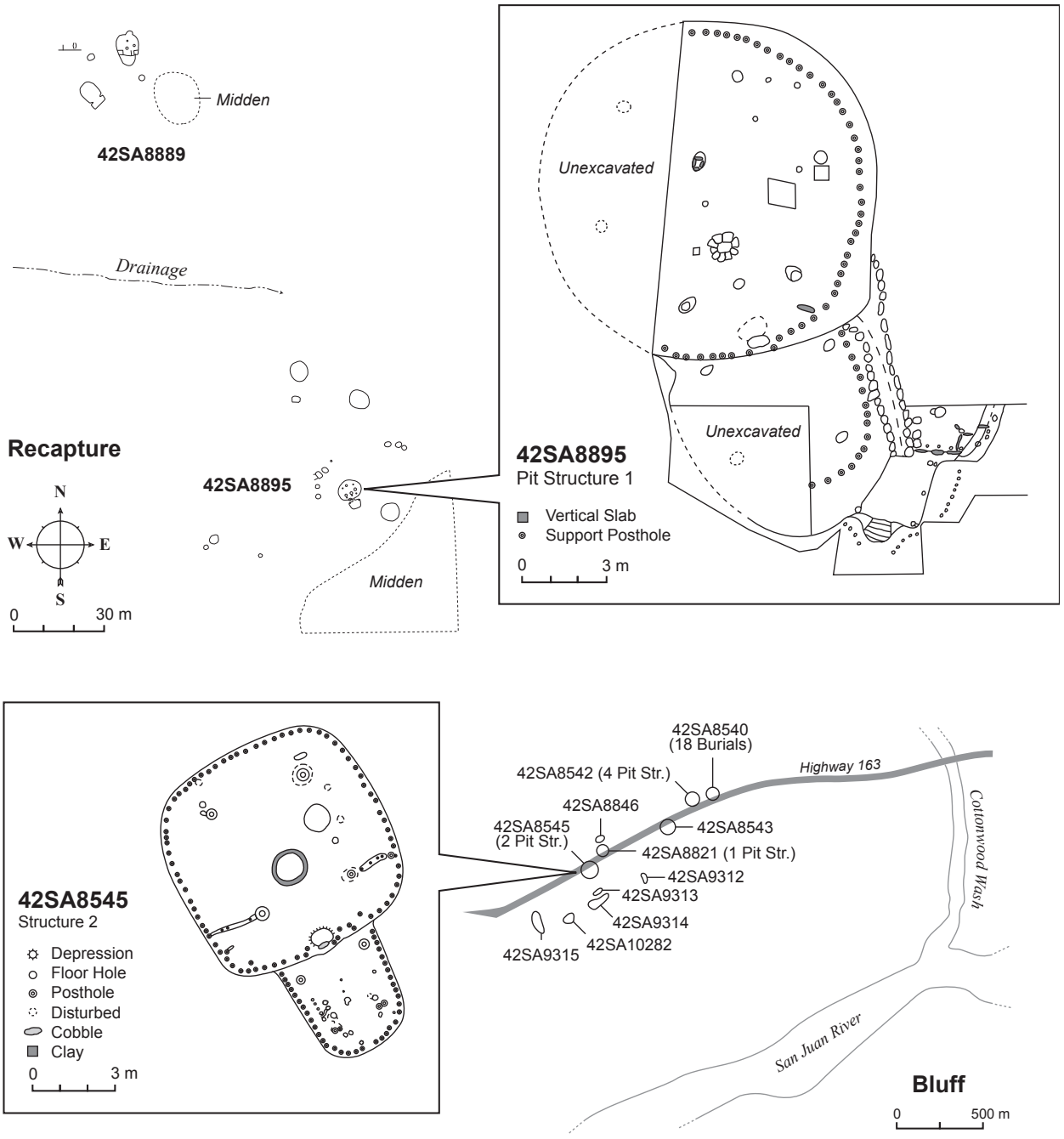


Figure 3.4. Maps showing the layout of the Bluff Basketmaker III community and the central portion of the Recapture Basketmaker III community, with insets showing the oversized pit structures from each community.

marked by the formal burial of a golden eagle in a centrally located floor pit.

In addition to its public architecture, the Bluff village also possessed an apparent community cemetery. Eighteen human burials were documented within the highway right-of-way, in association with a formal, community-scale midden area (42SA8540). Subtle differences and similarities in burial practice by gender and age may reflect social distinctions and ethnic solidarity. The two female adults may have had shrouds, but were otherwise unadorned. In contrast, adult males do not appear to have had shrouds,

but were adorned by preciosities such as pendants, necklaces, or other paraphernalia. Many of the males also wore single bracelets of Glycimeris shell, which suggests connections to societies located far to the south. One of the adult males possessed a necklace with over 1,000 shell beads and two "bi-lobed" turquoise beads. These bi-lobed beads may be associated with the "lobed circle" rock art motifs at the Procession Panel (Wilshusen, Ortman, and Phillips, Chapter 11).

The oversized pit structure in the Recapture Community is even larger than the one at Bluff (Jacklin 1984, 1985). The main chamber was almost round and 12 m in diameter, encompassing approximately 110 m^2. The antechamber alone (apparently the remodeled main room of an earlier pit structure) measured 6.7 by 7.2 m, adding another 48 m^2 (about twice the floor area of a normal pit structure) to the total structure size. The ritual significance of the structure is suggested by the partially articulated skeleton of a red-tailed hawk that had been placed beneath one of the primary roof support posts in the main chamber. Seven normal-sized pit structures occur within 150 m of the oversized pit structure (Figure 3.4), and several other Basketmaker III sites containing an unknown number of pit structures are concentrated within a 2 km radius.

Whether these clustered Basketmaker communities qualify as early villages is largely a matter of definition. They do not exhibit the qualities of some later villages, which consist of contiguous aggregations of multiple households (e.g., Brew's Site 13, McPhee Village in southwest Colorado); instead, the communities reflect the "extensive" land-use strategy that is evident during the A.D. 500s and 600s. Independent households were scattered within shouting distance in non-contiguous aggregations within approximately a 1 km radius of community architecture. This settlement pattern may be akin to Wilshusen and Wilson's (1995:76–80) observations for late Pueblo I dispersed communities at Cedar Hill in northwest New Mexico and in some respects foreshadows the organization of later Pueblo II great house communities, which similarly comprise numerous small houses that are loosely clustered in the neighborhood of public architecture.

Early Pueblo I (A.D. 750–825)

Populations seem to have declined in the western Mesa Verde region during the first half of the A.D. 700s. This is a poorly known period, perhaps because there were fewer people to leave their sites behind or because archaeological investigations have simply not sampled locations with these sites. Compounding the problem is our current inability to distinguish subtle pottery assemblage attributes that might resolve temporal distinctions between the first half of the eighth century and the preceding decades.

The population appears to have rebounded shortly after A.D. 750. Several villages, a substantial number of smaller settlements (of 3+ households), and "defensive citadels" had been constructed by the first decades of the ninth century. The majority of the population appears to have been located from Comb Wash and Milk Ranch Point east, while there was little or no occupation of the Grand Gulch Plateau and points west. Assuming increased sedentism and settlement aggregation, the population may have approximated or exceeded the Basketmaker III period's maximum population, even though there are fewer, but typically larger, sites.

The demographic rebound in the late eighth century may derive in part from an immigrant population. Allison (2008a, 2008b, 2012) has argued that Abajo Red-on-orange first appeared at approximately A.D. 750 and almost immediately became the dominant decorated pottery in the western Mesa Verde region. The appearance of Abajo Red-on-orange coincides with the construction of several large sites exhibiting the first aboveground, aggregated, contiguous roomblocks. Abajo Red-on-orange is decorated in a diverse, but distinctively nonlocal, design style whose closest analogues are found in the southern part of the Southwest. Abajo designs are distinct in layout, symmetry, and execution from earlier and contemporary white ware designs (Allison 2008a; Washburn 2006), but analogues for some Abajo designs occur on early decorated pottery from the Mogollon region (Allison 2008b, 2012). Abajo Red-on-orange is also similar technologically to red-on-brown pottery from the Mogollon region. In several respects,

including bowl shapes and sizes, the use of oxidizing firing techniques, and the occasional tendency to polish over painted designs before the paint was completely dry, Abajo Red-on-orange is more similar to early Mogollon decorated pottery than to the local white ware types. This suggests that the residents of early Pueblo I villages may have included immigrants from far to the south. Village populations probably also included people with local ancestry, however, as evidenced by continuities with earlier sites in some aspects of architecture and utilitarian pottery.

The largest known early Pueblo I village is Site 13, located on the interior mesa-top divide of Alkali Ridge (Brew 1946; Figure 3.5). Tree-ring dates suggest that the early Pueblo I occupation at the site lasted only a few decades, starting in the A.D. 750s and probably ending soon after A.D. 780 (Allison 2012). The site consists of a compact cluster of six long, sweeping, arcuate roomblocks with associated plaza areas containing pit structures. Brew's excavation of four of the roomblocks and their associated pit structures revealed 16 pit structures, 118 slab-lined storage rooms, and 25 aboveground rooms interpreted as habitations. These rooms are arranged two deep, with a row of habitation rooms each fronting (usually two) smaller storage rooms. The habitation rooms were generally larger than the storage rooms and had hearths and other internal features, but they had shallower floors and less substantial walls than the storage rooms. A large number of additional habitation rooms were apparently left unexcavated due to the difficulty of finding their walls and floors. At least two additional roomblock-plaza areas and their associated pit structures remain unexcavated at the south end of the site (Brown and Davis 1984).

Site 13 was a village of unprecedented size in the Mesa Verde region. Wilshusen and Blinman's (1992:257–258) formula for estimating the number of households from the length of Pueblo I roomblocks suggests that 40–45 households probably inhabited the excavated portion of the site. The unexcavated roomblocks to the south probably housed about another 20 households, suggesting a population in the range of 300–400 people.

Brew identified three oversized pit structures, each associated with a major room arc, all architecturally different from smaller pit structures at the site but similar to one another, with circular main chambers, six-post roof support configurations, wing walls, and peripheral wall post sockets at floor level. Although all are larger than other pit structures at the site, only one (Brew's Pit House B) meets our size criterion for "oversized" status (Figure 3.5). Its main chamber measured 9 m in diameter and exhibited remarkable bilateral symmetry in its floor features, as well as a possible complex sipapu (Feature G) and other possible esoteric paired floor features (Features E, Q and N, and H). Two habitation rooms (99A and 100A) located just north of Pit House B contained concentrations of ground stone and whole ceramic vessels (including both cooking pots and serving bowls), which Spielmann (2004:222) interprets as evidence that feasts were both prepared and served in the vicinity of the oversized pit structure.

The early Pueblo I occupation at Monument Village is more dispersed and less systematically arranged than at Site 13. It consists of a core area with several substantial, contiguously aggregated roomblocks and a community-scale pit structure (Figure 3.5). The whole community area covers an area of 11 ha, but much of the early Pueblo I occupation is obscured by later components and has been severely trampled by cattle, and its full extent has not been clearly defined. Excavations focused on the core area of roomblocks and the large pit structure in the southern portion of the site (Patterson 1975) and on a small, probably single-household roomblock at the north end of the site (Miller 1976). A few tree-ring dates suggest that construction of early Pueblo I rooms began in the A.D. 750s. While only a small portion of Monument Village has been formally documented, the population appears to have been substantial. The excavated portions of the site probably housed at least 10 households, and an unknown number of additional early Pueblo I roomblocks remain unexcavated.

One large pit structure was excavated (Patterson 1975:13–19). This circular structure measured 10.7 m in diameter, had a six-post roof support, and

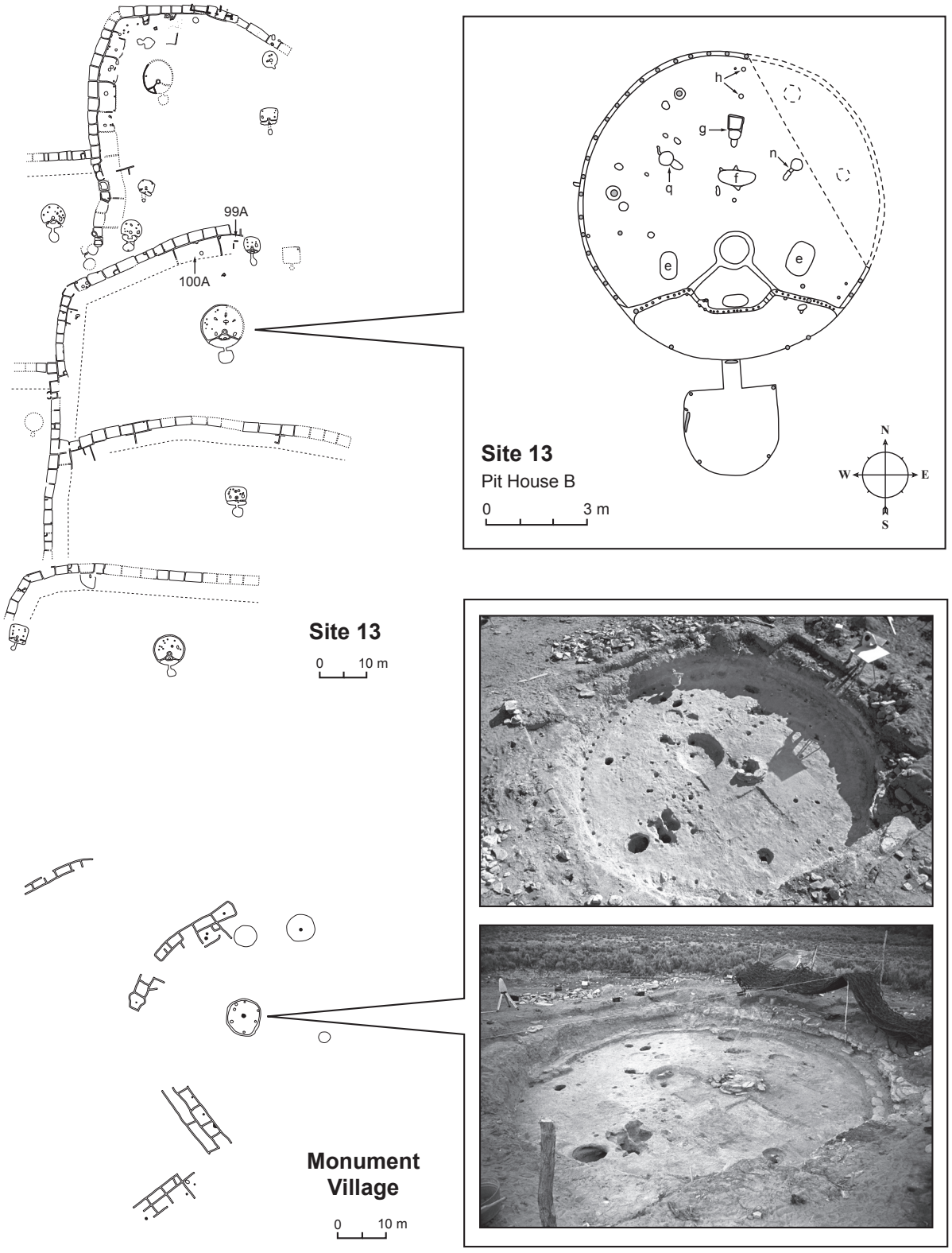


Figure 3.5. Maps showing the excavated portions of the early Pueblo I villages at Site 13 and Monument Village, with insets showing oversized pit structures. The upper photograph shows the oversized pit structure at Monument Village completely excavated, with peripheral postholes exposed. The lower photograph shows the structure partially excavated; most of the low slab-lined bench that capped the peripheral postholes after the structure was remodeled is still in place. Monument Village photographs used courtesy of Museum of Peoples and Cultures, Brigham Young University.

exhibited bilateral symmetry in its floor features (Figure 3.5). While the floor features do not exhibit the complexity seen in Pit House B at Site 13, there is some evidence for several possible floor altars. The structure was apparently remodeled extensively at least once. In the earlier incarnation, the structure was surrounded by floor-level peripheral wall posts. At some point, these posts were taken out, which likely required removing the roof, and a low slab-lined bench was constructed around the periphery. Although the majority of the ceramics in the fill of the structure are of early Pueblo I age (indicating that the structure filled with washed-in early Pueblo I trash), floor-level ceramics suggest that the last use of the structure was in late Pueblo I times. We assume that the original structure dates to early Pueblo I based on its close association with the early Pueblo I roomblocks.

Both Site 13 and Monument Village exhibit a settlement layout that became "standard" in the larger Mesa Verde region later in the Pueblo I period. The basic domestic unit consists of two contiguous, slab-lined surface storage rooms fronted on the south side by a single domestic surface room, which is often constructed of jacal. Slightly later versions of this household unit included an associated pit structure to the south of the roomblock (R. R. Lightfoot 1994). Strung together, these aggregates form the long roomblocks at Site 13 and Monument Village, as well as those typical of later Pueblo I villages. The smaller pit structures may be associated with individual families or extended families. In contrast, the oversized pit structures likely reflect larger groups of households. These larger structures may have functioned as houses for large extended families, but they likely also functioned as shared ceremonial structures for multiple families, as ceremonial structures for hosting people from the larger community or beyond, or some combination of these.

During early Pueblo I times, a number of "defensive citadels" were established. One of these, located just east of our focus area on the Colorado–Utah state line, is the "Fortified Spur" site (Figure 2.4). Several others are located along the western frontier of Pueblo I settlement (Figures 3.3 and 3.6, see color plates; Hurst et al. 2010). These sites have received little attention and are poorly understood. Their most evident common feature is their topographic situation on the tops of isolated, steep-sided, and highly defensible buttes or mesitas (Figure 3.6, see color plates). These sites are often surrounded by low enclosing walls constructed of dry-laid slab and block masonry. In many cases, postholes are present in the bedrock around the perimeters of these mesitas, which also suggests the construction of walls around these sites. At least two of them boast oversized circular structures classifiable as great kivas, and most have substantial midden deposits. Each of the sites could have accommodated several resident households, but none is associated with a known surrounding community. The isolated and elevated locations of these sites, and the nature of their construction, suggest that they were sited and built to announce both their presence and their defensibility. The dense middens and great kivas suggest that they were sites of intensive occupation and community- or supra-community-scale consumptive gatherings.

Three unexcavated sites stand out as examples of late A.D. 700s defensive citadels: The Fred Site (42SA6179), Red Top (unrecorded), and the Mule Canyon Citadel (42SA26899). The Fred Site is remarkable for its location on Cedar Mesa, a landform that marks the western extent of Mesa Verdean Pueblo settlement at this time. It occupies the top of a small, flat-topped, steep-sided knoll, commanding a panoramic view of a large area. The surface pottery assemblage is devoid of any neck-banded pottery, but does include unslipped San Juan Red Ware, suggesting an early Pueblo I affiliation. The perimeter of the caprock platform is marked by low, stacked slab-and-block walls as well as boulders that have been rolled to the cliff edge. Two above-grade circular rooms are present on the protected interior of the mesita, both of which are constructed of slabs and blocks of sandstone. One of the features measures 10 m in diameter, while the second measures 7 m. It seems likely that one or both features represent early great kivas or shrines. The nature of any associated residential community, if there was one, is not known.

In contrast, the Red Top site may have harbored at least some of its residential community. The site is dramatically perched on a high, steep-sided and cliff-capped mesita with difficult access, near the northwest edge of the settled Pueblo I world. A large depression, measuring about 11 m in diameter, probably contains an early great kiva. Nearby concentrations of rubble and jacal represent significant surface roomblock architecture, possibly the remains of domestic architecture. A remarkable abundance of pottery indicates that the site was occupied for a considerable duration, that it served as a locus for ritual feasting, or both.

The Mule Canyon Citadel, also located near the western edge of the Pueblo I settled world roughly midway between the other two sites, is located on the top of a small butte overlooking the confluence of Comb Wash with one of its major side canyons. A complex array of approximately 500 bedrock postholes suggests a substantial number of jacal rooms in an evolving configuration, while a rich midden containing abundant Abajo Red-on-orange ceramics suggests sporadic occupation starting in the A.D. 700s. This site, constrained by limited space on the butte top, is smaller than the other two sites and lacks both room for and evidence of obvious community-scale architecture. Recent block survey in the immediate area did not yield evidence for an associated early Pueblo I community (Hurst and Robinson 2009).

Middle Pueblo I (825–880)

There may have been a population decline, and perhaps even a regional depopulation, in the first half of the ninth century. Only a few sites are securely dated to this time across all of the zones in our focus area, from the San Juan River corridor to the highland zone. However, it is possible that substantial components of this period may be masked in sites with large late Pueblo I components, and significant portions of the poorly dated concentration of upland sites south of the Abajo Mountains may also date to this time period. Still, this apparent demographic decrease coincides with a population increase to the east (see Wilshusen et al., Chapter 2). One of the great concentrations of aggregated settlements in the mid-ninth century is in Colorado's Dolores River Valley; some of the social strategies that organized these aggregated settlements may have originated in southeastern Utah at places like Site 13 and Monument Village.

Identified villages dating to the middle Pueblo I period are few and far between in Utah (Figure 3.3). Small sites seem to be more common, though they occur in smaller numbers than in the decades that bookend this century. Their distribution across space is not yet clear. However, at least one village-sized site has a pottery assemblage that dates to this time period: the Pillars Site (42SA11800), a high-elevation complex overlooking much of the Mesa Verde region from the eastern rim of Elk Ridge (Figure 3.3). The site is unexcavated, but surface manifestations indicate at least a few tantalizing possibilities for public architecture. The intriguing remains of post-and-masonry structures, perched on the tops of the two isolated sandstone "pillars" that give the site its name, may precede other similar features at later Pueblo I sites. These structures are suggested by patterned arrays of bedrock postholes and tumbled masonry rubble surrounding the so-called pillars, although some of this rubble clearly derives from a small Pueblo III reoccupation. The site includes extensive Pueblo I midden deposits and more than 300 linear m of rubble related to the Pueblo I occupation (Figure 3.7). Most of the rubble deposits are adjacent to bedrock exposures and boulders, which complicates their interpretation; but, based on the architectural hints and midden concentrations, it is clear that the site includes numerous habitation loci.

Only one site in southeastern Utah, ML534 (Green and DeBloois 1974; Table 3.1), has been tree-ring-dated to the middle Pueblo I period. Like the Pillars Site, it is part of the large cluster of sites on Elk Ridge and adjacent upland areas. A number of other sites in this high upland area also appear likely to have been occupied in the middle Pueblo I period, and many of the larger sites may have occupations that straddle the boundary between the middle and late Pueblo I periods as we have defined them. There has been little excavation of these sites,

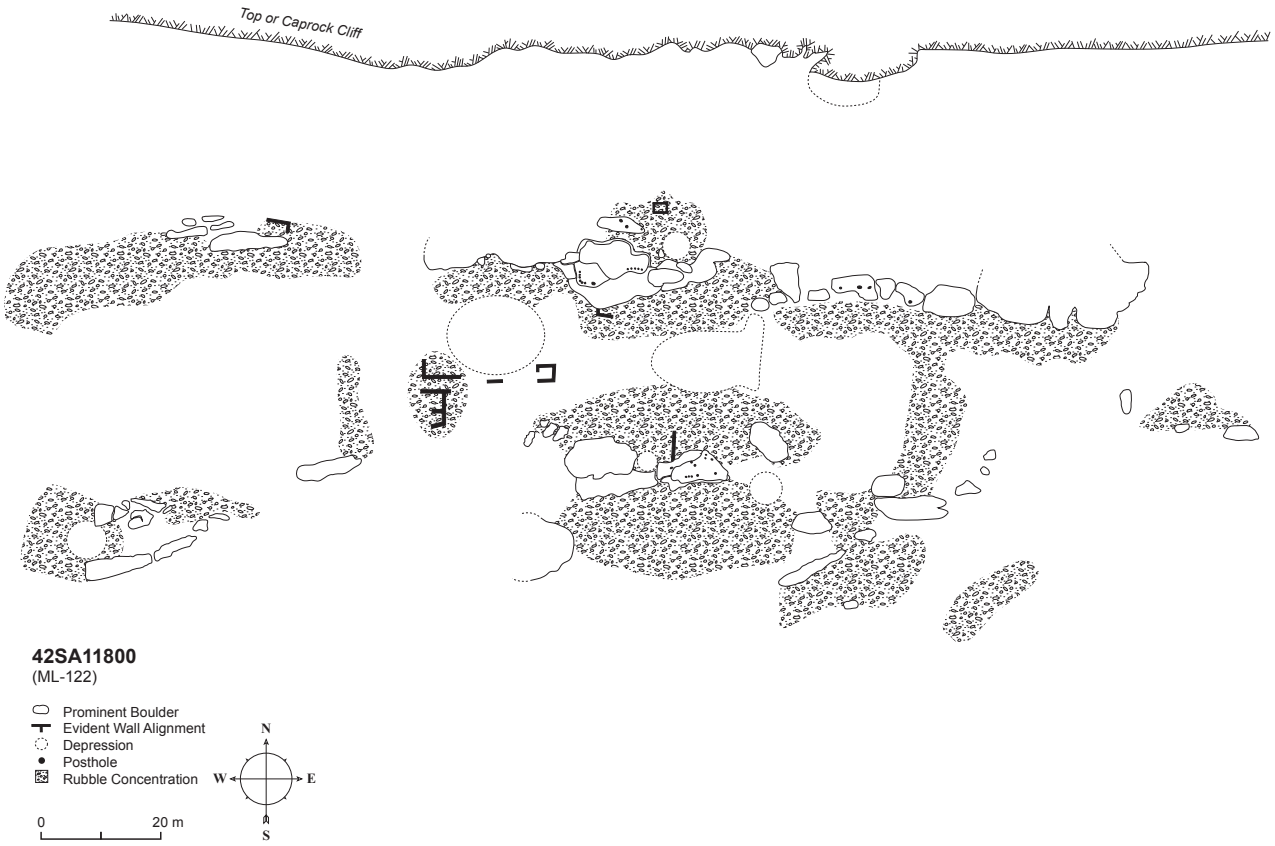


Figure 3.7. Map of the unexcavated middle Pueblo I village at the Pillars (42SA11800).

however, and many have small ceramic assemblages that are difficult to date precisely.

Closer examination of settlement pattern data has led Irwin (2011) to propose the existence of three separate communities in the high uplands on the basis of clustered site distributions. These site clusters occur on and near Milk Ranch Point, in the upper portion of Cottonwood Wash, and in the Allen Canyon/Chippean Ridge area just east of Cottonwood Wash. In some areas, small sites that apparently represent Pueblo I field houses extend into the ponderosa pine belt at elevations of 8,000 feet or more. Irwin observes a wide variety of site types within these site clusters and suggests that they may have functioned as unified communities. The reports associated with the original Elk Ridge Archaeological Project surveys implied that much of the occupation was seasonal (a viewpoint shared by Severance [2004, 2006a, 2008]), but the widespread, complex, and diversified settlement patterns documented in recent surveys suggest a more intensive long-term occupation by a growing and changing population.

Each of the three communities recognized by Irwin is evidenced by a dense cluster of single-and multiple-residence sites with satellite field houses, check dams, and terraces, and an array of isolated features and less substantial sites. Some of the larger multiple-residence sites, including the Pillars, Laura Pueblo (Chuipka and Fetterman 2002), and the Hammond Canyon Good House, had 30 or more rooms and approach or exceed the size necessary to be considered small villages. Laura Pueblo and the Hammond Canyon Good House both include large, unexcavated structures that are likely great kivas and probably functioned as focal sites for their communities. Unlike other Pueblo I villages, however, the community appears to have incorporated more than a single large settlement. These village- or near-village-sized settlements are surrounded by other smaller, apparently contemporary habitations, including multiple-residence sites with about 20

rooms, smaller sites with 5–10 rooms, and numerous single-residence sites. Some of the single-residence sites have substantial middens, suggesting more than seasonal use even for some small structural sites. Another interesting aspect of these communities is their defensive nature, which is suggested by "observation rooms" situated in elevated positions with panoramic viewsheds.

Late Pueblo I–Early Pueblo II Period (A.D. 880–950+)

Population began to increase again in southeastern Utah by the late ninth century. By A.D. 875 or shortly thereafter, population appears to have grown at a rate well in excess of natural growth rates. It is quite possible that this is due to the arrival of emigrants from the Dolores River Valley in southwestern Colorado, which witnessed a dramatic depopulation in the late 800s. By the first decades of the A.D. 900s, if not sooner, there appears to have been a relatively large population in the upland mesa-canyon area south of the Abajo Mountains, as well as along the bottoms of major drainages.

Interestingly, a number of the larger, late Pueblo I sites are built in defensible locations (Figure 3.6, see color plates; Hurst et al. 2010). Examples of these sites include Nancy Patterson Village (42SA2110), the Greasewood Flat mesita (unrecorded), Sacred Mesa (42SA3217), Gravel Pit Ruin (42SA14430), Moki Island (42SA17347), the "knob" mesitas at Red Knobs (42SA259/1964), the Duck Bowl mesita (42SA24475), and possibly Decker Ruin (42SA16962). Like their early Pueblo I antecedents, these sites often exhibit arrays of bedrock postholes and perimeter walls or boulder alignments.

Nancy Patterson and the Greasewood Flat site both occupy the tops of steep-sided mesitas overlooking confluences in the Montezuma Creek drainage. Both sites have remnants of informal, site-enclosing, slab-and-block walls that wrap around the perimeters of the mesa tops. Additionally, both sites contain relatively large features that may represent early great kivas.

The possible great kiva at Nancy Patterson consists of concentric circles of upright stone slabs measuring approximately 16 m in diameter (Thompson et al. 1986) (Figure 3.8). Limited testing

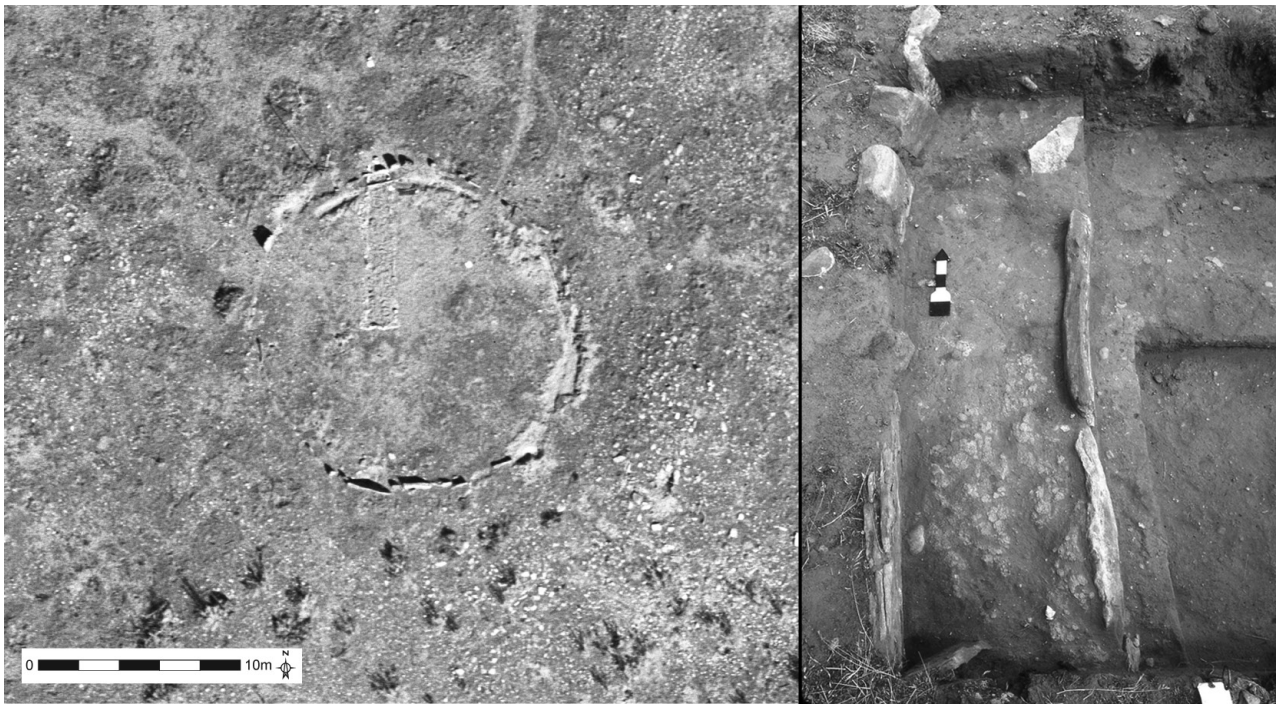


Figure 3.8. Left: Low-level aerial photograph of the circular plaza/great kiva at Nancy Patterson Village. A backfilled 1 by 8 m trench excavated in 1984 is visible in the photograph. Right: Photograph showing the two concentric rows of upright slabs that define the Nancy Patterson Village circular plaza. Photos courtesy of Edge of the Cedars State Park Museum.

found a compact use-surface but no prepared floor or subfloor features; late Pueblo I ceramics found below the use-surface suggest the feature was in use within a few decades of A.D. 900, though the date of its initial construction remains in question. The excavators referred to the feature simply as a "circular plaza" or as a "dance plaza," but its concentric rings of upright slabs defining a low interior bench are architecturally identical to several excavated structures that have been identified as great kivas (e.g., Juniper Cove [Gilpin and Benallie 2000], Broken Flute Cave [E. A. Morris 1980], and Singing Shelter [Nelson and Kane 1986]), although it is not clear that all these structures were roofed. The Nancy Patterson feature also has structural similarities to two large, circular features that lack interior features and may well have been unroofed dance structures, excavated by Paul Martin in his Ackmen-Lowry Site 1 (P. S. Martin 1939). Regardless of what we call it, it is clearly some kind of community-scale feature. Interestingly, both the Nancy Patterson and Greasewood Flat high mesita sites are located near later great house structures that are situated off the tops of the mesitas.

Not all of the large late Pueblo I sites were situated in an obvious defensive setting. A significant site that was almost certainly established by the late decades of the ninth century is the Bluff PI Site (42SA523/8303; also known locally as The Twin Rocks Site; Davis et al. 1990). Dramatically situated at the base of two tremendous columns of sandstone and shale and surrounded by a variety of other natural features of likely ritual/mythical focus, the site looks over the San Juan River Valley in the modern town of Bluff. The village covers over 3 ha and is composed of several sets of roomblocks arranged roughly in C- and L-shaped configurations. Although it seems unlikely that a village of this size would lack community-scale features, none has been identified. The large amounts of midden, present even today after 13 decades of looting and surface collection, bespeak the site's intensive occupation during the latter half of the ninth century and perhaps into the early A.D. 900s.

The Bluff valley appears to have continued as a center of social gravity with the establishment and use of the so-called Dance Plaza Site (42SA23748), located across the San Juan River southeast of the Bluff site (Jalbert 1999:70–78). The site encompasses a number of roomblocks and cists, as well as several features that probably represent public architecture and loci of ritual or cosmological significance (Hurst and Till 2010; Till 2009). The site's pottery assemblage suggests that its inception began near the end of the Pueblo I period, perhaps coincident with the cessation of activities at the Bluff PI Site. The abundance of late neck-banded and early corrugated gray ware pottery indicates that the site featured prominently in the early Pueblo II period.

The defining piece of architecture for the site, the "dance plaza" itself, is a low-walled rectangular structure that measures 10 m by 22 m. Based on surface evidence, the structure's walls appear to be of core-and-veneer construction with well-shaped sandstone blocks composing the veneer masonry. However, with no apparent mass being laid on this foundation, we propose that these walls might have served to define a ceremonial courtyard or plaza, perhaps an evolved equivalent of the earlier, slab-lined "dance circles." The dance plaza feature is associated with a striking pair of enormous boulders that are visible from most places in the Bluff valley. These boulders are covered with petroglyph panels, some of which appear to depict "emergence imagery," perhaps illustrating one or more aspects of Pueblo emergence traditions. Adjacent to these huge boulders are two lower boulders, one modified by several dozen grinding pads, the other by two large, deeply hewn pits approximately 60 to 70 cm deep. These features are strongly suggestive of shrine activity.

Farther north, the Edge of the Cedars site (42SA700) at Blanding may have been a village-sized settlement during this period. Unfortunately, most of the early village is obscured by later Pueblo II and Pueblo III period architecture, including a great house and great kiva. Test excavations within the state park and extensive looter disturbance outside the original park boundary have revealed substantial late Pueblo I–early Pueblo II architectural remains both under and extending beyond the area occupied by the rubble mounds of the later Pueblo II–III

village. The site's massive midden deposits are dominated by material from the late Pueblo I period (wide-clapboard Mancos Gray, Bluff Black-on-red, and White Mesa Black-on-white; Hurst 2000). Limited excavations have revealed a roomblock of substantial coursed masonry near the great kiva. It would require extensive, careful additional excavation to determine whether that structure represents an early version of the great house or if some version of the site's great kiva was extant during the early occupation.

Substantial stone masonry structures are found at a number of other large, late Pueblo I period sites in southeastern Utah. At the Red Knobs site (Allison 2004), for example, significant amounts of rubble and bedrock postholes suggest late Pueblo I period structures were built on the tops and slopes of two prominent sandstone knobs. The site is unexcavated, but it appears likely that there were multilevel structures terraced up the slope below each of the knobs. Similar structures appear to have been built at a nearby site known as the Red Knobs Annex (Site 4 in Allison 2004), which also features a masonry retaining wall, apparently of late Pueblo I age, that is at least 75 m long and encloses a plaza area (Figure 3.9, see color plates). A similar retaining wall has been documented at Laura Pueblo. Other noteworthy examples of late Pueblo I sites with substantial probable late Pueblo I–early Pueblo II masonry roomblocks include the Duck Bowl Site (42SA24475, partially documented by Irwin et al. 2000); the Hammond Canyon Good House; the Upper Dwarf site (42SA12631) on Elk Ridge (Hurst et al. 2004:6–370 ff.); the Climax Village complex in Cottonwood Wash (42SA8135); and the Parker Site in Recapture Wash. At Nancy Patterson Village, a full-story masonry wall completely buried by massive late Pueblo I–early Pueblo II midden deposits may represent a similar structure. These structures and their relationship to surrounding communities are strongly suggestive of "proto-great houses" analogous to those identified in northwestern New Mexico (e.g., Van Dyke 2007:70–97). Several sites in the Comb Ridge area, including the Arch Canyon alcove with its late Pueblo II–III great house, have evidence of less substantial but multistory construction in the form of post butt sockets high on cliff faces above Pueblo I structural remains or in association with substantial Pueblo I middens (Figure 3.10, see color plates; Hurst et al. 2008).

By the mid-900s, there appears to have been another depopulation of southeastern Utah, resulting in a decline in the number of sites. A few large settlements have moderate quantities of early corrugated ceramics (probably mostly from neck-corrugated vessels), suggesting they persisted into at least the late 900s. These include Nancy Patterson Village and Cave Canyon Village in Montezuma Canyon, and Sacred Mesa, Gravel Pit Ruin, and the Parker Site in Recapture Wash, as well as unrecorded sites in Chinle Wash south of the San Juan River.

Conclusions

As we noted at the beginning of this chapter, the early Pueblo settlement of what is now southeastern Utah exhibits patterns that complement and contrast with trends in better-known regions such as southwestern Colorado. Between A.D. 600 and 950, ancestral Pueblo populations in southeastern Utah waxed and waned, but were quite large in certain time periods. This period apparently also saw the development of community-scale organization and the first unambiguously recognizable villages.

More specifically, in the A.D. 600s, Basketmaker III populations increased dramatically, and small Basketmaker III settlements were spread across the entire region between the Colorado River and the current Utah–Colorado border. By the late 600s, several of these settlements aggregated to form multisite communities that included public architecture in the form of oversized pit structures. After an apparent population decrease in the early 700s, the first indisputable villages appeared at about A.D. 760, along with a new ceramic type, Abajo Red-on-orange, which was both technologically and stylistically distinct from earlier and contemporary white ware types in the area. Technological and stylistic similarities indicate that Abajo Red-on-orange potters were familiar with red-on-brown pottery from the southern Southwest, and immigrants from

far to the south likely were included among the residents of southeastern Utah's first villages.

The distribution of early Pueblo I settlements is more restricted than in the Basketmaker III period. Pueblo I sites are common from the Utah–Colorado line to a bit west of Comb Ridge, but from there west to the Colorado River there are very few Pueblo I sites. The western frontier of Pueblo I settlement was marked, at least in early Pueblo I times, by a line of defensible sites built on mesitas or small buttes with limited access.

The tendency for early Pueblo I sites in southeastern Utah to be built in defensible locations suggests that conflict, or threat of conflict, was an important factor in the formation of early Pueblo I villages. Direct evidence for conflict is limited, although most of the excavated storerooms at Site 13 burned with their contents intact. This suggests the village may have been a victim of malicious arson, leaving storerooms full of charred food and at least one individual dead but not properly buried (Allison 2012; Hurst et al. 2010).

It is difficult to identify sites in southeastern Utah that date to the middle Pueblo I period, between A.D. 800 and 880, although many of the poorly dated sites in the high uplands south of the Abajo Mountains may have been occupied by A.D. 850. Village-sized aggregates are particularly difficult to find from the middle Pueblo I time period, which coincides with the peak of Pueblo I village population in southwestern Colorado. The situation changed dramatically after A.D. 880, however. Populations in southeast Utah increased significantly, and many large settlements were occupied. Defensible sites from the late 800s or early 900s are common, although these are mostly in lines along the major drainages rather than along the western frontier of settlement. By the late 900s, a few large sites remained, but overall population probably declined after the first few decades of the tenth century.

Data limitations have necessitated that we restrict discussion to broad patterns while giving short shrift to a number of topics that deserve further study and more extended treatment than we can provide here. One of these is evidence for cultural diversity, particularly as reflected in the contrast between red ware and white ware ceramic technology and designs. Severance (2003, 2004, 2006a, 2006b, 2008) has argued for even finer-grained interpretations of cultural diversity with regard to shifting Pueblo I communities in the Comb Wash–Cottonwood Wash area. Among other things, Severance asserts (based largely on perceived differences in the relative abundance of "black paste" ceramics) (1) that there were two different immigrant Mesa Verdean groups that arrived in the middle–late Pueblo I period, one apparently settling in Cottonwood Wash, the second in Comb Wash; (2) that "the South Cottonwood people utilized Milk Ranch Point and the Brushy Basin drainage for farming while the Comb Wash people used Milk Ranch Point and the South Cottonwood drainage above the vicinity of Red Knobs" (Severance 2006a:13); and (3) that the "Comb Wash people" introduced check dam technology starting in Comb Wash. These precocious attempts to identify fine-grained ethnic or community distinctions and dynamics on a relatively local scale are praiseworthy and foreshadow important future discussions along these lines; unfortunately, they are subjective inferences based on personal field observations and presented without supporting data, and subsequent surveys in the area have not as yet yielded strong support for them (e.g., Hurst and Robinson 2009:255 ff.).

Other topics that deserve further discussion include the role of red ware production and exchange in regional-scale interactions; the diversity of public architecture and what that implies about the role of ritual in early Pueblo society; the apparent symbolic importance of prominent paired geologic features such as the "knobs" at Red Knobs and an array of features in the Bluff locality; the patterned variability in style, distribution, and content in rock art; and the role of warfare or perceived threats of violence in providing an impetus for early village formation. Despite a long history of research, we have barely begun to document and understand the rich record of early Pueblo communities in southeastern Utah, and its foundational importance to our understanding of subsequent Pueblo history and culture.

CHAPTER 4

The Eastern Mesa Verde Region:

Migrants, Cultural Diversity, and Violence in the East

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THE EASTERN MESA VERDE REGION straddles the Colorado–New Mexico border and encompasses the upper reaches of the San Juan River and its tributaries. The area comprises four main archaeological locales or districts: the La Plata District, which crosses the Colorado–New Mexico border; the Durango District in the Animas River drainage and centered on the modern town of Durango, Colorado; the Piedra District, which encompasses the area on the Colorado side between the upper San Juan River and the Animas River drainage; and the Navajo Reservoir/Fruitland area near Aztec, New Mexico (Figure 4.1). In this chapter, we first discuss the early (A.D. 750–825) and late (825–900) Pueblo I period occupations of the eastern Mesa Verde region with respect to each of these archaeological districts. Following this, we explore several interrelated topics important for understanding the dynamics of this occupation, including the movement of migrants through the region, the organization of populations into some of the earliest aggregated villages in the northern Southwest and the cultural diversity exhibited in these early aggregated settings, and the occurrence of violence and the role that it played in village formation and collapse.

SETTLEMENT AND CHRONOLOGY

This section presents basic settlement and chronology data for each district composing the eastern Mesa Verde region. The data are based primarily on excavation and tree-ring results. To highlight true construction dates, only cutting or near-cutting tree-ring dates are considered in this analysis (i.e., "r", "c", and "B" dates).[1] Additionally, when consolidating data from a number of features from an area, only the five latest cutting dates per feature are included, unless there is clear evidence of multiple construction episodes within a single feature. This was done to both avoid having any single feature swamp the data (for example, Feature 5 at LA 27092 yielded 43 cutting and near-cutting dates, all within a very short interval [Silverman 2003: table 3-1]), and having dates from timbers salvaged and incorporated from earlier structures skew the distribution. The limited tree-ring data from the La Plata River and Piedra Districts are here supplemented with survey data. Finally, when possible, occupation in the periods immediately preceding and following the Pueblo I period is included in the analysis for comparative purposes.

La Plata District

The La Plata River drainage marks the westernmost boundary of the eastern Mesa Verde region.

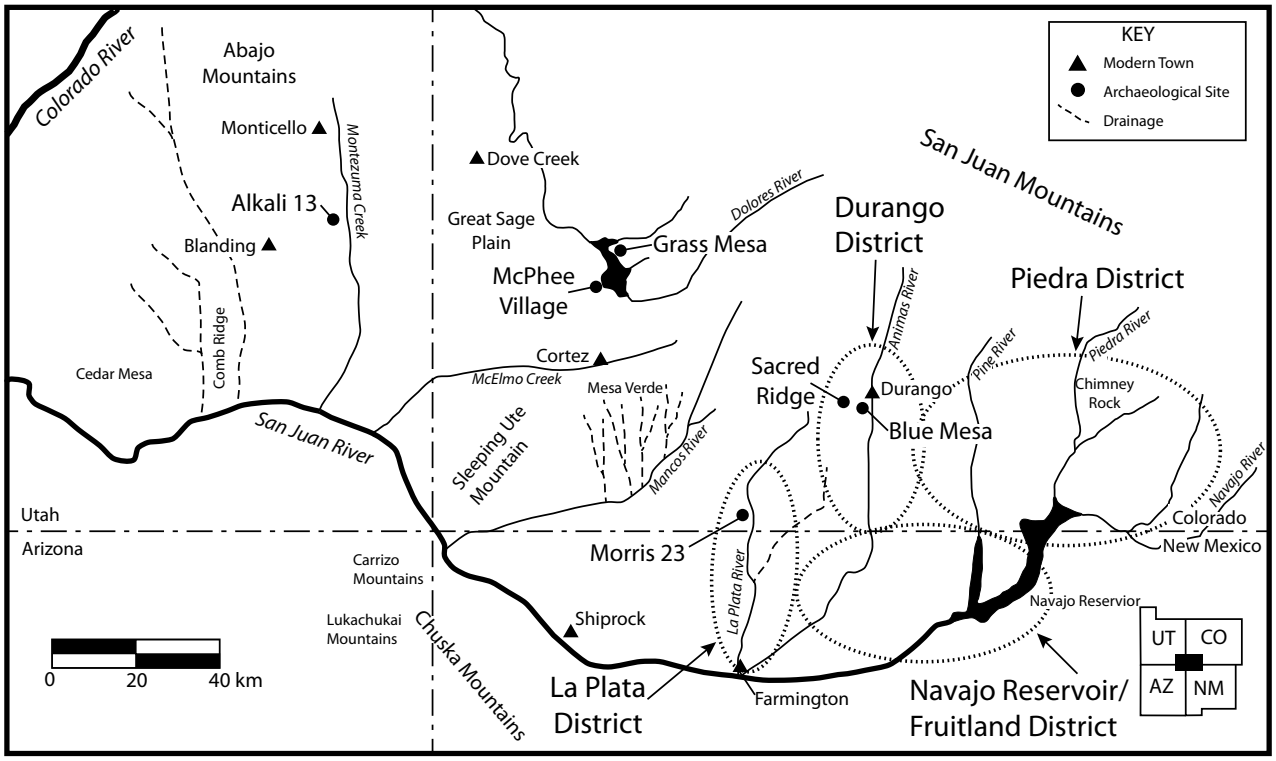


Figure 4.1. Map depicting the four archaeological districts composing the eastern Mesa Verde region.

Emanating from the La Plata Mountains in Colorado, the La Plata River flows roughly due south, across the Colorado–New Mexico state line, to the Totah, the area where the San Juan, Animas, and La Plata rivers come together, near the modern town of Farmington. Elevations along this river range from around 8,000 to around 5,300 feet. As noted by Toll and Wilson (2000:19), the river crosses the 6,000-foot line very near the state line, and this line appears to mark a southern boundary of occupation for Pueblo I period sites.

Much of the work on Pueblo I period sites in this area was conducted by Earl Morris between 1913 and 1930 (E. H. Morris 1939). Morris conducted excavation at four sites in the La Plata drainage that dated to the Pueblo I period—Sites 18 and 25 in Red Horse Gulch, and Sites 23 and 34 along the La Plata (Figure 4.2). Site 18 consists of at least three surface roomblocks, a refuse mound, and two pit structures described as "protokivas" (E. H. Morris 1939:57–62). This site contained "banded-necked" vessels and thus likely dates to the Pueblo I period. Neck-banded gray wares date from 775 to 900 but are more common after 800 (Allison 2005:8).

Site 25 is a cluster of pit structures and rows of arced surface rooms extending about 1,000 m along the slope of a ridge (see also Wilshusen et al., Chapter 2). The site was heavily eroded but appeared to Morris to contain numerous roomblocks. During his 1922 excavations of the site, he obtained tree-ring samples, most of which are unprovenienced. The latest of these is a cutting date of 876 (Robinson and Harrill 1974:33). Coupled with a tree-ring date of 836 derived from "Building IV" (E. H. Morris 1939:63), this places the site in the late Pueblo I period. A "small amount of digging" revealed Site 34 to contain at least one lengthy roomblock and several neck-banded vessels (E. H. Morris 1939:75, pls. 214c 217c), likely placing it in the Pueblo I period. Site 23 was the largest and most thoroughly investigated Pueblo I site. In 1927, Morris investigated five habitation units (Buildings I–IV and Protokiva 7) (E. H. Morris 1939:67–75). Up to 70 households were identified, most of which

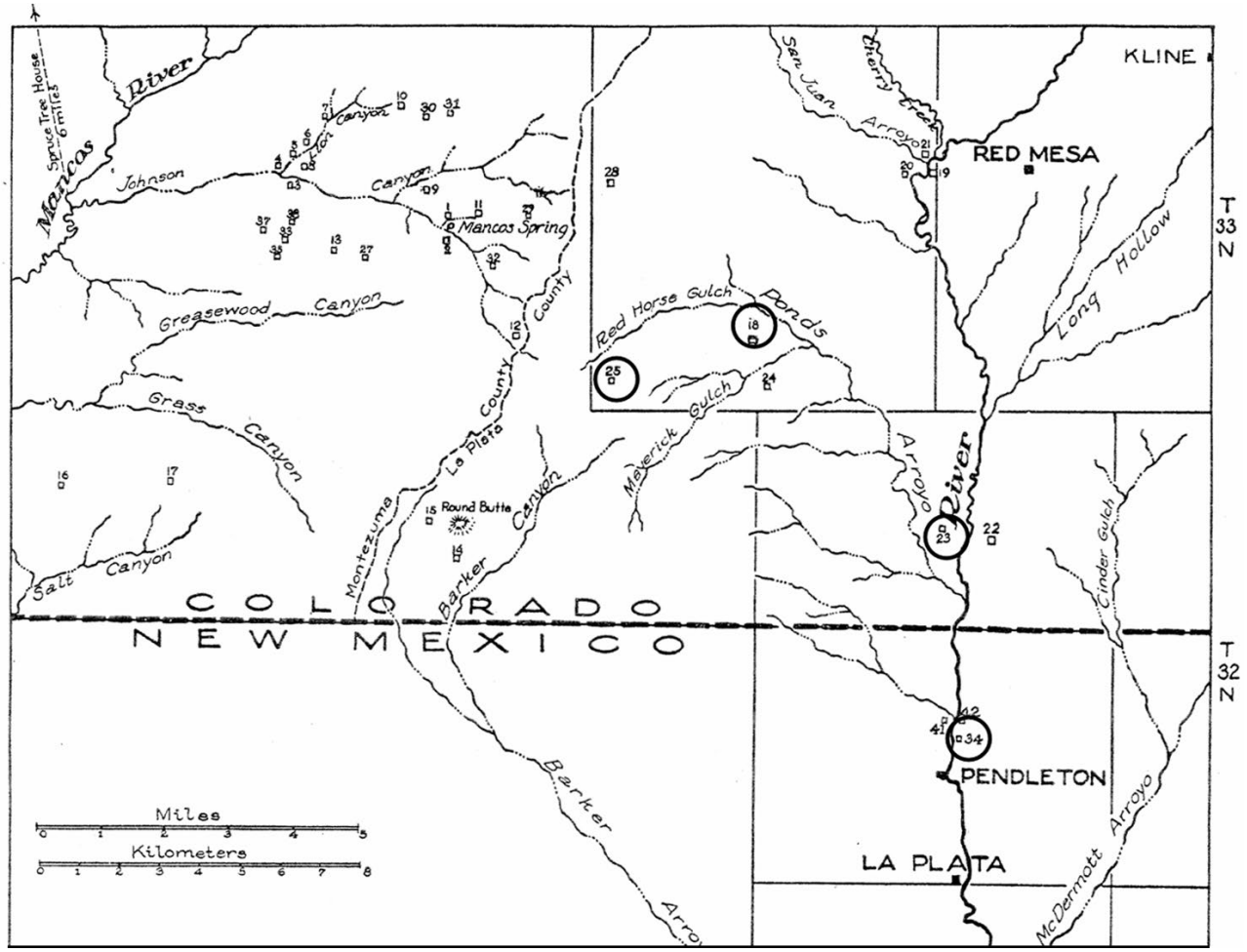


Figure 4.2. A portion of E. H. Morris's 1939 map of the La Plata drainage. Pueblo I sites excavated by Morris are circled. Adapted from E. H. Morris 1939: fig. 2.

appear to date to the middle and late eighth century A.D. (Figure 4.3).

In 2007, Jason Chuipka remapped Site 23 and conducted limited testing and surface collection (Chuipka 2008a). Fifty-two pit structures were identified, one of which appears large enough to have been a great kiva. Twenty-nine of these were burned and appear to have been the latest structures occupied on the site, based on the absence of cultural debris in the upper fill. In-field ceramic analysis corroborated an early Pueblo I period occupation for the site. "Most of the whiteware assemblage comprised Rosa Black-on-white and Chapin/Lino Black-on-white sherds, both of which are characteristic of the earlier part of the Pueblo I period (Blinman 1988a)" (Chuipka 2008a:122). Consequently, the occupation of this large site appears to have been contemporaneous with the Pueblo I occupations of Ridges Basin and Blue Mesa, along the Animas (see below), and comparably short-lived.

In 1994, SWCA conducted a sample survey of 8,800 acres in and around the La Plata drainage in New Mexico and Colorado for an early incarnation of the Animas–La Plata Project (Chenault 1996). Results of this survey indicate several general trends for the Pueblo I occupation (Table 4.1). The first is that Basketmaker III–Pueblo I (A.D. 650–725) habitation sites are present in both the La Plata and Mancos drainages. Second, over half (57 percent) of all Pueblo I habitation sites in the La Plata drainage date to the early Pueblo I period. Third, no Early Pueblo I or Pueblo I sites (A.D. 725–900) were recorded in the La Plata drainage south of the state

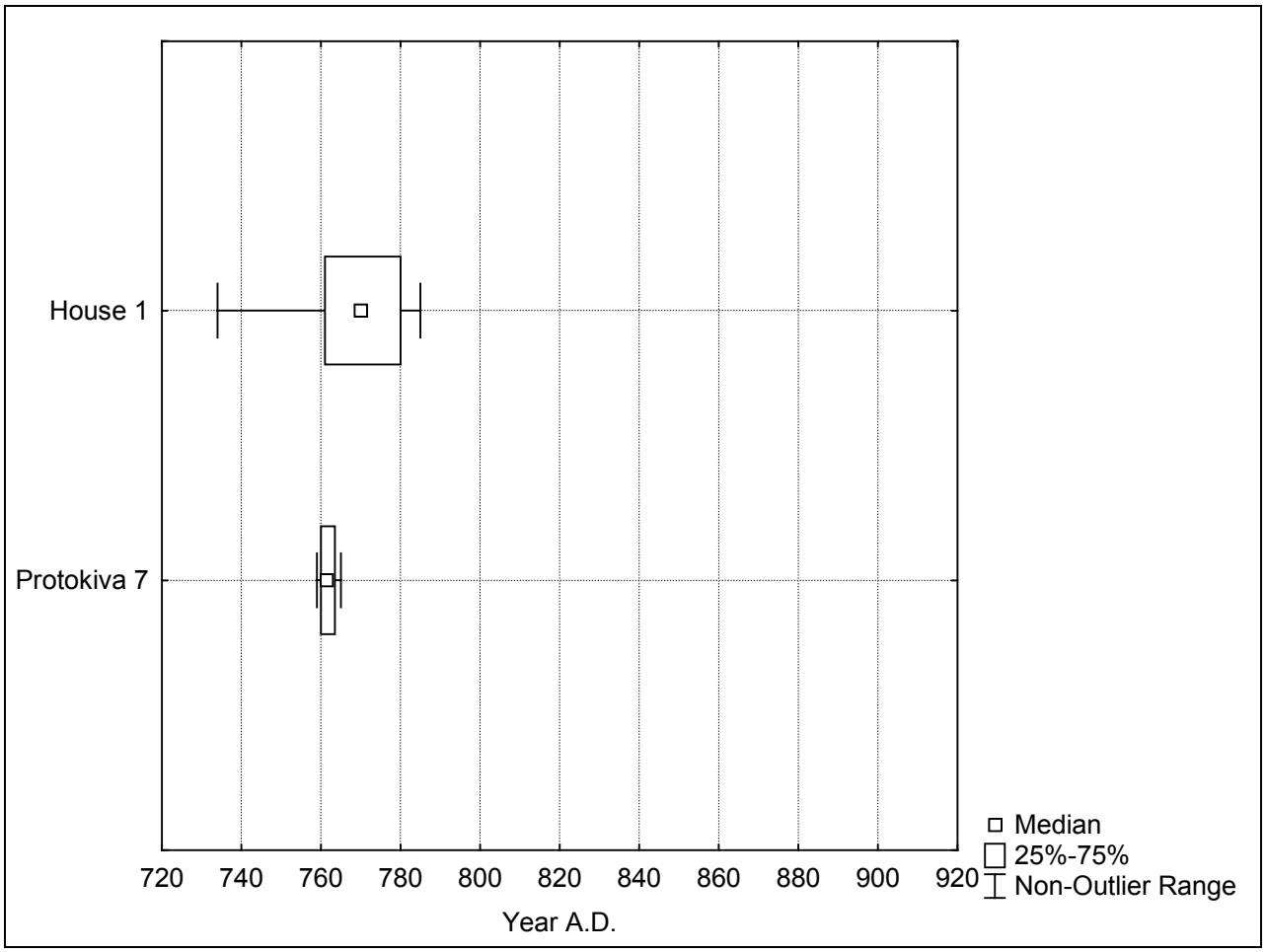


Figure 4.3. Box and whisker plots of cutting and near-cutting dates recovered from House I and Protokiva 7 at Site 23, as reported by Robinson and Harrill (1974:34–35).

Table 4.1. Counts of habitation sites by period of occupation, A.D. 650–950

Drainage	BM III–P I (650–725)	Early P I (725–800)	P I (800–900)	P I–P II (900–950)	Total Sites
La Plata drainage (CO)[a]	4	13	5	1	23
	(17)	(57)	(22)	(4)	(100)
La Plata drainage (NM)[b]	2	0	0	2	4
	(50)			(50)	(100)
Mancos River drainage[c]	13	16	33	18	80
	(16)	(20)	(41)	(23)	(100)
Total	19	29	38	21	107

Source: Based on 10% sample survey by SWCA of portions of the La Plata and Mancos drainages. Row percentages in parenthesis (Chenault 1996).

[a] Kline, Mormon Reservoir, Redmesa, and Pinkerton Mesa Quadrangles.

[b] La Plata, New Mexico Quadrangle

[c] Trail Canyon, Red Horse Gulch, Greasewood, Heifer Point Quadrangles

line. And finally, most of the Pueblo I sites recorded in the Mancos River drainage to the west of the La Plata date after 800.

Durango Archaeological District

The Durango Archaeological District comprises the Animas River drainage north of the state line. Much of the Pueblo I occupation is located in and around the modern town of Durango. Unlike the La Plata River drainage, most data on Pueblo I occupation derives from recent excavations, most notably as part of the Animas–La Plata Project (Chuipka 2009b; Chuipka and Potter 2007; Potter and Yoder 2008a, 2008b; Yoder and Potter 2007). Much of the work prior to this was not well controlled or reported. Several projects, however, were notable exceptions. They are discussed here and included in the analysis.

In 1938 and 1940, Earl Morris excavated at the well-known Basketmaker II sites of Falls Creek and Talus Village (Morris and Burgh 1954) and at six Pueblo I sites in nearby Hidden Valley. Reported by Carlson in 1963, these later sites were part of a larger dispersed Pueblo I community and consisted of single-residence habitations dating to the A.D. 760s, based on a number of tree-ring dates (Carlson 1963). In 1976, John Gooding excavated two single-residence habitations in Durango dating to the late 700s. Eleven tree-ring dates were recovered, one of which was a cutting date of 766 (Gooding 1980:22). Steve Fuller, too, excavated several single-residence Pueblo I habitations in Bodo Canyon, adjacent to Ridges Basin (Fuller 1988a). Tree-ring dates from these sites indicate occupation in the late 700s; twelve dates were recovered, two of which were cutting dates of 760 and 800. Finally, in 1980, 1994, and 1999, Jerry Fetterman excavated a total of four Pueblo I habitation sites as part of three pipeline projects through Ridges Basin and Blue Mesa (Fetterman and Honeycutt 1982; Horn et al. 2003). Three of these sites were single-residence habitations; one site (5LP239) contained two pit structures. Cutting dates from this site ranged from 781 to 839, which to date is the latest tree-ring date in the Durango District.

Excavations for the Animas–La Plata (ALP) project occurred from 2002–2005 in Ridges Basin and Blue Mesa, just south of the town of Durango (Potter and Chuipka 2007; Potter 2010). These areas are relatively small and comprise less than 8 km^2. Thirty-three Pueblo I habitations were excavated, several of which were multiple pit structure habitations and one of which—the Sacred Ridge Site—was an aggregated village containing 22 pit structures (Chuipka 2009b). Two distinct, but roughly contemporaneous early Pueblo I (A.D. 750–825) communities appear to have occupied Ridges Basin and Blue Mesa. The Ridges Basin community comprised about 100 households and, with the exception of the Sacred Ridge site, was highly dispersed throughout the basin. Sacred Ridge, located at the west end of Ridges Basin on a large knoll, contained four oversized pit structures and appears to have been the social and ritual center for this community (Potter and Chuipka 2007). In general, Blue Mesa was more tightly aggregated and comprised approximately 74 pit structures (Chuipka and Potter 2007:239). However, it did not contain a large village center or any apparent communal ritual features. By 820, both communities appear to have been largely depopulated.

Figure 4.4 presents tree-ring dates from well-controlled/reported Pueblo I contexts in the Durango District, including those recovered from Ridges Basin and Blue Mesa (Fetterman and Honeycutt 1982; Horn et al. 2003; Potter and Chuipka 2007), Hidden Valley (Carlson 1963), Bodo Canyon (Fuller 1988a), and the Durango South Project (Gooding 1980). The main occupation of this district clearly occurs between 725 and 820 (the earliest cutting date is 729 from Sacred Ridge), and there is a surge of construction after 750. Prior to this, there is an absence of evidence of a substantial resident (Basketmaker III) population.

Within this 100-year period, though, there is some population movement and reorganization. While pre-800 occupation occurred throughout the Durango District, post-800 dates occurred only in Ridges Basin and on Blue Mesa. Thus, following a population influx into the general Durango area at about 760, at about 800 there appears to be a

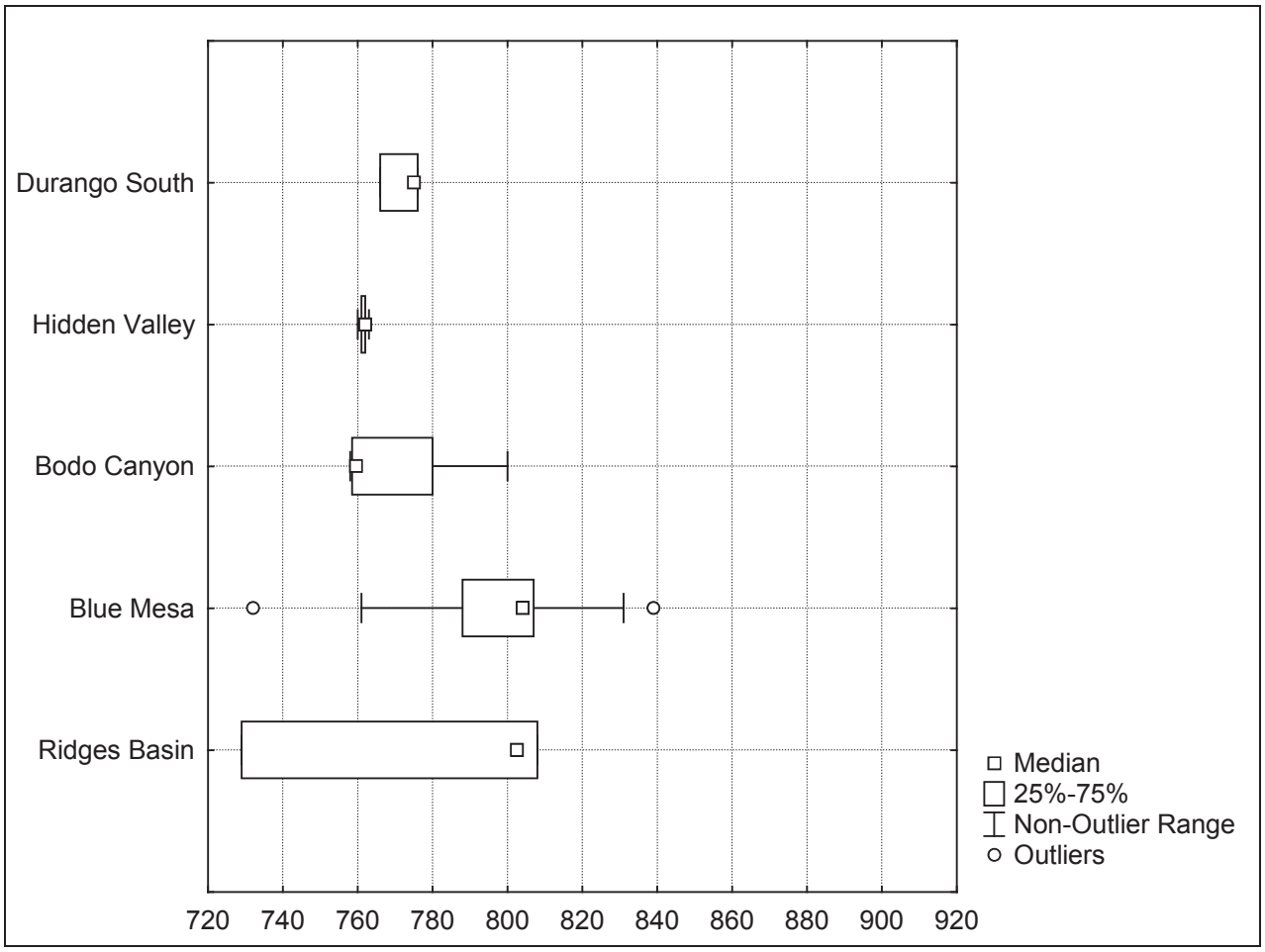


Figure 4.4. Box and whisker plots of cutting and near-cutting dates from Pueblo I sites in the Durango District.

contraction of population into Ridges Basin and Blue Mesa. The entire area is then mostly depopulated by about 820 or 825. The late dates associated with site 5LP239 represent a reoccupation of that site in A.D 831, after a hiatus of more than a decade; but there are no data to suggest that this was a widespread pattern on Blue Mesa (Chuipka and Potter 2007:237, 239).

Piedra Archaeological District

The area drained by the Los Pinos, Piedra, and upper San Juan rivers—also referred to as the Piedra Archaeological District—is the least well-investigated of the four eastern Mesa Verde districts. Six early excavation projects (1920s to 1960s) produced tree-ring dates for Pueblo I sites in this district, but little work on early pueblo sites has been conducted since.

Along the Los Pinos River, Holt Homestead was excavated in 1936 by I. F. Flora. The site consists of a Basketmaker III pit structure with jacal surface rooms. One non-cutting date of 635 was recovered from the site (Flora and Daniels 1941; Dean 1975). Also along the Los Pinos, a series of small sites were investigated in the 1930s, and the tree-ring samples recovered were published by Flora (Flora and Daniels 1941). None were cutting dates, but all suggest an occupation in the 800s. Little else is known of these sites, including their exact location.

Farther east, along the Piedra River, two projects recovered excavation data from Pueblo I sites. The largest occurred in the 1930s on Stollsteimer Mesa and was conducted by Frank H. H. Roberts in conjunction with his excavations at Chimney Rock. This project recovered tree-ring dates excavated from three Pueblo I sites, “A Village,” “B Village,”

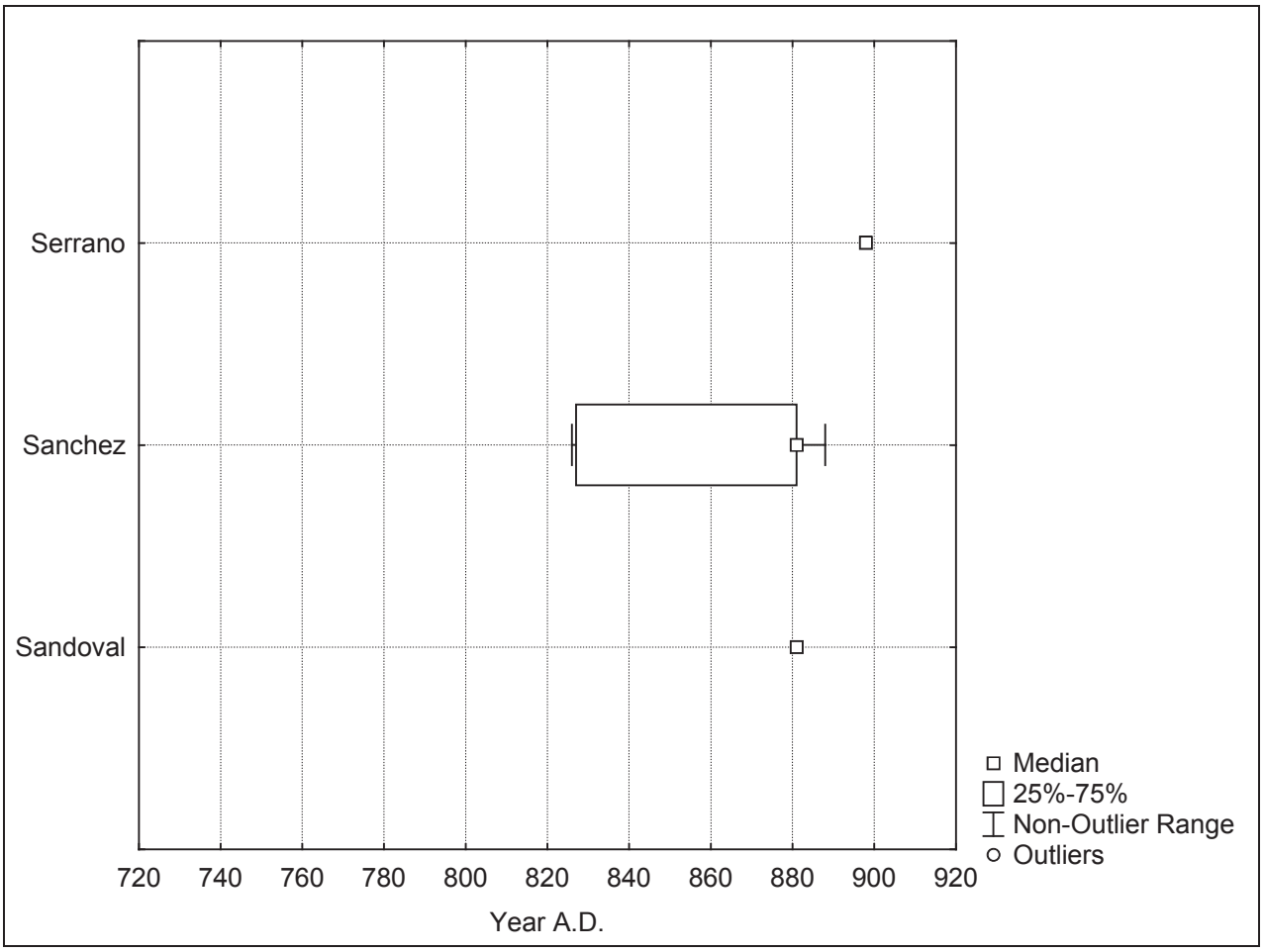


Figure 4.5. Box and whisker plots of cutting and near-cutting dates from Pueblo I sites in the Piedra District.

and "C Sites" (Jeançon 1922; Roberts 1925, 1930). These villages include more than 30 sites on the top and slopes of Stollsteimer Mesa. Tree-ring dates from these pit structure clusters range from 597 to 1011. As noted by Dean (1975:16), "evaluation of the Piedra Villages dates is hampered by the poor provenience control on the samples and by the lack of cutting dates." However, the predominant ceramic type on the Stollsteimer Mesa sites is Piedra Black-on white (Roberts 1930), likely placing them in the late Pueblo I period (the Piedra style starts around A.D. 800 and continues into the early 900s [Allison 1995:8]). The Serrano Site, also located along the Piedra, consists of six serially occupied pit structures and a surface roomblock of seven to ten rooms. Tree-ring samples were collected in 1959 by James Hester during salvage excavations by the Museum of New Mexico (Hester and Shiner 1963). The dates from these samples place the site in the mid to late 800s.

Between the Piedra and the upper San Juan rivers is the Sanchez Site, which was excavated by Frank Eddy in 1961 as part of a Museum of New Mexico salvage project (Eddy 1961:161–181). This site contained three pit structures with construction dates ranging from 827 to 881. Eddy (1966:198–212) also describes excavations along the upper San Juan at Sandoval Village, which consisted of six pit structures and a possible great kiva. A cutting date of 881 was recovered. Yet Dean (1975:22) suggests the main occupation occurred between 900 and 1000.

Figure 4.5 presents all Pueblo I period cutting and near-cutting dates from three of these projects. (As indicated above, several of these projects produced only non-cutting dates). Note the lack of dates in the eighth and tenth centuries A.D. Recent

survey in the Los Pinos and Piedra River drainages area by Woods Canyon Archaeology Consultants (see below) indicates a sizable population in Piedra Valley in the post-900 period, however.

In a recent study conducted as part of the Animas–La Plata Project, Wilshusen (2009) observed that "there are no well-documented Basketmaker III sites, that is, dating to A.D. 500–750, which have been excavated east of the Animas so far," corroborating the pattern presented in Figure 4.5. Querying the Colorado Historical Society's main site databases, he concludes that most of the "Basketmaker III" sites in the district are in fact Pueblo I in date. He notes that several clusters of sites are classified as Basketmaker III in the state site database—for example, those in the Spring Creek National Register District along the Los Pinos. Yet, in all cases for which he could obtain data, these sites have ceramic assemblages or tree-ring construction dates that place their occupations after A.D. 770 (Wilshusen 2009:21). Moreover, as suggested by Figure 4.5, Wilshusen (2009:25) notes that east of the Los Pinos, most Pueblo I sites date to the late Pueblo I period (A.D. 825–900) (see also C. E. Adams 1975).

Woods Canyon's 148,800-acre Northern San Juan Basin Settlement Survey Project (NSJB Project) has begun to clarify the temporal affiliation of many sites recorded as "Basketmaker III/Pueblo I" in the Los Pinos and Piedra River drainages. This survey involved both intensive survey and a review of all existing site data for the project area. A more detailed analysis of 110 sites in the summer of 2008 has yielded data that support Wilshusen's conclusion that most sites date to the late Pueblo I period. In some cases, sites that had previously been considered as Pueblo I appear more likely to date to the early Pueblo II period (A.D. 900–1050). An unexpected outcome of the NSJB Project is the reduction of both the Pueblo I presence and the size of aggregations in both the Los Pinos and Piedra River drainages. Many sites recorded as multiple-unit habitations or villages have been found to be considerably smaller in extent. For example, a small ridgetop in the Spring Creek National Register District (sites 5LP809 and 5LP810) had originally been recorded in 1978 as containing 12 pit structure depressions of Basketmaker III/Pueblo I cultural affiliation. Revisitation to these sites in 2008 found there to be one habitation unit and one possible depression. Rather than a village, this ridge appears to have been the location of a single habitation. Ceramic analysis concluded that the site was occupied around A.D. 850, or the middle to late Pueblo I period.

The NSJB Project has not found any Pueblo I villages in the portion of the Piedra that falls into the survey area. The exception may be Piedra Village (Roberts 1930), which is within the project area but on private land. It is not entirely clear how much of this site dates to the Pueblo I period and how much is actually from the Pueblo II period. Large pit house villages persist around Chimney Rock until at least A.D. 1050, if not later, and some of Piedra Village may be considerably later than commonly thought. The Pueblo I presence in the upper Piedra River is sparse and limited to single-unit habitations that are widely scattered. It appears that prior to A.D. 900, the Piedra was peripheral to the large Pueblo I settlements to the south and west.

Navajo Reservoir/Fruitland District

The area in northern New Mexico between and including the Animas and upper San Juan River drainages is referred to here as the Navajo Reservoir/Fruitland District, named after the two locales in which most Pueblo I research has been conducted. This area has been also referred to as the Gobernador District.

In the early 1940s, E. T. Hall investigated a series of sites near Gobernador, New Mexico. Tree-ring dates from these sites provided some of the first absolute dating for the Pueblo I period in this region (Hovezak and Sesler 2002a:56). Results from Hall's Sites 1 (LA 2120), 11 (LA 2121), and 12 (LA 2122) indicate occupation in the mid-ninth century for these sites and for Pueblo I occupation in general (Hall 1944; Robinson et al. 1974) (Figure 4.6).

The most significant contribution to Pueblo I research in the area occurred in the 1950s and 1960s as a result of construction of the Navajo Reservoir (Eddy 1966). Sites that were excavated

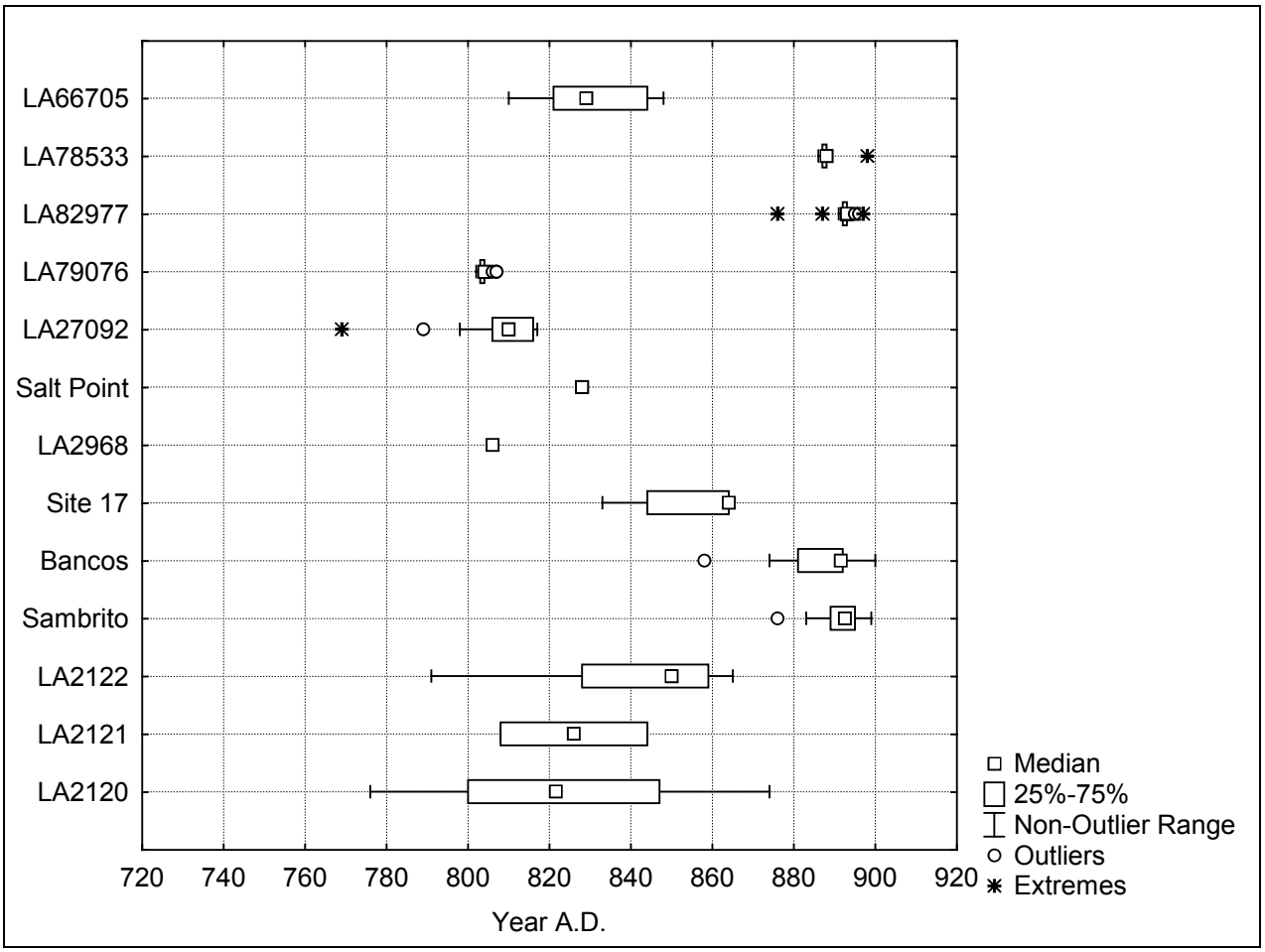


Figure 4.6. Box and whisker plots of cutting and near-cutting dates from Pueblo I sites in the Navajo Reservoir/ Fruitland District.

and that produced tree-ring dates included Sambrito Village (LA 4195) and Bancos Village (LA 4380) (Figure 4.6). This project, building on Hall's work, established the Rosa phase as a recognizable phenomenon dating from about 750 to 850. Yet, as noted by Hovezak and Sesler (2002a:56–57), the project recovered no absolute dates for the Rosa sites, including Sambrito Village, the largest Rosa phase site.

If one looks closely at the cutting dates or clusters of non-cutting dates, the admittedly small available tree-ring record for the Rosa phase in the project area does not support an occupation prior to about A.D. 790–800. It is of additional significance that according to the temporal phase constructs defined during the reservoir project, Hall's Rosa sites in the Gobernador district should be classified as Piedra phase sites or transitional between the two (Hovezak and Sesler 2002a:57).

Similar chronometric results were obtained by La Plata Archaeological Consultants when from 1991 to 1994 they investigated 46 sites in the Fruitland coal gas development area, between the Animas River and Navajo Reservoir (Hovezak and Sesler 2002a). Three Pueblo I habitations were excavated, two of which, LA 78533 and LA 82977, produced tree-ring dates indicating occupation from about A.D. 890 to 900.

In the mid-1990s, work at two sites near Cedar Hill, NM—just south of the state line and west of the Animas (but still within the Animas drainage)—recovered tree-ring dates which Wilshusen (1995) argued were representative of the occupation of two

adjacent and dispersed Pueblo I communities. These dates clustered in the late ninth century A.D., and Wilshusen argues that the communities represent a single late ninth- and early tenth-century occupation dating primarily between A.D. 885 and 915. He also notes that the limited Basketmaker and early Pueblo I components suggest that the communities represent immigrants into the area. He proposes that the Cedar Hill communities are part of a major settlement shift from north to south.

In 1999, 77 Pueblo I sites were documented on Frances Mesa (Wilshusen et al. 2000), three of which (LA 68328, LA 66704, and LA 66705) produced tree-ring dates. Only LA 66705 produced cutting dates (Figure 4.6). Wilshusen et al. (2000) propose that these sites represented a relatively short-lived community of immigrants from farther south, and suggest that this community was part of a larger population immigration from south of the San Juan River that contributed to the growth of the northern Pueblo I villages between A.D. 820 and 860 (Wilshusen 2009). Wilshusen (2009:16) also notes that "the few Piedra phase sites on Frances Mesa postdate A.D. 880, after the northern villages in the central Mesa Verde region were vacated."

Figure 4.6 presents cutting and near-cutting dates from the Navajo Reservoir/Fruitland area as derived from the projects and sites described above, as well as dates from LA 2968 and Salt Point (Robinson et al. 1974:85–86). Patterning suggests an increase in settlement in the area from about A.D. 800 until about A.D. 900.

Summary

The limited data presented above indicate several general patterns for the Pueblo I occupation of the eastern Mesa Verde region. The first is that Pueblo I occupation in each of the districts represents relatively short intervals. Settlements were short-lived, and populations in each of the districts appear to have moved after a generation or two. Early Pueblo I (A.D. 750–825) populations were concentrated in the La Plata and Durango districts, at elevations above 6,000 feet. Late Pueblo I populations (A.D. 825–900) were found mostly to the east and south of Durango, in the Piedra and Navajo Reservoir/Fruitland districts, and immediately to the west of the La Plata, in the Mancos River drainage (Figure 4.7).

There appears to be very limited occupation just prior to the Pueblo I period in all four of the districts. This is particularly the case for the Durango and Piedra districts, which have no well-dated Basketmaker III sites. The La Plata River basin has the most substantial pre-750 occupation, yet even here populations were in the lower portion of the basin and probably were too small to account for Pueblo I population levels. The Navajo Reservoir/Fruitland District has very limited pre-800 occupation as well, according to the tree-ring data available.

The following section explores these general trends in more detail to trace population movements through and within the region during the Pueblo I period and discuss how these populations organized themselves on the landscape as they moved.

MIGRATION AND POPULATION DYNAMICS

Due to the relative paucity of sites in each of the districts prior to the Pueblo I period, large initial increases in site frequencies in this period are considered a result of population movement (i.e., immigration). The La Plata District may be the exception; there may have been a large enough Basketmaker III population to account for the numbers of early Pueblo I sites. However, the threefold increase of early Pueblo I sites compared with late Basketmaker III sites, as indicated by the results of the sample survey conducted by Chenault (1996), suggests that immigration occurred in this district in the early eighth century (see Table 4.1). Likewise, immigrants appear to have settled Durango in the mid-eighth century (Figure 4.4), the Piedra between 825 and 900 (Figure 4.5), and in the Navajo Reservoir/Fruitland District just after 800 (Figure 4.6). Where did these people originate from and how are they related?

Wilshusen has proposed one plausible scenario (2009; Wilshusen and Ortman 1999). He suggests that, starting in A.D. 750, migrants moved northward from New Mexico into the sparsely populated

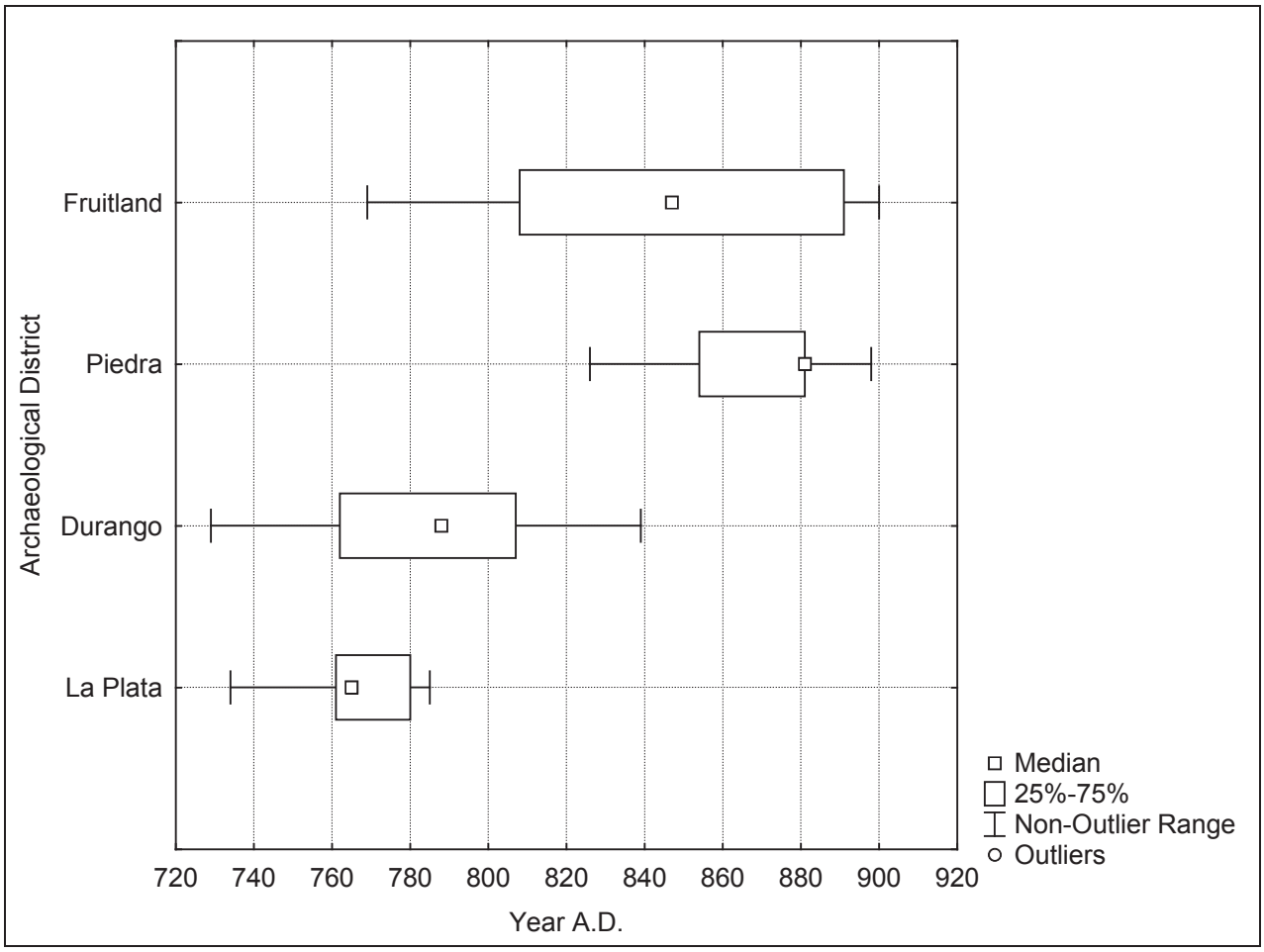


Figure 4.7. Box and whisker plots of cutting and near-cutting dates by archaeological district.

Durango area. In the early 800s, these populations left Durango, migrated west, and settled in large villages in the central Mesa Verde region until about 875. Between 875 and 925, these groups moved east and south into the Fruitland area and, by way of the upper San Juan drainage, into the Piedra District. From here, populations made their way south into Chaco (Wilshusen and Van Dyke 2006).

The data presented above to do not contradict this sequence. Additional population movements may have occurred within this general framework, however. For example, the Durango population may have fractured and gone in several different directions in the early 800s; this seems especially likely given the violent nature of the end of the occupation of Ridges Basin (see below). There is indeed compelling evidence that links occupants of certain villages in the central Mesa Verde region with Durango and the La Plata groups to the east, not least of which of is the corresponding decline in population in Durango and the La Plata in the early ninth century and an increase in population in the central Mesa Verde region. Webster (2009) has also documented the occurrence of plaited sandals both in sites throughout the Durango district and at Grass Mesa Village, despite the predominance of twined sandals in the central Mesa Verde region during the Pueblo I period. This suggests a historic connection between at least some occupants of Grass Mesa and the Durango District.

Additionally, however, there also appears to be a corresponding increase in population in areas to the south and east of Durango in the early ninth century A.D. (Figure 4.7). While these early ninth-century populations in the Fruitland area may derive from the south, as Wilshusen et al. (2000)

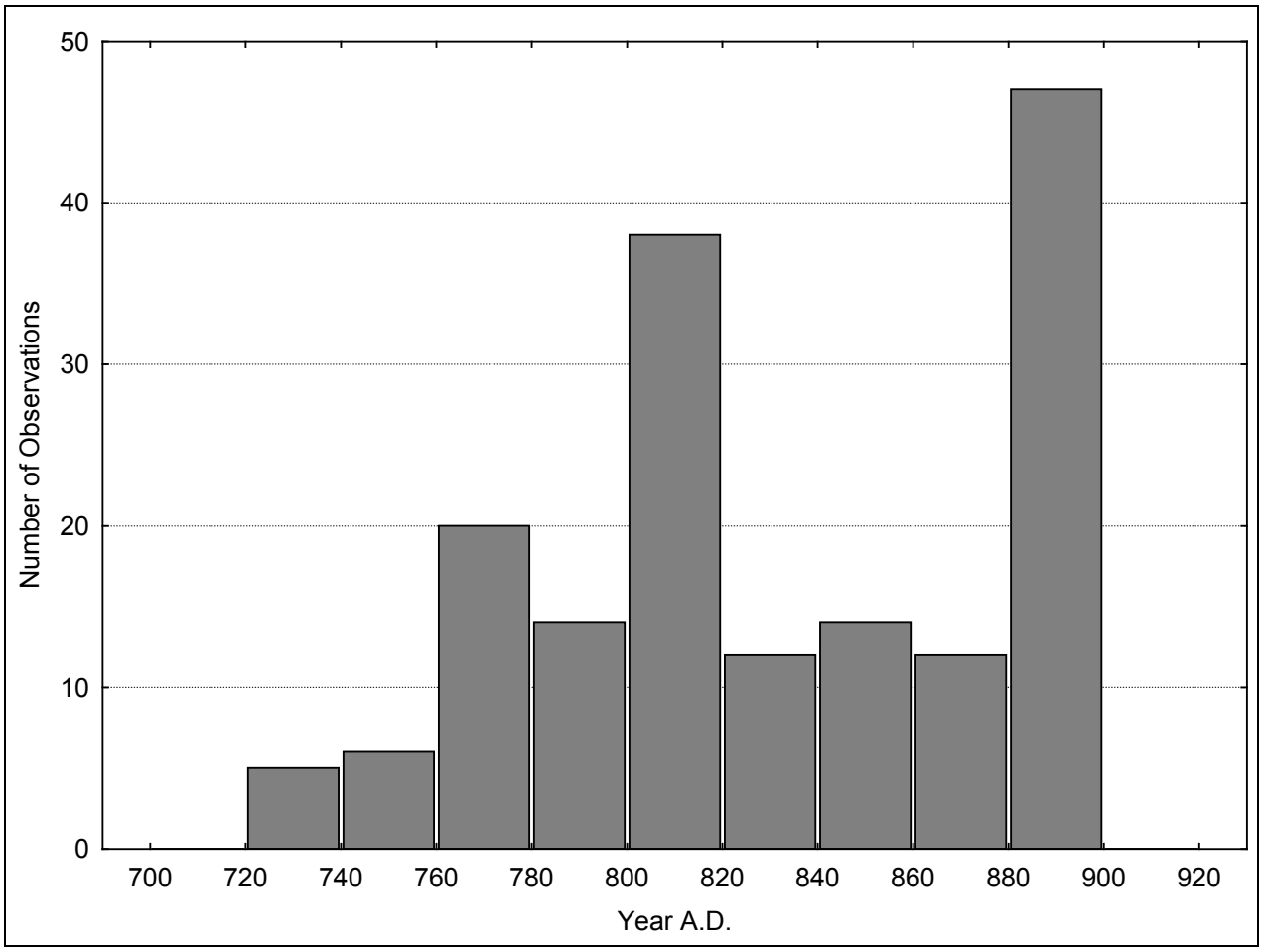


Figure 4.8. Histogram of cutting and near-cutting dates from all four archaeological districts in the eastern Mesa Verde Region combined.

suggest, some of these people may also have originated from the newly depopulated Durango area. The tree-ring data in fact suggest two migrations into the Fruitland area, one in the early 800s and another, larger one, in the late 800s. We suggest the earlier and less substantial increase in population in these areas is due, at least in part, to emigration from Durango. The larger later population increase would then be from groups migrating east from the central Mesa Verde area, as suggested by Wilshusen (1995; Wilshusen and Ortman 1999). By the mid 900s, all of these groups probably migrated south, and many of them may have settled in Chaco (Wilshusen and Van Dyke 2006).

If the Wilshusen model is correct, then two patterns are expected: (1) a decline in population in the eastern Mesa Verde region as a whole in the early to mid-ninth century, when the population of the central Mesa Verde region reached its maximum, and (2) a rapid increase in population in the eastern Mesa Verde region in the final decades of the late ninth century, as migrants moved out of the central Mesa Verde region and into the Fruitland area. Figure 4.8 presents cutting and near-cutting dates from all four archaeological districts in the eastern Mesa Verde region, combined to form a proxy for occupation of the region as a whole. The distribution indeed suggests that construction, and by extension population, declined precipitously in the mid to late ninth century, most likely from emigration. This was followed by a rapid increase in the far eastern and southern portions of the region (i.e., the Fruitland area) in the very late ninth century.

Currently, the hypothesis of two migrations into the Fruitland area in the ninth century A.D. is supported by limited data. It is also possible that the increase in population seen in the Fruitland District in the late 800s is due to in situ population growth following the initial migration from the Durango area, given the growth rates postulated by Wilshusen and Perry (Chapter 10). However, the size and suddenness of the population spike as depicted in Figure 4.8 makes this seem unlikely.

Even with these sizable population movements, the eastern Mesa Verde region never contained the population levels reached in the central Mesa Verde region. Durango and La Plata groups probably only made up a small portion of the large villages that formed in the central Mesa Verde area in the mid to late ninth century, for instance. In fact, based on available survey and excavation data, population levels in the entire eastern Mesa Verde region probably never surpassed 3,000 people at any given moment. From A.D. 650 to 750, the region contained perhaps as few as 250 to upward of 500 people at any one time. From A.D. 750 to 825, the region contained a momentary population of perhaps 1,500 to 2,000 people. After 825, population levels dipped to about 500 persons and then increased in the 880s to perhaps as high as 3,000 (but probably closer to 2,000). These estimates are based on assumptions of 6 persons per single habitation, 12 persons per multiple habitation, and 60 persons per village.

The earliest expressions of aggregated village settlement emerged in the 750s in the Durango and La Plata districts, and included Sacred Ridge, Blue Mesa, and Morris Site 23 (Figure 4.1). All three of these settlements were short-lived phenomena and were depopulated by the early 800s. Yet even in this early period, most of the general population inhabited small, dispersed single- or multiple-habitation settlements. In Ridges Basin and Blue Mesa, for example, in the late A.D. 700s and early 800s, the estimated momentary population is about 500 people. Yet, only 60 or fewer people resided at the Sacred Ridge site. Most people occupied single pit structure residences that were dispersed throughout the basin and across the mesa, some in loose clusters, others in no apparent spatial association with other households. Likewise, in their 10 percent survey of the La Plata River drainage, SWCA recorded one village, 4 multiple habitations, and 13 single habitations dating from 725 to 900 (Chenault 1996). Using the assumptions noted above of 60 persons per village, 12 per multiple habitation, and 6 per single habitation, this suggests that twice as many people lived in small habitations as lived in villages during this time.

After 850, an even smaller proportion of the eastern Mesa Verde region population lived in large villages. While fairly large aggregations are evident in sites such as Sambrito Village in the Navajo Reservoir/Fruitland District (Eddy 1966) and the communities on Stollsteimer Mesa in the Piedra District (Roberts 1930), these large settlements contained a relatively small proportion of the overall population of these districts. A more common settlement configuration after A.D. 850 may be represented by the two communities that occupied Cedar Hill (Wilshusen 1995). Although these communities each contained a fairly large population (approximately 225 to 270 people in total), they were composed of dispersed single-residence households and associated great kivas. Most Pueblo I sites in the Fruitland and Piedra districts were rather small and appear even more isolated than those composing the Cedar Hill communities.

Thus, the general trend of Pueblo I settlement in the eastern Mesa Verde region is one of dispersed communities, only some of which include villages (i.e., tightly aggregated settlements with momentary populations nearing 100 individuals). Paradoxically perhaps, this makes large sites an even more interesting phenomenon. What occurred at these large settlements and what compelled only some of the population to live in them?

Large Pueblo I Settlements

This section first describes three of the largest and best known of the large sites in the eastern Mesa Verde region—Morris Site 23, Sacred Ridge, and Blue Mesa (Chuipka 2008a, 2009b; Chuipka and Potter 2007) (Figure 4.1). Following this, a brief

comparison of these sites with large sites to the west is made. The section concludes with a discussion of violence and perimortem processing of human remains that is associated exclusively with several large settlements in the eastern Mesa Verde region.

Morris 23

Morris 23 is a large site (141 acres) covering most of a terrace along the western bank of the La Plata River (Figure 4.9). The site contains at least 51 pit structures, one of which is represented by a 22-m-wide depression that is nearly 1 m in depth and appears to represent a great kiva. It is nearly identical to the pre-excavation depression of Pitstructure 7 at Grass Mesa Village that was later confirmed to be an early Pueblo I great kiva (R. R. Lightfoot 1988; Lipe et al. 1988: fig. 7.16). These pit structures are organized into 28 discrete habitation units (HUs), each of which generally comprises at least one pit structure, associated surface architecture, and midden (Figure 4.9).

Not all of the pit structures at Morris 23 were occupied at the same time. Sequential occupation was primarily indicated by the presence of trash-filled pit structures. Burned structures that lack trash fill appear to have been burned at the time of site abandonment. This category of abandonment was defined for 29 pit structures. While it is not possible to definitively say that these burned structures were all contemporary, the relationship of these structures to earlier trash-filled structures and surface architecture suggests that they represent the latest structures at the site. As such, it is estimated that the latest occupation of Morris 23 comprised as many as 29 pit structures in 22 habitation units.

Sacred Ridge (5LP245)

The Sacred Ridge Site was situated on a small knoll at the west end of Ridges Basin and covered almost 13 acres. The site contained 22 pit structures and associated surface roomblocks, over 100 burials, and numerous extramural features (Figure 4.10). Tree-ring dates suggest an occupation from about A.D. 729 to just after 803 (Potter and Chuipka 2007), contemporaneous with the majority of dispersed households in Ridges Basin. Sacred Ridge was by far the largest site in the basin and appears to have begun in the early eighth century as simply a small aggregation of houses. By the mid-eighth century, the site grew to become the largest habitation in the area. At about A.D. 790, the settlement was transformed to become the social and ritual center of the Ridges Basin community: four oversized pit structures were constructed along the southern and eastern slopes of the knoll, and unique architectural features were erected at the apex of the knoll, including a palisaded ritual area and a possible two-story wood and adobe tower (Potter and Chuipka 2007).

As at Morris 23, earlier pit structures at the Sacred Ridge Site were dismantled, salvaged, and used as trash receptacles or left to fill naturally. Large "oversized" pit structures with ritual floor features were built immediately adjacent to structures that had been dismantled. All of the latest buildings, including those on the apex of the knoll, were burned at final abandonment of the site at about 810.

Blue Mesa (46 Individual Site Designations)

Blue Mesa is a narrow tableland approximately 3 miles east of Sacred Ridge overlooking the west bank of the Animas River. The mesa is 593 acres in size and contains approximately 74 Pueblo I pit structure habitations, all apparently dating between A.D. 750 and 840 (Chuipka and Potter 2007). All of these pit structures had associated midden deposits, and all but one had associated surface architecture.

The dendrochronological data from excavated sites, as well as artifact and stratigraphic data, suggest that a major building episode on Blue Mesa occurred sometime between A.D. 790 and 810. However, all of the salvaged pit structures that were excavated by SWCA are inferred to have been abandoned prior to this building episode, most likely before A.D. 800. The current data suggest that the primary occupation of Blue Mesa began in the middle to late eighth century and ended around A.D. 820. One structure at site 5LP379 was evidently reoccupied in A.D. 831 after a hiatus of more than a decade, suggesting that Blue Mesa was not entirely abandoned until the A.D. 840s.

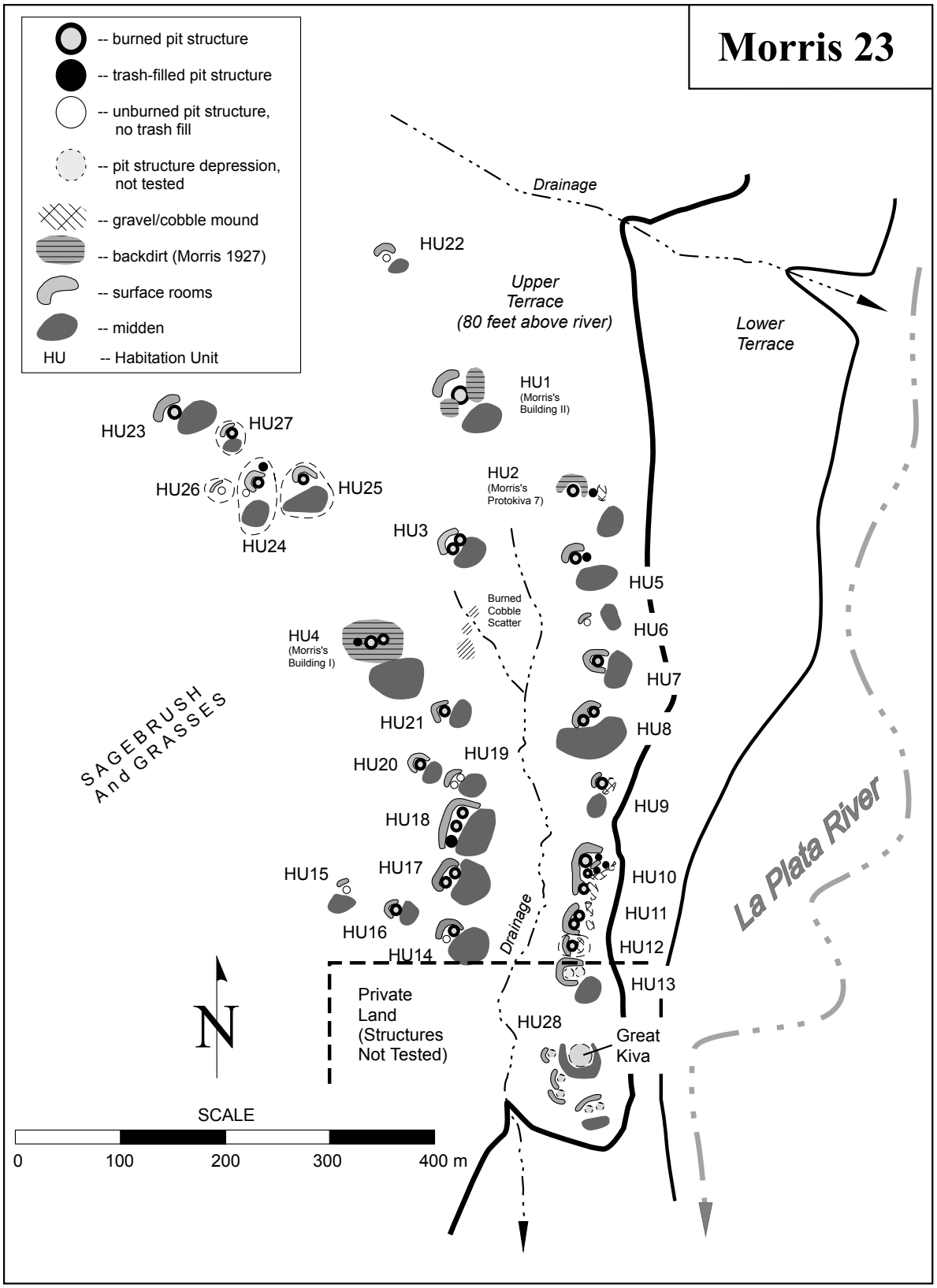


Figure 4.9. Plan map of Morris 23, from Chuipka 2008a.

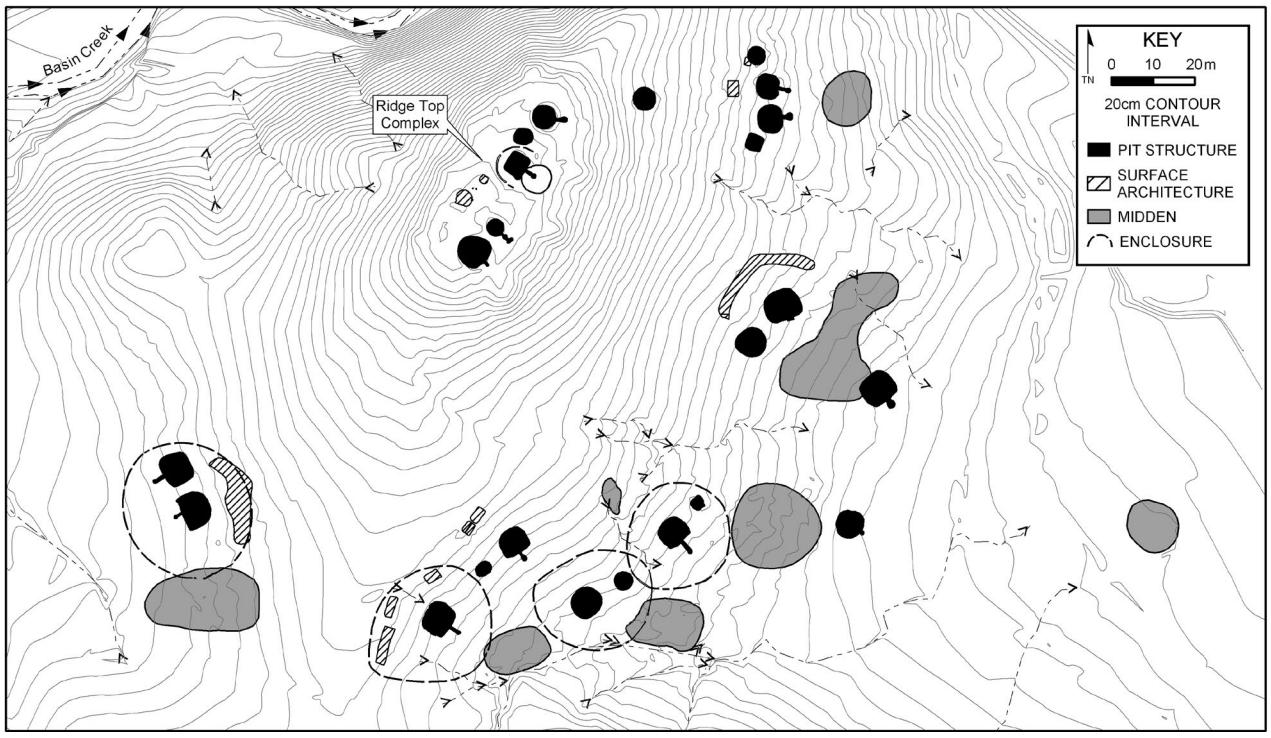


Figure 4.10. Map of Sacred Ridge.

The organization of the Blue Mesa community appears similar to that of Morris 23 in that it consisted of numerous single or double pit structure residences aligned loosely north–south and with no apparent village or ritual center (like Sacred Ridge). Unlike Morris 23, however, there is no known great kiva associated with the settlement.

Comparing Early Pueblo I Villages and the Argument for Cultural Diversity

Chuipka (2008a) recently compared six early Pueblo I settlements from across the northern Southwest. Fifteen attributes were selected and analyzed for each community (Table 4.2). Sites within and to the east of the La Plata River drainage exhibited stark differences in many of the recorded attributes with those to the west. In general, sites west of the La Plata, such as Alkali Ridge, McPhee Village, and Grass Mesa, had rectilinear pit structures, single-hole vent openings, double-row roomblocks, shared roomblocks and middens, high proportions of red ware pottery, and multiple components. Sites within and to the east of the La Plata (i.e., the eastern Mesa Verde region) in general exhibited variable pit structure shape, one- and two-hole (or bifurcated) vents, single-row roomblocks, no shared middens or roomblocks, enclosures around pit structures, glaze-painted pottery, and evidence of violence. Morris 23, situated near the east–west divide, exhibits attributes of both groups. Following Wilshusen and Ortman's (1999) argument for the presence of several identity-conscious social groups (or ethnic groups) in the northern Southwest during the late Pueblo I period, Chuipka argues that many of these differences in early Pueblo villages also relate to ethnic or cultural differences between the two populations.

One of the starkest differences seen between these areas is the presence of perimortem processing of human remains in the eastern Mesa Verde region (see attribute 11 in Table 4.2). The following section describes some of the more extreme examples of this phenomenon, which appears to be exclusively an "eastern" cultural trait in the Pueblo I period.

Violence and Perimortem Processing

Three of the largest Pueblo I period assemblages of human remains exhibiting evidence of extensive

Table 4.2. Comparison of 15 selected attributes from six early Pueblo I village sites dating to the period A.D. 750–840

		Sites (From West to East)					
Attribute		**Alkali 13**	**McPhee Village**	**Grass Mesa**	**Morris 23**	**Sacred Ridge**	**Blue Mesa**
1	Site size (acres)	5	70	10	140	12	593
2	Total number of pit structures	20+	11+	29	51	22	74+
3	Estimated no. of contemporary pit structures	18+	11+	15	29	11	37
4	Pit-structure shape	Variable	Rect.*	Rect.*	Rect.*	Variable	Variable
5	Pit-structure vent type	Single opening	Single opening	Single opening	Single opening	Predominantly single opening	Predominantly bifurcated
6	Roomblock type	Double row	Double row	Single row	Double row	Single row	Single row
7	Shared roomblocks	Yes	Yes	Unknown	Yes	No	No
8	Shared middens	Yes	No	Unknown	Yes	No	No
9	Enclosures around pit structures	No	No	No	Yes	Yes	Yes
10	Architecturally distinct community structures	Yes	No	Yes	Yes	Yes	No
11	Violence and perimortem processing	No	No	No	No	Yes	Yes
12	Earlier components	Yes	Yes	No	No	No	No
13	Later components	Yes	Yes	Yes	No	No	No
14	San Juan Red Ware	Yes	Yes	Yes	Yes	Yes	Yes
15	Glaze-painted white ware	No	Yes	Yes	Yes	Yes	Yes

* Rect = rectilinear (rectangular to subrectangular)

perimortem processing have been found in the eastern Mesa Verde region. The largest assemblage dates to the early Pueblo I period and was associated with the Sacred Ridge site in the Durango District. The two others, dating to the late Pueblo I or early Pueblo II periods, were found in association with Sambrito Village and Burnt Mesa in the Navajo Reservoir/Fruitland District.

Sacred Ridge

The human remains of at least 35 individuals were recovered from floor and fill contexts of four pit structures at Sacred Ridge, all of which exhibited extensive perimortem trauma (Perry et al. 2010; Potter and Chuipka 2010). The largest deposit contained more than 14,000 fragments of bone that were deposited in the pit structure during a single event that immediately preceded terminal site abandonment. These remains exhibited burning, cut marks, polishing, splitting, impact percussion scars, and spiral breaks. Recent analysis of the remains suggests that the victims of the massacre and processing event on Sacred Ridge may have comprised a genetic subgroup unrelated to the larger Ridges Basin community. The sample of processed human remains from Feature 104 at Sacred Ridge exhibited more significant variations in dental trait frequencies than did other samples within Ridges Basin. In addition, this subgroup exhibited a relatively high prevalence of enamel opacities, which occur either from poor or inconsistent nutrition or differences in the calcium content of drinking water. This suggests either that their access to nutritious food within the community was restricted or that they had a different water source (McClelland 2010).

Sambrito Village

Sambrito Village is on the west bank of the San Juan River near the juncture with Sambrito Creek near the Colorado–New Mexico border. This site was investigated during the Navajo Reservoir Project and is currently under the water of Navajo Reservoir

(Dittert et al. 1961). This large village consists of 37 pit structures, the majority of which were occupied during the later part of the Piedra phase between A.D. 900 and 950.

Scattered human bones belonging to at least 44 individuals were found in 17 locations across the site, most of which were within pit structures. One of the largest concentrations, from Pithouse 25, represented the remains of 12 individuals that had been deposited before the roof collapsed. Bone in this assemblage exhibited burning, splitting, impact percussion scars, cut marks, scouring, and irregular (spiral) breaks. While there is some dispute as to the number of individuals in the assemblage and some criticism of the collection methods employed at the site, these remains exhibit trauma characteristic of cultural rather than natural processes (Turner and Turner 1999:186–188).

Burnt Mesa

Burnt Mesa is a large plateau north of the San Juan River near the confluence with the Los Pinos River on the north side of Navajo Reservoir. The site consists of three pit structures and a surface structure that were investigated by Alan Brew in 1969. While there is no site report, the human remains were reported by Turner and Turner (1999:224–226). The site appears to have been occupied during the later part of the Piedra phase around A.D. 950.

The remains of 11 individuals were found scattered on the floor of Pithouse 1, along with metates that appear to have been used as anvils upon which bones were cracked open. An edge-polished human cranial vault fragment appears to have been used as a scoop (Turner and Turner 1999:226). These remains appear to have been deposited in a single event that coincided with the final occupation of the structure. Bone in this assemblage exhibited burning, cut marks, polishing, splitting, impact percussion scars, scouring, and irregular (spiral) breaks. While cannibalism may or may not have been the primary motivation behind the violence evident in the assemblage, it may be confidently concluded that these remains exhibit trauma characteristic of cultural rather than natural processes (Turner and Turner 1999:226).

Discussion

The violence evident at eastern Mesa Verde sites suggests that tensions existed within communities. In the case of Sacred Ridge, the perpetrators of the violence and perimortem processing seem to have come from within the community, and there is no evidence to suggest external raiders. Rather, it appears that social tensions resulted in the extermination of households within the community. In all three cases, the members of the households were not only killed, but mutilated beyond recognition. While periods of drought and exhaustion of natural resources may be plausible explanations for this violence, this does not adequately explain why the violence was as intense as found at these three sites.

CONCLUSION

We suggest that there are a number of reasons why some households in the eastern Mesa Verde region chose to live in aggregated settings while the majority chose to settle in a more dispersed pattern. The large settlements were, first of all, "truly emergent phenomena—they were new a type of settlement on the landscape and represented a new set of social and economic options" (Wilshusen and Potter 2010:165). They were an experimental settlement form and offered both advantages and disadvantages to settlers. Given the level of violence evident in the region during the Pueblo I period, one advantage may have been that villages provided safety in numbers and the perception of security in the context of intragroup or intergroup violence or the threat of violence. On the other hand, the largest and most gruesome episodes of violence and perimortem processing in the eastern Mesa Verde region appear to have been directly associated with residents of large sites, and thus that sense of security may have been a false one. Wilshusen and Potter (2010:169–170) suggest that living in villages "not only offers safety in numbers but can also provide a sense of stability, identity, and security by in some sense formalizing property rights and legitimizing claims to key resource-patches such as productive agricultural land, game reserves, woodlands, and springs." Indeed, Potter

(Chapter 8) suggests that the sense of shared identity created among residents of villages allowed for more effective hunting groups and consequently increased access to large game for residents of large settlements.

Whatever motivation ancient people had in establishing and living in the earliest villages, they were very unstable entities and their short tenure in the eastern Mesa Verde region ended all too often in extreme violence. Even after being a part of several relatively stable communities in the central Mesa Verde region in the mid to late 800s, it appears most households in the eastern Mesa Verde region opted to inhabit smaller, more dispersed settlements. It was not until more effective means of integrating this culturally diverse population were instituted that the majority made the commitment to living in large villages.

Note

1. By convention, the condition of the sample and the confidence that can be ascribed to a tree-ring date from the University of Arizona Laboratory of Tree-Ring Research is reported using a series of symbols. These symbols include "B" (bark present), "G" (beetle galleries present), "c" (the outermost ring is continuous around the full circumference), and "r" (the outermost ring is continuous around the available circumference of the sample, but less than a full cross-section is present). These all indicate that the reported date is the year the tree was cut or died, hence the term "cutting date." Samples lacking direct evidence of the year the the specimen died (usually due to missing outer rings) are said to be non-cutting dates and are reported with the symbols "v" (indicating the reported date is likely within a few years of the death of the specimen), or "vv" (indicating that there is an unknown number of rings missing). Non-cutting dates are not considered in this discussion.

CHAPTER 5

Pueblo I Settlement in the Greater Chaco Basin

THOMAS C. WINDES AND RUTH M. VAN DYKE

OUR STUDY AREA CONCENTRATES ON THE interior of the geologic structure known as the San Juan Basin, or more accurately, the Chaco (drainage) Basin, as well as the immediately adjacent areas of the eastern Chuskan slopes, the Red Mesa Valley to the south, and the eastern margins as far as the Puerco River Valley of the East (Figure 5.1). This area covers approximately 160 km (100 miles) east–west and north–south, but large tracts remain archaeologically unsurveyed. Initial impressions of this region suggested a general lack of substantial occupation during the Pueblo I period. In early Pueblo I times, the San Juan Basin was by no means empty, but it was a relative backwater. By contrast with the large, aggregated villages in the Mesa Verde region (see Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2), Chaco Basin settlements were small and scattered across the landscape, with occupation primarily limited to drainage valleys and elevations below 1,950 m (6,400 feet) where runoff horticulture was feasible. Only a handful of Chaco Basin Pueblo I sites have yielded tree-ring dates between A.D. 750 and 875 (see Windes 2006). But toward the end of the Pueblo I period, beginning around A.D. 875, many people migrated into the Chaco Basin, bringing with them the seeds that would ultimately flower into the Chaco Classic Bonito phase. Archaeologists are only beginning to identify and understand these developments (Van Dyke 2008; Wilshusen and Van Dyke 2006; Windes 2006, 2007).

Although the terms "Chaco Basin" and "San Juan Basin" are sometimes used interchangeably, the Chaco River empties the Chaco Basin into the San Juan River. The Chaco River is a wide, sandy, braided wash that begins to the northeast of Chaco Canyon as the Escavada Wash and intercepts Chaco Canyon below the Peñasco Blanco great house near the western end of the national park. Primary tributaries to the Chaco River are concentrated to the south, southwest, and west of Chaco Canyon. The Chaco Wash, entrenched throughout the 32 km (20 mile) length of Chaco Canyon, is also a tributary of the Chaco River.

Precipitation varies across the Chaco Basin, from a mere couple of inches along the western boundary, gradually increasing eastward with the rise in elevation, and culminating at Pueblo Pintado, where the average yearly precipitation reaches approximately 254 mm (10 inches), which is inadequate for dry farming. Because of the arid conditions prevailing over most of the Chaco Basin, few inhabitants risked settlement along the elevated areas between major drainages, where farming is impractical.

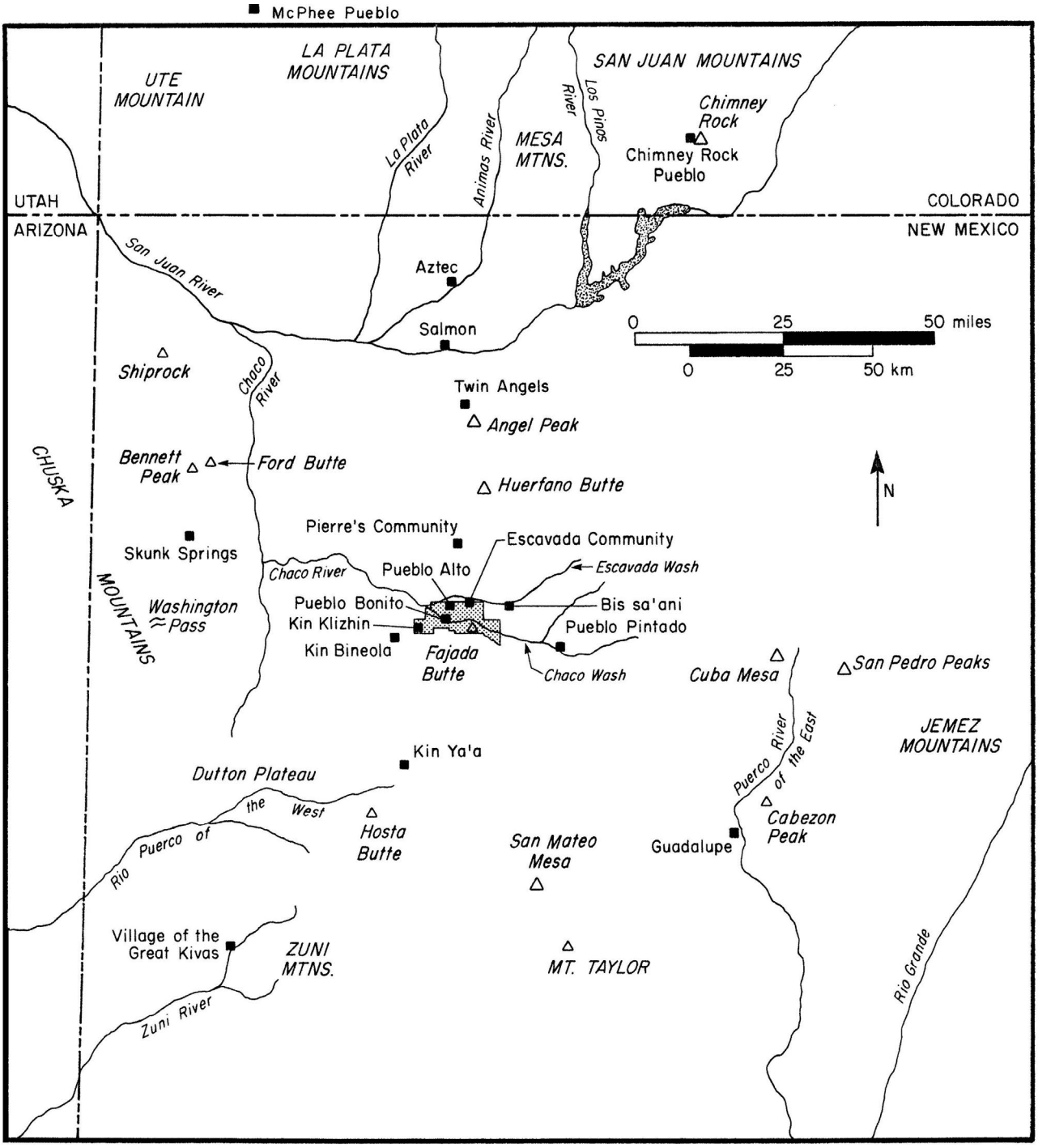


Figure 5.1. The San Juan Basin with features and site communities discussed in the text.

Instead, the vast majority of the settlements were along drainages where floodwater, groundwater, and dune farming could be practiced. Many of these drainages cross wide expanses of the mostly treeless Chaco Basin, running from the Dutton Plateau or other highlands in the south to drain north into the Chaco River (i.e., the Kim-me-ni-oli, Indian Creek, Standing Rock, and Coyote washes). Around Chaco Canyon, only relatively short drainages, with headwaters in the high ridges about 15 km (9 miles) south of the park, drain into the Chaco Wash or the adjacent Chaco River (i.e., from east to west, the Fajada, South Gap, Padilla, and Kin Klizhin washes). Few of the south-draining washes north of Chaco that empty into the Chaco Wash or Chaco River appear to contain much Pueblo I settlement except, perhaps, near the confluences with the Chaco River or Chaco Wash.

Our understanding of the Pueblo I period in the Chaco Basin has been hampered by two major factors. First, there has been a relative dearth of systematic investigations. Second, significant differences in architectural and ceramic sequences between the areas north and south of the San Juan River have led archaeologists to misidentify or underreport Pueblo I period sites in the Chaco Basin. Below, we discuss these issues in more depth. We then move to the bulk of our contribution, which consists of a detailed overview of Pueblo I archaeology in the Chaco Basin, drawn primarily from the senior author's unpublished study (Windes 2006). We conclude the chapter with a general discussion of the patterns supported and issues raised by this work.

Identifying Pueblo I Sites in the Chaco Basin

There is little known of the ancestral Pueblo occupation of the interior Chaco Basin during the Pueblo I period except the data from the survey of the Chaco Canyon area and from cultural resource management work conducted mainly in corridors across the basin for road, power, and pipeline rights-of-way. Systematic regional or block surveys and extensive documentation of Pueblo I sites are lacking (see Vivian [1990:135–165] for a review of projects up until 1990). Existing reports are subject to a wide range of biases due to differing institutional agendas and personnel field experience, education, and backgrounds, and they have been assembled from piecemeal contract investigations. Large-scale, systematic surveys are needed for the interior drainages, which can be seen as conduits for movement during the ebb and flow of highly mobile use of the interior Chaco Basin.

Perhaps even more critically, researchers have frequently misidentified or failed to recognize Pueblo I sites in the Chaco Basin because the sites do not exhibit ceramic and architectural signatures in lockstep with the Pecos Classification developments that work well in the Mesa Verde region. Kidder originally assigned a range of A.D. 700–900 to the Pueblo I period, but this 200-year designation encompasses both a low-key basin occupation between A.D. 700 and 875 and a profusion of new settlements founded by migrants from the Mesa Verde and other regions between 875 and 925. As a result, there is quite a bit of confusion about what is meant in the Chaco Basin when a site is assigned to the Pueblo I period. Elsewhere (Van Dyke 2007:78), the junior author has proposed that we keep the Pueblo I designation for the 700–875 period and consider the post-875 sites to herald the beginning of the Early Bonito phase. In this chapter, we will use "Pueblo I" and "late Pueblo I" to distinguish between A.D. 700–875 and A.D. 875–925, respectively.

For most archaeologists, ceramics provide the key markers for distinguishing Basketmaker III from Pueblo I period sites on the surface. However, because ceramic developments in the Chaco Basin did not move in lockstep with Pecos Classification changes defined elsewhere, Pueblo I period sites are frequently misidentified. Similar to earlier seventh-century assemblages, early Pueblo I assemblages are dominated by Lino Gray (mostly tallied as "plain" gray body sherds), and small numbers of Basketmaker III period La Plata Black-on-white or rarer Lino Black-on-gray. Where the pottery assemblage is overwhelmingly plain gray, the presence of wide neck-banded (Kana-a style) pottery has been

Table 5.1. Ceramic assemblage time in the San Juan Basin interior: Cibola Tradition

Time (A.D.)	Prominent White Ware	Lesser White Ware	Prominent Gray Ware	Lesser Gray Ware
600–750	La Plata	Lino B/g	Obelisk Gray, Lino Gray Plain gray	
750–850	White Mound	La Plata	Lino Gray Plain gray	
850–875	White Mound	La Plata Kiatuthlanna	Lino Gray Plain gray	Wide neck-banded
875–900	Kiatuthlanna	White Mound Red Mesa	Plain gray Wide neck-banded[a]	Lino Gray
900–925	Red Mesa	Kiatuthlanna	Plain gray Wide neck-banded[b]	Narrow neck-banded
925–1000	Red Mesa		Plain gray Narrow neck-banded[b]	Neck indented corrugated
1000–1050	Red Mesa	Gallup Puerco	Plain gray Narrow neck-banded[b] Neck indented corrugated	Indented corrugated
1050–1100	Gallup	Puerco	Indented corrugated	

Note: Rare numbers (absent to 1%+) of San Juan and Chuska Red Ware present in all periods. Depending on site location, equivalent types of Chuska and rarely Tusayan and Mese Verde types may be present. Indented corrugated = overall indented corrugated vessels.

[a] Much is clapboard variety

[b] Majority is clapboard variety

consistently used for distinguishing Pueblo I sites from the earlier Basketmaker III sites (e.g., Cordell 1984:66; Hayes 1964:44; Willey 1966:213–214; Mills et al. 1992: table 16; Wilshusen 1999b:207). To many, the absence of wide neck-banded pottery signals the presence of Basketmaker III use (e.g., Hibben and Dick 1944; Stein and Roney 1987:174–175). However, wide neck-banded gray ware does not appear in the Chaco Basin until the late Pueblo I period, when it arrives in concert with Kiatuthlanna and Red Mesa Black-on-white; these types continue into the Pueblo II period. The primary ceramic indicator of the early Pueblo I period in the Chaco Basin is White Mound Black-on-white, a subtle later version of La Plata Black-on-white that is often difficult to recognize in the field, as attested by Gladwin himself, who defined the type (Gladwin 1945:23) (see Table 5.1).

Wide neck-banded gray ware and Red Mesa Black-on-white have been considered Pueblo I indicators (Hawley 1937a:86; 1937b:166, 171; Marshall et al. 1979:64, 121–123; R. B. Sullivan 1994:514) separating Basketmaker III from Pueblo I sites (Hawley 1936; Hayes 1981:19; Hibben 1937; Marshall and Bradley 1994; Senter 1939; Willey 1966; cf. Gladwin 1945). Currently, Red Mesa Black-on-white continues to be used as a marker for "Pueblo I" sites by some researchers (e.g., Marshall and Bradley 1994; R. B. Sullivan 1994:514). But in the Chaco Basin, the chronological markers of wide neck-banded and Kiatuthlanna Black-on-white do not dominate assemblages until about A.D. 875 (the late Pueblo I period). Both types are rapidly superseded by narrow neck-banded and Red Mesa Black-on-white, marking the dramatic dawn of the Chacoan Early Bonito phase by ca. A.D. 875. Neither wide neck-banded nor Kiatuthlanna Black-on-white are well dated in the Chaco Basin, but the association of both with early Red Mesa Black-on-white provides the terminal period of their use in the late A.D. 800s or very early A.D. 900s.

Architecture is also important to the identification of Pueblo I sites, but architectural surface remains from this period are difficult to recognize (see Table 5.2). Field surveyors have expected Pueblo I pueblos to contain upright slab foundations and jacal walls, but in the relatively treeless Chaco Basin, Pueblo I builders did not use jacal. Rather, they topped upright slabs with adobe "turtlebacks" and embedded sandstone spalls. In the shifting

Table 5.2. Ceramic assemblage time in the San Juan Basin interior: Architectural trends

Approx. Time (A.D.)	Typical house masonry	Proto-great-house masonry	Great-house masonry[a]
750–850	Slab foundations Mud walls with some spalls	Slab and block foundations Partial stone masonry	Type I and mixed
850–875	Slab foundations Mud walls with some spalls	Slab and block foundations Partial stone masonry	Type I
875–900	Slab foundations Mud walls with some spalls/stones	Slab and block foundations Partial stone masonry	Type I
900–925	Slab or block foundations Mud walls with some spalls/stones	Slab and block foundations Partial stone masonry	Type I
925–1000	Block foundations Mud walls with some stones	?	Type I

[a] Type I masonry of large, tabular slabs set in single or double-width courses; often two story.

aeolian sands of the Chaco Basin, these sites can be virtually impossible to identify without excavation (e.g., Loebig 2000). Assuming upright slabs are present, the key to separating early surface Pueblo I sites from late Basketmaker sites is the presence of slab-lined storage cists which are joined (Figure 5.2) or nearly joined together, unlike the more widely spaced circular Basketmaker cists.

Middle Pueblo I surface rooms are joined together in rectangular or subrectangular shapes and are marked by thin upright wall slabs (Figure 5.3), sometimes with scattered spalls from adobe wall construction creating very little mound relief, and with refuse, often consisting of sparse cultural material, placed to the east, southeast, or south. The introduction of Type I masonry (the thin, uncoursed horizontal sandstone slabs within heavy mortar characteristic of the earliest Chacoan great house construction [Hawley 1934:13; Judd 1964:24; Lekson 1984:17–19]) in a few sites in the region stands in stark contrast to the prevailing norm. Masonry construction, with the exception of a few roomblocks discussed here, generally is not fully employed in wall construction until the late A.D. 900s and early 1000s in the Chaco Basin, becoming prevalent only by the mid A.D. 1000s.

The Northern and Northwestern Areas

South of the San Juan River, east and north of the Chaco River, little ancestral Pueblo occupation is known despite large block surveys conducted within the Navajo Irrigation Project area (e.g., Gilpin et al. 1984; Kirkpatrick 1980; Vogler et al. 1982) and work by San Juan College along the San Juan River in the Farmington area (Wheelbarger 2008; see also Hogan and Sebastian 1991). A block survey for a projected coal gasification project in the 1970s covered a large area along the eastern side of the Chaco River and found almost no Pueblo I occupation (Windes 1977: fig.10.1; see also Amsden 1992; Bradley and Sullivan 1994), but did find a dramatic increase in ancestral Pueblo sites by the late A.D. 800s and 900s.

The Largo and Gobernador canyons and their tributaries, directly northeast of Chaco Canyon, once served as the homeland for the Navajo. This critical region between Chaco Canyon and the Mesa Verde region was also heavily occupied during Pueblo I and may have been a conduit for the movement of some people from the latter into the southern/interior Chaco Basin. Recently, archaeologists discovered a Pueblo I community of at least 22 habitation sites and an associated great kiva (the latter excavated by Hibben and Dick 1944) at the Largo–Blanco confluence. Sites yield combinations of rare Lino and abundant Rosa Tradition pottery, primarily of Rosa Gray (Windes and McKenna 2008), but with sparse, if any, amounts of wide neck-banded pottery. The great kiva yielded tree-ring dates that suggest construction at about A.D. 828 (Robinson et al. 1974), but no neck-banded pottery came from the floor. Hall (1944) reported several stockaded Pueblo I settlements within the same canyons. Several Pueblo I pit structures, dated by archaeomagnetism, were excavated near the mouth

Figure 5.2. Red Willow Hamlet, a Pueblo I house in Tohatchi Flats occupied in the A.D. 700s and early 800s. Photograph by Doug Loebig (1992).

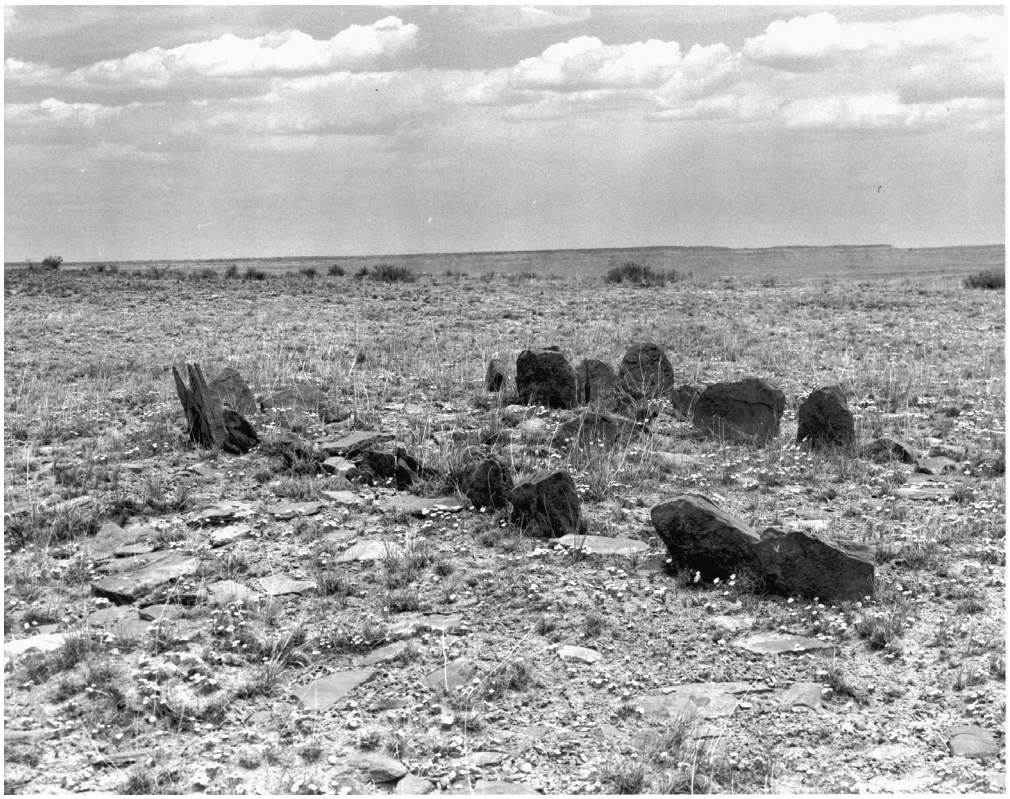


Figure 5.3. The upright slab wall foundations of a small Pueblo I adobe house (29Mc184, House C), which are typical house remains for the period (A.D. 750–900) in the San Juan Basin. Photograph by John M. Campbell (2003).

of the Largo (Bussey et al. 1973). More Pueblo I settlement is reported from canyon country just north of the Largo and the San Juan River (e.g., Till 2003). The closest sizable Pueblo I communities to the north of the Largo Canyon system are at Cedar Hill, just north of Aztec, New Mexico, where Wilshusen and Wilson (1995:76–80) report on two adjacent communities with great kivas. Farther north are sizable Pueblo I occupations in Ridges Basin (Potter 2006–2010) and in and around Durango (e.g., Chuipka 2008b; see Potter, Chuipka, and Fetterman, Chapter 4).

CHACO CANYON AND ITS ENVIRONS

In Chaco Canyon, Pueblo I settlement was once thought to be widespread (Figure 5.4). The 1972 Chaco inventory survey seemed to indicate the presence of large numbers of Basketmaker III and Pueblo I settlements, followed by declines in site frequency during the later ancestral Pueblo periods (Hayes 1981:23–32) as the inhabitants aggregated into fewer but larger habitations. However, in Chaco Canyon, both the Basketmaker III and Pueblo I periods were identified by architectural and ceramic criteria that have often placed them within incorrect periods. The poor recognition of the Cibola Chaco ceramic series marking Pueblo I sites was a major failure of the Chaco Project inventory survey between 1972 and 1975 (Hayes 1981) and the later New Additions Survey (Van Dyke and Powers 2002) (see Figure 5.5). Judge (1972:32, 49) acknowledges that on his 1971 transect survey, discrepancies between inexperienced fieldworkers' textbook expectations and field realities led to incorrect temporal assignments for Pueblo I sites. Naturally, the subtle surface remains of the roomblocks and the ceramic complexities were not readily understood until excavation had followed. Due to these problems, Pueblo I sites, particularly those assigned to the A.D. 700s and the early-to-middle A.D. 800s, yielded a grossly overinflated

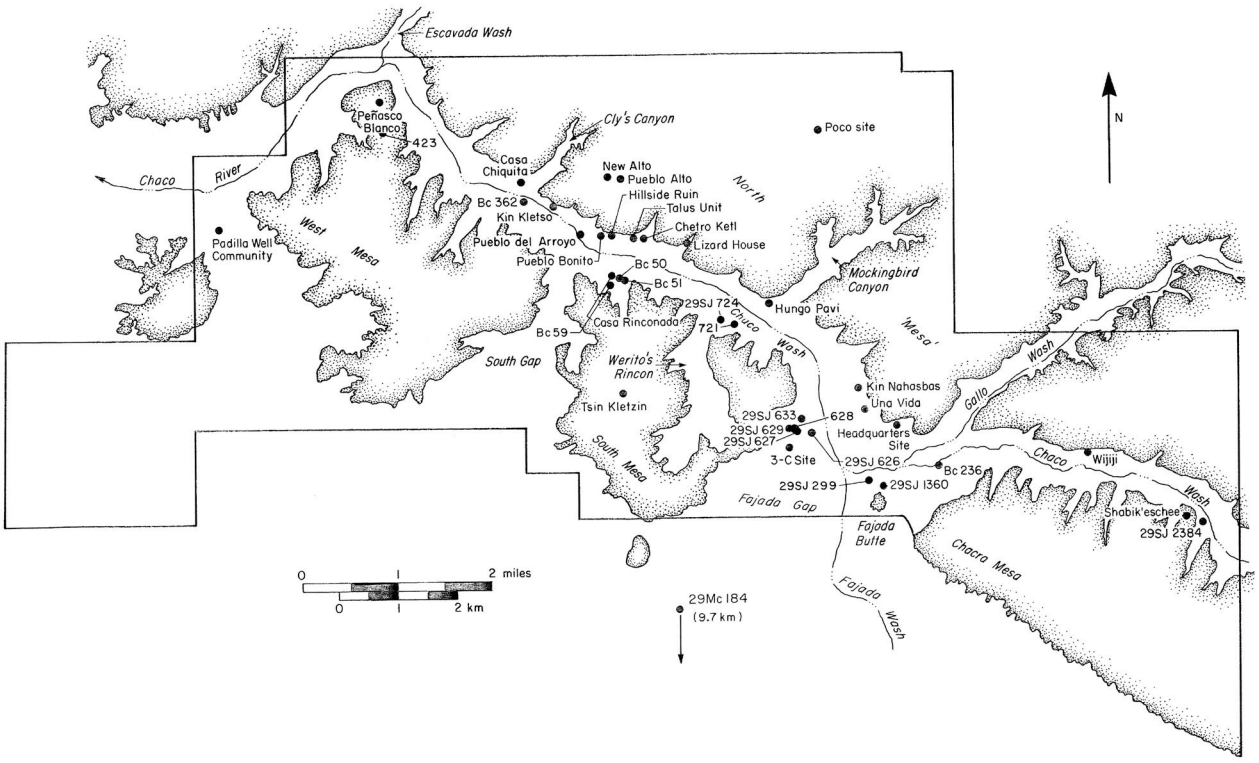


Figure 5.4. The Chaco Canyon area with excavated Chaco Center Pueblo I sites 29SJ(199, 628, 721, 724) and 29Mc184. Courtesy of National Park Service, Chaco Culture National Historical Park Catalog No. CHCU 65031.

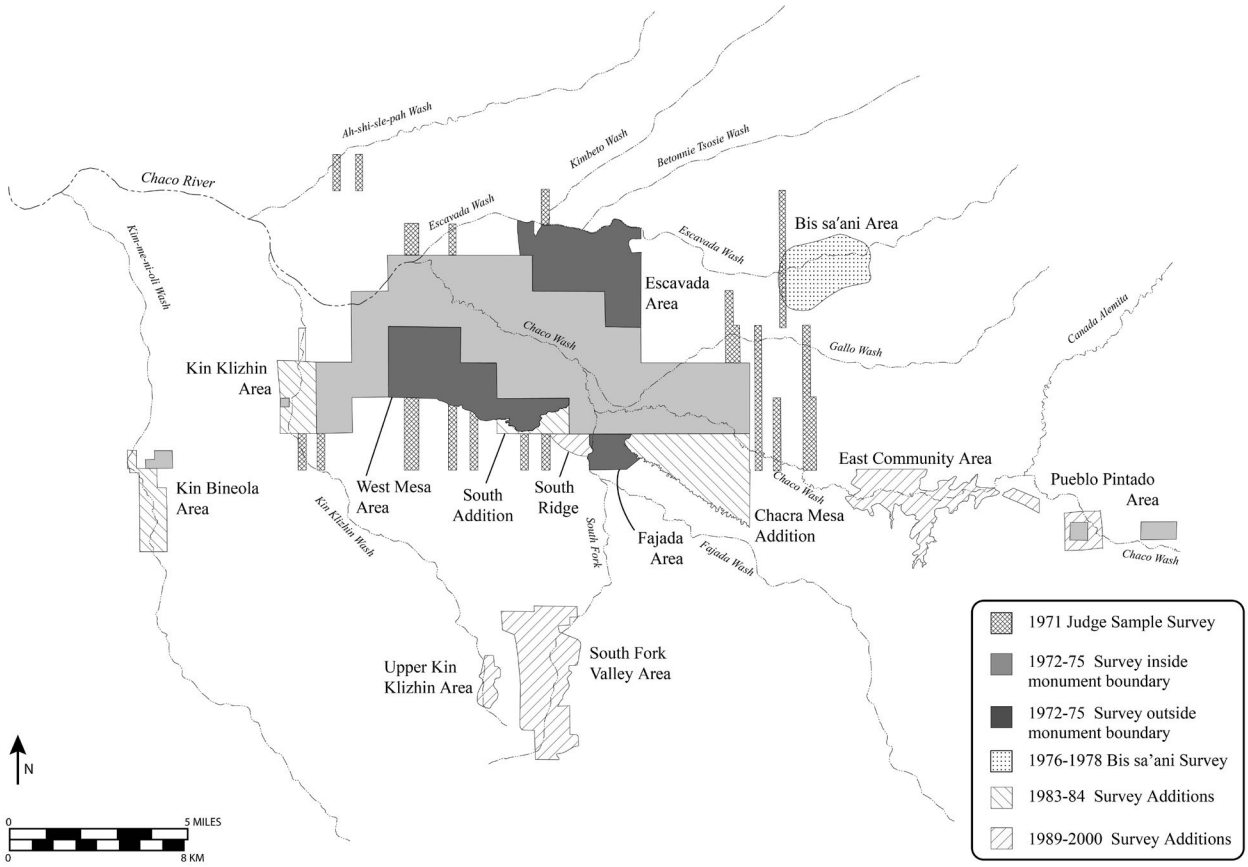


Figure 5.5. Surveys in and around Chaco Canyon between 1972 and 2000. Original by Chris Millington, June 2005.

estimate of site frequency (see Hayes 1981: fig. 15; Mathien 2005: fig. 4.3; Vivian 1990: figs. 2, 6.12). Unfortunately, inflated numbers for early habitation sites have continued to be used without critical reanalysis (e.g., Vivian 1990; Mathien 2005).

Over subsequent decades, the senior author has sought to rectify these problems with expanded surveys within and around Chaco Canyon and the reexamination of some Pueblo I sites defined during the inventory and New Additions Survey (Windes 2006, 2007). Windes' fieldwork and reanalyses suggest that Pueblo I settlement is scattered without site clustering until the late A.D. 800s, with the sudden appearance of large clustered communities of households that mark the beginnings of the Early Bonito phase. Hayes (1981:23) identified 135 Basketmaker III pit structure "villages," although 73 also contained "Pueblo I" occupations; given the ceramic problems, these numbers are unlikely. It is not possible to recalculate a reliable habitation site number, although reanalysis suggests that the number of Basketmaker III habitation sites is closer to 40 in the surveyed canyon areas. Aside from the two very large Basketmaker III communities (29SJ423 and Shabik'eschee Village) at the opposite ends of the park, the largest concentrations of these sites are found in South Gap (n = 11) and the Padilla Wash Valley (n = 9), and most are small domestic residences (Windes 2006). Hayes (1981:26) identified 373 Pueblo I sites within the park and outside in South Gap, a number that should be similarly scaled down. The majority of these probably were founded in the late A.D. 800s (late Pueblo I), when settlement rapidly expanded. Earlier Pueblo I sites are not rare, but they are widely scattered and in far fewer numbers, with no clustering evident within the canyon. Windes took a close look at Basketmaker III and Pueblo I

settlement down through the canyon from Pueblo Pintado to Great Bend on the Chaco River for the final Chaco Report (Windes 2006), which remains unpublished. Material from that report is synthesized in the following review of Pueblo I occupation along the Chaco Wash and Chaco River.

The East End of Chaco Canyon: Pueblo Pintado

At the east end of Chaco Canyon, the Classic Bonito great house of Pueblo Pintado sits atop a broad rise, like a towering cathedral dominating the local countryside. Windes surveyed the Pintado area within the park boundaries in 1972, and he conducted an expanded inventory survey in 1999–2000. The earliest occupation of the area dates from about A.D. 875, with 16 sites in two clusters north and west of Pueblo Pintado (Windes et al. 2000). These sites were oriented in an easterly direction, perhaps indicative of seasonal occupation (e.g., Windes et al. 2000) and exhibited dense quantities of trash and large middens that are typical for area Pueblo II sites.

Just north of Pueblo Pintado, the largest of these sites, 29Mc765, appeared at first to be a large, 100-m-long roomblock similar to those north of the San Juan River (see Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2). Upon closer inspection, the site is comprised of four separate roomblocks. A large roomblock over 50 m in length extends under two smaller later roomblocks at each end; the largest roomblock follows the ridge contour and faces southeast. By Chacoan Pueblo I standards, this is a formidable structure. It represents initial construction at the site, with walls of mud and spalls along with upright-slab wall foundations. Two associated large refuse areas are darkened with firepit ash. No Pueblo I roomblock in the lower Chaco Canyon area except at Padilla Wash can rival the size and amount of material in this midden. Ceramics indicate occupation between A.D. 850/875 and 925, with high frequencies of Kiatuthlanna Black-on-white and wide neck-banded pottery. Less than 300 m away are six smaller roomblocks of contemporary age. Kiatuthlanna Black-on-white, wide neck-banded, Red Mesa Black-on-white, and narrow neck-banded were prominent ceramic types at these sites.

Ceramics from the earliest depositions provide clues as to the origins of the immigrants. A sample (n = 280) of tempers used in Kiatuthlanna Black-on-white and wide neck-banded sherds revealed that 11 percent were tempered with crushed rock common to the region north of the San Juan River (e.g., Breternitz et al. 1974); the remainder were tempered almost exclusively with local materials (Windes et al. 2000: table 4.2). Most of the rock-tempered sherds were painted wares, likely to have been carried on a migration as ritual objects or as valuable heirlooms. Given the timing of the early settlement and frequency of northern tempering material, the people who founded this late Pueblo I habitation probably derived from the Mesa Verde region as part of the widespread northern depopulation (see Wilshusen and Ortman 1999; Wilshusen and Van Dyke 2006; Wilshusen et al., Chapter 2).

About 3 km to the west is another cluster of 10 sites that are ceramically and architecturally different from the one described above. Each of these sites had small numbers of late Pueblo I ceramics, indicating that initial occupation took place by about A.D. 875, but most are part of large habitation complexes with extensive middens occupied into the A.D. 1000s. Stone construction suggests an architectural style later than that indicated by the ceramics. These roomblocks were aligned along the toes of adjacent ridges bordering drainages cutting south into Chacra Mesa, which provide good farming opportunities from runoff. The prehistoric road that leaves the interior of Pueblo Pintado drops into Chaco Canyon via a series of cut steps at 29Mc593 about 4.2 km away. Because the western roomblocks were aligned parallel with the prehistoric road, it is probable that the prehistoric route was established here quite early.

Ceramics from the western group of roomblocks are unlike any observed by Windes elsewhere in Chaco Canyon. A thick, off-white cracked slip covering a dark gray paste is not a local technique, although designs were typically Cibolan. These ceramics appear to be products of the Mount Taylor region in the south, and, if so, may explain the

spacing of the two settlement groups founded by immigrants from two different regions. Both community groups expanded their settlements through remodeling and the construction of larger roomblocks by the A.D. 900s, but remained separate.

The Pueblo Pintado sites seem to represent an isolated community on the Chacoan frontier, where people in the late 800s moved rapidly into a previously unoccupied area. As we see below, the same process characterizes much of the Chaco Basin. We know little about the community's connections to important topographic features in the area, although the Jemez Mountains are visible to the east. It is also tied to the Chacoan road system and visual communication system to the west (Windes et al. 2000: fig. 1).

The Chaco East Community Area

About 7.5 km downwash from Pueblo Pintado is another community with a similar occupational history (Windes 1993: app. E; Windes et al. 2000). Two very small Basketmaker III habitations (29Mc534 and 566) are found within the community area, but there are no Pueblo I period (A.D. 750–875) sites. Although the area appears to be a desirable locale for farming, it languished until the late A.D. 800s, when a community of 10 small habitations was built. Except for one 25-room roomblock next to the Chaco Wash, the early East Community sites were small habitations among the boulders and ledges of the north-facing cliffs. These site locations suggest the arrival and use of the area by a small farming group in the warmer months. None of the small sites have formal middens; the refuse is broadcast in front of their cavate quarters and down the talus slopes. Unlike in the Pueblo Pintado community, the East Community Pueblo I habitations were small and yielded slightly later painted wares of early Red Mesa Black-on-white and wide and narrow neck-banded, suggestive of initial site use in the late A.D. 800s/early A.D. 900s. The earliest site yielded a ceramic assemblage dominated by Red Mesa Black-on-white, with some Kiatuthlanna, and overwhelming amounts of plain gray sherds. But the dominance of wide neck-banded gray ware with little accompanying narrow neck-banded sets this site apart from the other, presumably slightly later, early Red Mesa sites in the community. Settlers founded the East Community in an advantageous situation commonly seen in Chaco Canyon—the settlement is along the main wash where prominent side tributaries are present. There is a greater diversity of plants here than within the most heavily occupied portion of the canyon downstream, reflecting the slightly greater local precipitation of about 254 mm (10 inches).

This initial late Pueblo I occupation heralds the rise of a large cluster of contemporary settlements in the A.D. 900s with a great house (29Mc560) in their midst. Without excavation, we cannot know whether the great house was founded coeval with the late Pueblo I sites. Surface sherds and exposed great house masonry suggest construction of the great house by the A.D. 900s at the earliest (Windes et al. 2000), when small site density was higher. A prehistoric road leaves the canyon bottom to encircle the great house, which must be part of the main route that extends to/from Pueblo Pintado as well as down canyon. Pueblo I settlements are scarce for the 9 km between the East Community and the eastern park boundary, although little of the canyon and mesa tops have been systematically surveyed. There are a few Pueblo I sites in the area between Shabik'eschee Village and Fajada Butte, but more may be buried in the floodplain deposits (Windes 2006).

Fajada Gap

Fajada Gap—a wide, eroded gap through Chacra Mesa punctuated by Fajada Butte—was densely occupied in the early and later ancestral Pueblo periods (see Windes 1993). Although Hayes (1981: fig. 13) considered Fajada Gap as dense with Pueblo I habitations, the great majority of these are late Pueblo I and early Pueblo II in origin. During the 1972 inventory survey, many Pueblo II–III habitations were recorded as having Pueblo I components based on the presence of late Pueblo I/early Pueblo II sherds. Excavations suggest that an initial late Pueblo I occupation may mark the founding of many of these later sites (i.e., McKenna 1984; Truell 1992; Windes 1993). There are also several Pueblo

I sites along the South Ridge just outside the south Park Service boundary fence (Windes 1993: fig. 9.2; 2006). The gap contains two great houses with initial construction in the late A.D. 800s, Kin Nahasbas (Mathien and Windes 1989) and Una Vida (Figure 5.6).

Excavations at two park sites, 29SJ299 and 29SJ628, yielded dates in the A.D. 600s, 700s, and 800s, but these are scattered hamlets. Site 29SJ628, occupied in the early A.D. 700s, is unique in Chaco for the dominance of Lino Black-on-gray (Toll and McKenna 2006), a pottery type produced to the west and northwest and perhaps indicative of some movement of new peoples into the Chaco area starting in the eighth century.

Fajada Wash, South Fork Valley Community: A Prominent Pueblo I Community

One of the major southern drainages that flows into Chaco Canyon is the Fajada Wash (formerly the Vicente Wash). This wash drains a 515-km^2 (199-mile^2) region that extends along the south face of Chacra Mesa for 35 km (22 miles), reaches the Continental Divide, and captures runoff from Pueblo Pintado Canyon. When storms race northeast across the Chaco Basin in the summer and are

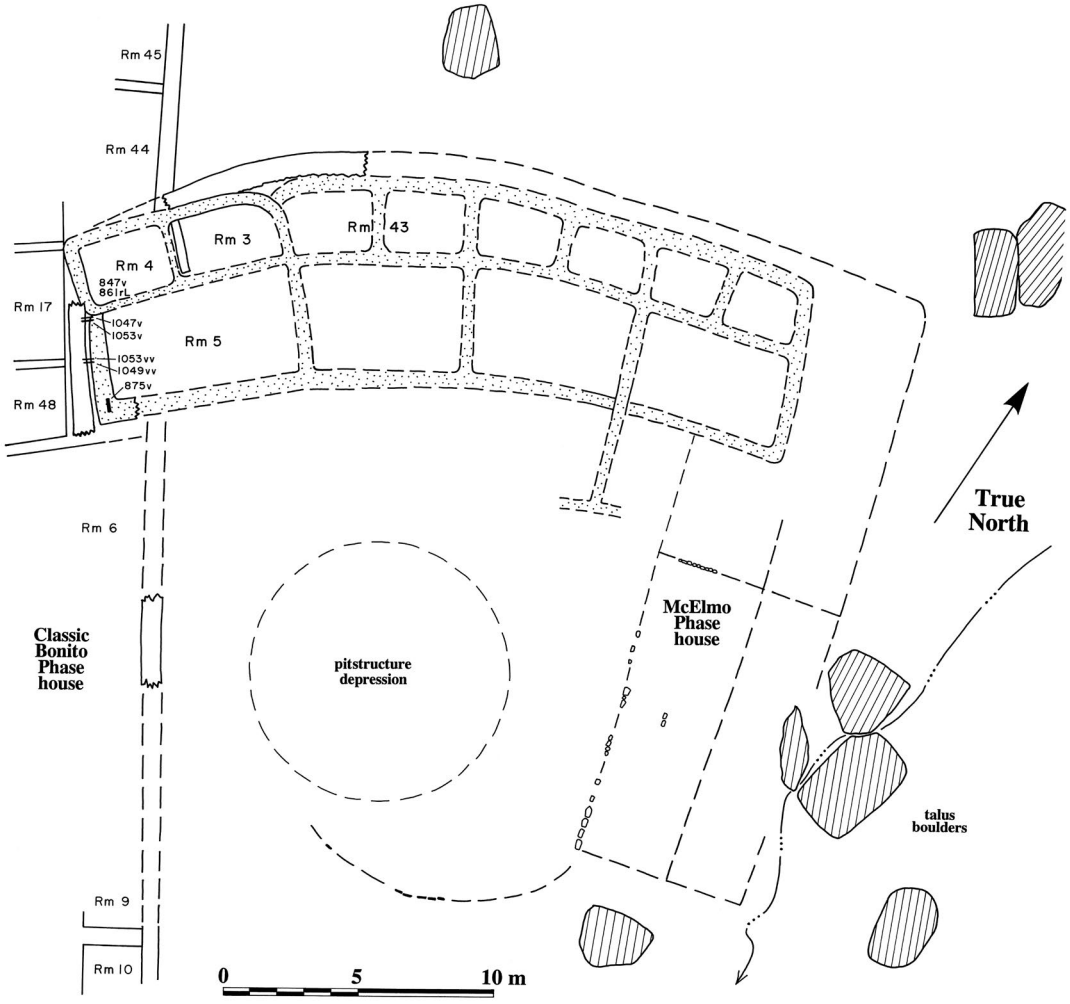


Figure 5.6. The middle to late Pueblo I construction at Chaco's Una Vida great house (in stippled pattern) that was later incorporated into the later A.D. 900s and 1000s great house and into a later A.D. 1100s McElmo-phase house addition. Map original by Tom Windes. Courtesy of National Park Service, Chaco Culture National Historical Park Catalog No. CHCU 65970.

impeded by Chacra Mesa and the long, high ridge about 10 km (6 miles) south, considerable moisture may fall into this drainage or within Chaco Canyon as the storms enter through Fajada Gap. It is at this confluence of drainages that the large Una Vida–Kin Nahasbas great house community arose in the late A.D. 800s and A.D. 900s (Judge et al. 1981; Windes 1993), while more settlement expanded along Fajada Wash outside the canyon.

The South Fork of the Fajada Wash runs due south about 15 km (9 miles) from Fajada Butte and the Chaco Wash. It parallels State Road 57, which leaves the park toward Crownpoint, New Mexico, until it terminates at a long east–west ridge. Small mesas cluster within the upper valley, although not a tree is to be seen. The upper 6 km (1,581 ha) of the drainage basin was intensively surveyed in 1993–1999 by the senior author with Sierra Club assistance, revealing numerous ancestral Pueblo sites. It is here, centered at site 29Mc184, that the largest Pueblo I settlement in the area is located (see Windes 2006 and 2007 for detailed accounts). The Pueblo I and II settlements are without extensive multicomponent occupancies and are spatially distinct within the valley.

A large community of Pueblo I sites was discovered in the valley along State Highway 57 after one of these sites, 29Mc184, was tested in 1975 (Windes 2006). Between four and five sections were inventoried in 1993, from the valley head and down drainage about 6.5 km. About 7 km of the valley have not been systematically inventoried between the park's south boundary and the 1993–1999 survey area, but there are few, if any, early sites evident in the lower area.

The South Fork Pueblo I community was unlike any other Pueblo I settlement reported thus far for the Chaco Canyon area. Almost all the 26 sites in the community were settled along an arcing strip of land bordering the west side of the South Fork of the Fajada Wash. These sites cluster into an area of 3.4 km^2 around 29Mc184, a prominent complex of four Pueblo I roomblocks. There were no Pueblo I sites found along the eastern side of the valley, and only two (29Mc652, 29Mc656) were distant from the cluster, occupied far up the valley.

Most roomblocks probably served one to four families, based on surface room remains (Figures 5.2, 5.3). The maximum number of potential domestic units represented by any of these sites is eight, a small size compared with the large contemporary Pueblo I sites north of the San Juan River. These small sites are comparable to the "hamlets" described for investigations in the Dolores area (Kane 1986a: table 5.1; Wilshusen and Ortman 1999). Generally, individual roomblocks were built to face southeast or south, following local traditions. The main South Fork occupation was at about A.D. 800, although use of some roomblocks continued into the late 800s.

Overall, the Pueblo I settlements represent between 50 and 70 families, if all were occupied contemporaneously, thus replicating occupancy patterns at the larger villages investigated at Dolores. But using modified criteria proposed by Wilshusen and Blinman (1992),[1] the momentary population yields about 230 people housed within 43 households, which fits within the proposed range for Pueblo I villages in the Mesa Verde region. The difference between the two areas lies in household placement; in the north, appended roomblocks were clustered, but here they were dispersed. The community mimics the pattern of Pueblo I households recorded by Wilshusen and Wilson (1995) north of Aztec at Cedar Hill, in the Largo (Windes and McKenna 2008), and on Elk Ridge in southeastern Utah (Guilfoyle 2004; see Allison et al., Chapter 3), reflecting the social reformatting discussed by Wilshusen and Wilson (1995) for the Pueblo I period after people left the north. The tight clustering of the roomblocks suggests strong integration of the communities and possibly community-controlled land tenure.

Many sherds from a small sample of several sites in the community were tempered with chalcedonic-cemented sandstone. This material is a key to possible southern Chaco Basin pottery production around Thoreau, New Mexico (see Toll and McKenna 1997:90, 94–96). A link to the south is strengthened by the presence of much yellow-spotted chert (Zuni or "Chinle" chert: Love [1997] lithic code 1072) in most of these Pueblo I sites,

ranging between 15 and 45 percent of all chipped stone found on the surface at individual sites. The highest concentrations were found at 29Mc184 and sites nearby. High percentages were also found in the Basketmaker and Pueblo I period sites along the Kim-me-ni-oli Wash near Kin Bineola (Cameron and Young 2002: table 5.23), suggesting movement of the yellow chert from the south along the south–north drainages. Le Tourneau (1997) has found that this material occurs as secondary deposits in the Zuni Mountains near Lookout Mountain (i.e., near Thoreau, New Mexico), and it is common in nearby sites in the Red Mesa Valley (Elstein 1990: table 23; Harper et al. 1988; Van Dyke 1999, 2000).

Despite the profusion of Pueblo I sites in the South Fork community, the settlement was short-lived. With a few exceptions, refuse on the sites is sparse, with most surface sherd densities less than one sherd per m^2. Midden areas are small, as in the nearby Fajada Gap and Shabik'eschee areas. Overall, occupations were probably very similar to the excavated Pueblo I sites described by Windes (2006) at 29SJ299 and 29SJ724—both exceedingly short occupations.

Aside from location, other aspects help to separate the Pueblo I and Pueblo II settlements along the South Fork Valley. Pueblo II midden size and densities are typically several times greater than those in the above Pueblo I community. These differences may be the result of longer occupations and more diverse activities at the Pueblo II habitations. The Pueblo II sites were widely dispersed up and down the valley rather than localized. Nevertheless, the mean roomblock size is about the same in the two periods, each averaging about seven or eight rooms per roomblock.

The Pueblo I settlement group appears to identify with the prominent buttes to the north: nearby Fajada Butte and distant Huerfano Mesa. Residents at all the Pueblo I sites except one had a view of Fajada Butte, as well as to far-off Huerfano Butte. These peaks were not visible everywhere in the valley, and their importance does not seem paramount for site placement in the following Pueblo II period, when many habitations did not have a direct view of them. Besides the unusual relief of the two larger roomblocks at 29Mc184, other aspects of their setting suggest patterns seen in later great house communities. Every Pueblo I habitation in the South Fork Valley except two (located far up the valley), or perhaps three, has visual connection with the two 29Mc184 roomblocks built partially of rare Type I masonry (92 percent; e.g., see Windes et al. 2000 for similar visibility connections in the Chaco East Community).

In the headwaters of the adjacent drainage just to the west, the Kin Klizhin Wash, there is an identical settlement pattern of 10 sites. A smaller area (207 ha) was surveyed here but all habitations were Pueblo I, whereas known Pueblo II sites were located farther down-drainage (Sebastian and Altschul 2002).

The South Fork of the Fajada Wash and the Upper Kin Klizhin communities are particularly important for debate over the recognition and rise of Chacoan great house communities. The 29Mc184 roomblocks are connected to a nearby great kiva, 230 m to the north, by a short prehistoric road that probably integrated the entire Pueblo I community. Aerial photographs reveal that other roads cut through the valley (Richard Friedman, personal communication 2004), and other early roads are known along the Chuskan slope (Friedman et al. 2001). The great kiva is closest to 29Mc184 but cannot be seen from other Pueblo I habitations in the community. Might the two mounded masonry roomblocks at 29Mc184 mark early start-ups of great house construction and, more importantly, the beginning of social differentiation? The community settlement, the presence of a great kiva, the aberrant 29Mc184 roomblocks visible from most of the other community houses, and the prehistoric road connecting the great kiva and 29Mc184 suggest that this community was undergoing some social differentiation that might have developed into a great house community by early Pueblo II times if it had continued its existence.

The orientation to prominent landmarks and the clustering of sites in lands that did not see much previous use indicate that the new immigrants who settled the South Fork brought a sense of community with them; it was not settled over time by

dispersed, unrelated groups coming together. For a short time, this community anchored itself within the greater landscape of a world that extended beyond the mere valley. In addition, the presence of micro-drills (see Lekson 1993) and much worked Red Dog shale indicate the beginnings of an ornament industry and perhaps increased ritual that shortly afterward (by A.D. 875) exploded in the greater San Juan Basin and Chaco Canyon. It is an important settlement for further study as a developing great house community without the problems of later overlying building occupations.

Chaco Canyon from Fajada Gap to Peñasco Blanco

Few Pueblo I sites are found along Chaco Canyon between the communities centered at Fajada Butte and Una Vida, and Pueblo Bonito and South Gap. Two Pueblo I sites (29SJ721 and 29SJ724) were excavated during the Chaco Project near the mouth of Weritos Rincon across from the Hungo Pavi great house, and three or four Pueblo I habitations, including 29SJ724, were located along a ridge immediately west of Weritos Rincon (Windes 2006). Hayes (1981: figs. 13, 15) identified a number of early ancestral Pueblo sites along this stretch of canyon and in Weritos Rincon and Mockingbird Canyon. Reinspection of these sites revealed that none were habitation sites except for a small Pueblo I roomblock near the mouth of Mockingbird Canyon.

During the Pueblo II–III period, the area around South Gap (particularly in the Casa Rinconada rincon) was dense with habitation sites. For farmers, the attraction appears to have been the wide gap left between the West and South mesas, the side canyons in the Casa Rinconada area and in Cly's Canyon, and the masses of exposed slickrock bordering the tops of the north side of the canyon, the slickrock enhancing the potential for storm runoff waters usable for horticulture (Vivian 1972, 1974, 1990, 2004). Despite the heavy later occupation, this area of Chaco Canyon is devoid of early Pueblo I habitations, except for a pit structure encountered by Judd (1964) during his excavations at Pueblo Bonito and, of course, the initial central roomblock forming the heart of Pueblo Bonito built in the A.D. 800s (Judd 1964; Lekson 1984; Windes 2006; Windes and Ford 1992). Pueblo I habitations are present in South Gap, but do not seem prevalent until the appearance of many new sites by the late A.D. 800s. Similarly, there are almost no Pueblo I sites in the Escavada Wash area north of the park, although this area has yet to be entirely systematically surveyed.

The mouth of Chaco Canyon lies 4.9 km downcanyon from Pueblo Bonito. Here, the towering bluff of West Mesa on the south side overlooks the canyon to the east, and the Peñasco Blanco great house was built on top of a northern projection of this mesa. This spot afforded wonderful views up Chaco Canyon to where the canyon suddenly swings south at Kin Nahasbas and Una Vida and to the southwest across the badlands of the Padilla Wash area as well as to the Chuska Mountains 80 km (50 miles) to the west. There is no early ancestral Pueblo occupation evident between the South Gap concentration and Peñasco Blanco within the canyon or on the adjacent mesas. This absence may be the result of flooding, when at times a small lake may have existed in the bottomlands (Force et al. 2002). But at the mouth of Chaco Canyon and extending south from Peñasco Blanco is a very large early Basketmaker III settlement centered at 29SJ423.

Despite the dense Basketmaker occupation, few Pueblo I sites are evident, although just downstream 3 km is a short north-flowing drainage, Padilla Wash, that is packed with early ancestral Pueblo occupation, including several Pueblo I sites (Figure 5.7) adjacent to the Padilla Wash great house (Windes 2006). There may be more in the Padilla Wash Valley, but a resurvey of the area would be necessary to confirm those listed during the 1972 survey, when many were mistakenly designated as Basketmaker III rather than Pueblo I sites. Although there is a depopulation of Chaco during the late Basketmaker III and early Pueblo I periods, the Peñasco Blanco great house saw its earliest construction by the late A.D. 800s. This great house, rather than Pueblo Bonito, appears to have served as an initial focal point during expansion of settlement along the Chaco River from the west and, possibly, the north (Windes 2007).

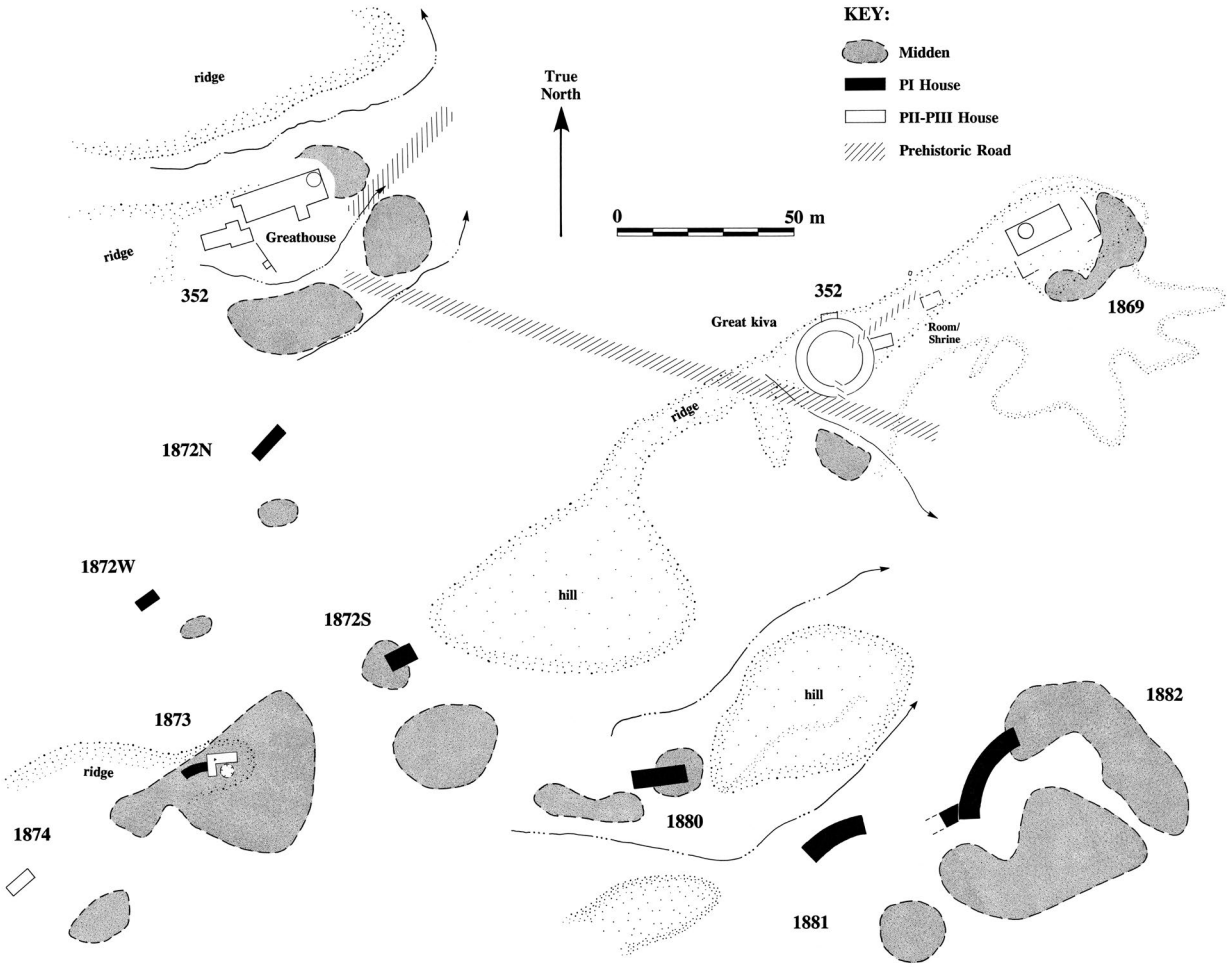


Figure 5.7. Pueblo I community at Padilla Well Wash with the later great house and great kiva. Pueblo I houses are solid black. Pueblo II–III houses are outlined. An early great house probably lies underneath 29SJ352. Assembled from original site plans by Tom Windes, Jamie Schubert, Peg Kaiser, Cheryl Srnka, Richard Moeller, Al Webster, and Steve Cowan. Courtesy of National Park Service, Chaco Culture National Historical Park Catalog No. CHCU 65985.

Selected Areas of Pueblo I Settlement along the Chaco River

When Marshall and colleagues (1979) reported on community settlements and great houses across the Four Corners area, they provided the first detailed look at ancestral Pueblo settlement in the interior San Juan Basin as well as elsewhere. Using their report as a guide, the senior author returned to many of their reported communities to reassess their status nearly 25 years later, particularly for recognition of early great houses and associated Pueblo I settlements.

Kin Klizhin Wash

Immediately east of the Kim-me-ni-oli Wash and just west of Padilla Wash is the Kin Klizhin Wash, which heads at an east–west rise running east from the Kim-me-ni-oli Wash. This is a shorter drainage system (23 km/14 miles in length) than its neighbor, but it is packed with Chacoan settlement, along

with the Kin Klizhin and Upper Kin Klizhin great houses (Marshall et al. 1979) and the prehistoric Chaco South Road (Nials et al. 1987). Two Pueblo I habitations and four late Pueblo I roomblocks are scattered along the wash (Sebastian and Altschul 2002). A few more small Pueblo I sites are found entering the east side of the valley by Kin Klizhin, and another Pueblo I roomblock is found on the mesa top at the head of the Padilla Wash. In the upper valley, a number of late Pueblo I sites were noted (Stein 1983:8–14) in the area along with a late Pueblo I great kiva, Casa Patricio (Nials et al. 1987:51).

Casa del Rio

One of the most important early sites is Casa del Rio (LA 17221), located along the Chaco River a mere 10 km downstream from Peñasco Blanco and just downstream from the mouth of Kin Klizhin Wash. At one time, Casa del Rio was identified as a large Chacoan great house with over 125 multistoried rooms (Marshall et al. 1979:31–32) situated on a small ridge next to the Chaco River. Reexamination of this important site (Windes 2007:67–71, fig. 3.14) reveals a more complex situation than a simple block of great house architecture. This site warns us that we must constantly reexamine field data in light of our gained experiences, new information, and new hypotheses.

Much of the great size of the site is not the great house itself but a 112-m-long, curving Pueblo I roomblock reminiscent of those north of the San Juan River. The Pueblo I roomblock contained perhaps as many as 16 households (about 88 residents, as per Wilshusen and Blinman 1992:257–258), rivaling those huge Pueblo I settlements along the northern tributaries of the San Juan. This structure extends under both ends of the great house. The early structure was marked by a few upright foundation slabs and formerly had walls of mud and spalls typical of the region. It is clearly the largest Pueblo I roomblock in the Chaco Canyon area and easily exceeds in size the initial three small contiguous Pueblo I roomblocks at Pueblo Bonito (Windes and Ford 1992). There is nothing to suggest that the early roomblock differs in use from its contemporaries elsewhere, except for the inordinate amount of refuse. Almost no community domiciles are evident.

In contrast to the large Pueblo I roomblock, a small, compact stone-masonry great house of about 21–27 rooms was built over the initial adobe Pueblo I roomblock, which duplicates the construction histories observed at McPhee Pueblo (Brisbin et al. 1988), House of the Giant Midden (see below), and Skunk Springs (Marshall et al. 1979; Windes and Ford 1992). Given the break in architecture and superimposition of the two construction phases, the earlier roomblock must have been abandoned before construction started on the great house, although the interval between occupations may have been quite short. Construction of the early great house appears to have started by the late A.D. 800s (based on ceramic time) immediately after cessation of the underlying roomblock activities. Given the profuse numbers of food preparation tools at Casa del Rio and other sites along the Chaco River, which are unmatched elsewhere in the area, a horticultural strategy focused on the wash channel must have been successful and led to the production of abundant cultural refuse at these sites along the Chaco River.

Kim-me-ni-oli Wash

This drainage extends from the Chaco River south 48 km (30 miles) into the Dutton Plateau behind Crownpoint, New Mexico. This important wash contains extensive settlements along with the great houses of Kin Ya'a, Bee Burrow, Kin Bineola, and at Lake Valley. Near Bee Burrow are a number of large, circular slab-lined structures which might be considered Pueblo I great kivas except for their lack of a depression (Doleman 1976; O'Laughlin 1977), and there are some small Pueblo I roomblocks in the greater vicinity which have not been systematically recorded. As such, the drainage provides a major conduit between the Chaco Canyon region and the southern periphery of the Chaco Basin.

The upper drainage of the Kim-me-ni-oli Wash, around the Kin Ya'a great house near Crownpoint, New Mexico, is far removed from the canyon area. A survey around Kin Ya'a in 1972 yielded almost

no Basketmaker III or Pueblo I sites (this part of the 1972 Chaco inventory survey has not been published). In a more extensive block survey to the east, there were also few, if any, Pueblo I sites and no Basketmaker III sites recorded (Hooten and Andrae 1978). Just west of Crownpoint, however, is a large Basketmaker III–early Pueblo I site (Whitten 1982) that was impacted by highway construction. Stein and Roney (1987:174–175) recorded a Basketmaker III slab-lined roomblock (LA 38108) along the Chaco South Road near Kin Ya'a, but its arc-shaped, 50 m length clearly marks a very large Pueblo I roomblock.

Lake Valley

Lake Valley is downstream 11.3 km (7 miles) from Casa del Rio along the Chaco River at the mouth of the Yellow Point/Kim-me-ni-oli Wash, which has its headwaters 90 km (56 miles) south in the Dutton Plateau. Next to the Lake Valley Mission grounds west on a small bench are five or six unrecorded small, classic adobe and slab-foundation Pueblo I roomblocks overlooking the Chaco River to the north and the later Lake Valley great house cluster (LA 18755) to the south. These roomblocks are architecturally identical to those recorded in the Fajada Wash, South Fork Valley. The sparse refuse at each roomblock indicates a short occupation. Nearby, a few isolated Pueblo I sites with deep pit structures and little surface architecture were recorded and excavated along State Highway 371 west of Lake Valley (Doleman 1979; Wiseman 1982b).

The Lake Valley area near the small Pueblo I roomblocks on the Mission bluff was reoccupied in the late A.D. 800s, as indicated by the presence of three small Type I masonry roomblocks, sometimes portrayed as small great houses, surrounded by enormous amounts of refuse (Marshall et al. 1979:73–75) and ground stone. The size of the roomblocks and the amount of trash is excessive for normal domestic activities. This is yet another example of the shift from small, limited occupations during Pueblo I times, often with fewer than 100 surface artifacts, to the massive investment in architecture and cultural activities that produced millions of artifacts at sites by the late A.D. 800s (Windes 2006, 2007).

At Kin Bineola, a park outlying unit, the 1983–1984 survey of two sections revealed no clear Basketmaker settlement, but 26 Pueblo I and late Pueblo I roomblocks in three to five groups (see Sebastian and Altschul 2002). Based on ceramics, however, the survey identified many of these sites as Basketmaker III, although the presence of slab-based contiguous rooms marks these as Pueblo I roomblocks. Fifteen were classified as late Pueblo I or late Pueblo I–early Pueblo II. A reexamination of the cluster of several early sites in the northwest part of this area revealed just one small Pueblo I roomblock (29SJ2525), while those adjacent to it were little more than sparse sherd scatters that do not justify a habitation assignment. As elsewhere, Pueblo I occupation is very sparse until movement increased into the valley around A.D. 875.

The Kin Bineola great house has yielded tree-ring dates from the early A.D. 900s, but it is not unreasonable to postulate a late A.D. 800s initial construction there. Extensive early construction forms the backbone of the later great house additions. Oddly, the site has yielded early and late ceramic assemblages that are matched by tree-ring dates, although there is a hiatus of tree-ring dates and ceramics in the A.D. 1000s (Windes 1982). The hiatus suggests that either the great house was unoccupied during that period or was not used in an intensive manner that generated the piles of refuse found at other contemporary great houses in the region.

Indian Creek

Although several pipeline surveys have extended down Indian Creek valley from the Chaco River (e.g., Marshall and Bradley 1994), there has been little evidence of Pueblo I occupations. For the most part, identified Pueblo I sites are very late Pueblo I and early Pueblo II settlements, with true Pueblo I sites being rare.

Willow Canyon

Seven km (4 miles) east of the Chaco River's Great Bend, a short lush side drainage empties into the

Table 5.3. Ceramic tabulations from Pueblo I sites in Willow Canyon

Ceramic Type	Site 1 at Pablos	Site 1 next to road	Site 3 W slope	Site 4 W slope	Site 6 So. Mesa top	LA 18236 So. Mesa top	Weaver's House LA 18235	Totals	%[a]
Cibola Gray Ware								[255]	[22]
Plain gray	80	4	35	26	15	9	57	226	19
Lino Gray (rims)	5		7	1		1	5	19	2
Kana-a Neck-banded		1			2	1	4	8	1
Tohatchi Banded				1				1	T
Unclassified rims					1			1	T
Chuska Gray Ware								[595]	[51]
Plain gray	22	35	59	40	42	102	187	487	42
Bennett Gray (rims)	1	1	4	2	2	1	3	14	1
Sheep Springs & Tocito Gray		6	4	1	18	30	17	76	6
Gray Hills Gray		2	1		1	4	2	10	1
Unclassified indented corrugated	1							1	T
Unclassified rims		1			1		5	7	T
Mesa Verde Gray Ware[b]								[46]	[4]
Plain gray						3	36	39	3
Mocassin Gray							5	5	T
Unclassified rims							2	2	T
Cibola White Ware								[143]	[12]
La Plata B/w			1			1	1	3	T
White Mound B/w	12		17	4	1	1	9	44	4
Kiatuthlanna B/w		1			8	6	9	24	2
BM III–PI M/w	1		1				1	3	T
Red Mesa B/w		3	1		1	7	2	14	1
Unclassified Pueblo I–Pueblo II M/w						2	19	21	2
Unclassified white ware		4	2	1	8	12	7	34	3
Chuska White Ware (mineral paint)								[28]	[2]
Crozier B/w		1					2	3	T
Drolet B/w		1			6	4	4	15	1
Naschitti B/w						3	1	4	T
Unclassified M/w						4	2	6	1
Chuskan White Ware (carbon paint)								[32]	[3]
Theodore B/w			1					1	T
Pena B/w	1	1	1		3	6		12	1
Tunicha B/w					4	8		12	1
Newcomb B/w					1			1	T
Unclassified C/w				1	3	2		6	1
Unclassified Chuska White Ware (no paint)		2	2	2	6	23	10	[45]	[4]
Mesa Verde White Ware								[6]	[1]
Piedra B/w						2	4	6	1

Table 5.3. (*cont.*)

Ceramic Type	Site 1 at Pablos	Site 1 next to road	Site 3 W slope	Site 4 W slope	Site 6 So. Mesa top	LA 18236 So. Mesa top	Weaver's House LA 18235	Totals	%[a]
Tusayan White Ware								[11]	[1]
Lino B/g	2	1	1	1	2			7	1
Kana-a B/w						2	2	4	T
San Juan Red Ware	3				1	1	6	[11]	[1]
Chuska Red Ware						1		[1]	[T]
Totals	128	64	137	80	126	236	402	1173	101
Transect area (m^2)	7	7	5.6	18	8	17.5	32.7		
Ceramic Time (A.D.)[b]	775–850	875–900	800–875±	850–875	875–925	875–925	875–900		

Note: Limited field tallies done except for the Weaver's House and LA 18236. B/w = black-on-white, M/w = mineral-paint-on-white, C/w = carbon-paint-on-white, B/g = black-on-gray.

[a] T = trace amount (less than 0.5%).

[b] Tempered with crushed rock (trachyte).

Chaco River from the south. Although there have been sterling accounts of the Chaco community (Marshall and Bradley (1994:347–348) located in the drainage 3 km from the Chaco River, it was only first mapped in 2000 (Windes 2006). Several esoteric sites were also described on the mesa stops overlooking the valley (Marshall et al. 1979:91–94), but there has been little recognition of the limited Pueblo I settlement there.

The settlement in the Willow Canyon valley offers one of the best locations for exploring the in-depth transition of the middle and late Pueblo I occupation in scattered hamlets to the rise of clustered communities typically marked by a great house and many surrounding small habitations. An obvious great house is absent, but some sites within the community stand out for their location above the majority of the community sites and their use of Type I masonry wall construction. Despite assertions to the contrary (Marshall and Bradley 1994:346), no great kiva is evident in or near the community. In the 1960s, Stewart Peckham's field notes identified a great kiva in the northwestern part of the valley, but despite a search, this has not been relocated.

The late Pueblo I and early Pueblo II community at Willow Canyon is adjacent to a prehistoric road (the Great West Road connecting Peñasco Blanco and Skunk Springs great houses) and crowds about 11 buildings and an immense amount of refuse within an area 120 m by 120 m (see Windes 2006, 2007:73–79). Most builders employed foundation slab and adobe wall construction typical of the interior basin Pueblo I period, but some used Type I masonry. This is the same transition in building techniques observed over time at McPhee Pueblo in the Dolores River Valley (Brisbin et al. 1988) and in the construction at Kin Bineola, Peñasco Blanco, Una Vida, Kin Nahasbas, and Pueblo Bonito great houses in the late A.D. 800s and 900s.

There are eight Pueblo I roomblocks scattered within a 2 km by 2 km area in and around the later community. Ceramics from seven of these sites suggest that occupation was mainly in the middle and late Pueblo I period (Table 5.3). While most of these small Pueblo I roomblocks are slab-foundation and adobe construction, the one on top of the mesa to the west of Willow Canyon with a wide view of the northern and western San Juan Basin was built of huge upright slabs and Type I masonry (Figure 5.8; Windes 2007: fig. 3.23). Architecturally, this roomblock (LA 18235) follows the development observed at McPhee Pueblo (Brisbin et al. 1988) in the Dolores River Valley, a probable early great house (Windes 2007:61–64). The Willow Canyon sites are atypical in other ways from the dominant architectural theme in the Chaco Basin, especially the widespread use of Type I masonry despite the lack of a substantial great house.

A more systematic and extensive survey is needed within Willow Canyon to understand the early

Figure 5.8. The House of the Weaver (LA 18235), showing construction of large upright slabs and Type I masonry. Note the elevated setting overlooking much of the San Juan Basin to the west and north. Photograph by Tom Windes (July 2003).

occupations there, but what we know indicates settlement by a few families scattered over the area until a sharp infusion of peoples entered the valley in the late A.D. 800s. These newcomers packed into the small area on the east side of the valley and generated immense volumes of refuse. The closely spaced roomblocks indicate intergroup familiarity and the arrival of a large group that stayed together after leaving their former homeland.

South of Willow Canyon about 16 km (10 miles) is a cluster of Pueblo I roomblocks northwest of the Whirlwind great house (Kearns 1996:2-139, 2-150; Marshall et al. 1979). Kearns shares similar views with us on the identification of Pueblo I sites, so that the main question is the settlement size and extent. A pipeline survey also extended through the Chacoan Standing Rock community south and west of Crownpoint. This community was not reinvestigated by the authors, but it reflects the difficulties in understanding Pueblo I occupation in the region. Marshall (1994:367) indicates that 20 "Early Pueblo I" roomblocks with slab foundation stones and "adobe and jacal" (probably not jacal) walls formed the initial settlement. The characterization that these Pueblo I roomblocks are marked by ceramic assemblages dominated by "Red Mesa ceramic horizons" indicates, instead, very late Pueblo I and Pueblo II occupations—that is, the same pattern we have commented on above for the late A.D. 800s influx of peoples into the Chaco Basin. These same assemblages dominated the cluster of sites described in Indian Creek (Marshall and Bradley 1994). Yet, inspection by the senior author confirms the revised temporal assignment. It is more likely

that Marshall's dispersed four "Late Basketmaker III–early Pueblo I" sites there, with "La Plata and Red Mesa black-on-whites" and low quantities of refuse and short-term occupations, represent the late A.D. 700s/800s Pueblo I settlement described in this chapter.

Great Bend

Another great house community is present at the Great Bend in the Chaco River just before the river changes directions and flows north 63 km (39 miles) to reach the San Juan River. This community follows the pattern repeated above, with earlier scattered small Pueblo I roomblocks on the ridges nearby and directly behind the great house on the same ridge. There has been no systematic survey of these sites that we are aware of, but we guess that the total number is less than 10. The great house and a couple of adjacent buildings appear to have been founded in the late A.D. 800s, and there is much refuse and ground stone in association (Windes 2006, 2007:79–81).

The Chuska Valley

The eastern flanks of the Chuska Mountains offered ancestral Pueblo peoples access to a wealth of resources: wood, lithic raw materials, pottery temper, big game, and well-watered, arable farmland. As in the central Chaco Basin, we find a relatively sparse and scattered early Pueblo I period occupation, followed by an intense surge of settlement during the late Pueblo I period, beginning at around A.D. 875. However, the depositional environment in the Chuska Valley in areas such as Tohatchi Flats tends to preclude identification of early Pueblo I (and Basketmaker) structures prior to subsurface investigations. Thus, it is likely that the early Pueblo I occupation of this area is underrepresented.

Bennett's Peak #1, Bennett's Peak #2, and Mitten Rock (Bannister, Robinson, and Warren 1970:13, 19; E. A. Morris 1959) are three small, early Pueblo I sites along the eastern slopes of the Chuska Mountains that resemble the Pueblo I sites excavated by the Chaco Center. The largest of these, Bennett's Peak #1, consists of a single roomblock of 22 contiguous rooms arranged in a double row; tree-ring date clusters suggest possible construction between A.D. 799 and 850. Several early Pueblo I sites of a similar size were investigated by the El Paso pipeline project on Tohatchi Flats. For example, Red Willow Hamlet consisted of an arc of 13 rooms fronted by two deep pit structures (Figure 5.2). The room arc was dated by ceramics, radiocarbon and archaeomagnetism to A.D. 750–800/840; an earlier, underlying arc of six rooms dated to A.D. 725–775 (Loebig 2000). At Flowing Well Hamlet, nearby, archaeologists excavated a single pit structure dated by the same means to A.D. 750–830 (Loebig et al. 2000). Near Mexican Springs, southwest of Tohatchi, the Zuni Cultural Resource Enterprise dated six pit structures at three multicomponent sites to periods between the early 700s and the late 800s (Damp 1999). In Dye Brush Wash, west of this area, a site in the Grey Ridge community contains seven pit structures ceramically dated to between the late A.D. 700s and early 900s (Dennis Gilpin, personal communication, April 2003). Finally, two Pueblo I settlements from the A.D. 700s, yielding five and 18 pit structures, were excavated during the Navajo Roads Project between Toadlena and Newcomb (P. Ruppé 2000:1013–1014).

Migrants from north of the San Juan River logically may have followed the Chaco River southward as they spread along the eastern slopes of the Chuskas and into the Chaco Basin. Many late Pueblo I/early Bonito phase sites are located along this route (Van Dyke 2007: table 4.2, fig. 4.10). On the flanks of the Chuska Mountains, there are substantial multi-roomblock late Pueblo I/early Pueblo II occupations at Newcomb and Skunk Springs. The usual architectural and ceramic problems apply to these sites, however, so a best guess of the date of the early occupation of these communities is between A.D. 875 and 950. Despite the lack of visible early architecture, there is substantial earlier Pueblo I refuse, mostly obscured by later deposits, along the eastern edge of the Newcomb community that indicates occupation as early as the A.D. 700s (Table 5.4).

Table 5.4. Selected ceramic transects from the Pueblo I occupation along the eastern edge of Newcomb Ridge, Newcomb, NM, mixed with some later materials

Ceramic Type	Mound 1	Mound 3 (SE)	Mound 3 (NW)	Mound 4	Mound 6	Mound 9	Totals	%a
Cibola Gray Ware							[1378]	[54]
Plain gray	184	240	115	76	220	454	1289	51
Lino Gray (rims)	9	7	4	5	17	26	68	3
Kana-a Neck-banded	1			1	2	1	5	T
Tohatchi Banded	3			6		1	10	T
Unclassified indented corrugated		1			4		5	T
Unclassified rims				1			1	T
Chuska Gray Ware							[730]	[29]
Plain gray	36	21		320	99	14	490	19
Bennett Gray (rims)	3			4			7	T
Sheep Springs & Tocito Gray	4			27	6	3	40	2
Gray Hills Gray	3	1		37	5	2	48	2
Capt Tom Corrugated				14	6		20	1
Unclassified indented corrugated	6	10	2		58	21	106	4
Unclassified rims	1			11	6	1	19	1
Mesa Verde Gray Ware							[3]	[T]
Chapin Gray (rims)					3		3	T
Cibola White Ware							[192]	[8]
La Plata B/w	4	1		2	6	10	23	1
White Mound B/w	4	3	3	4	9	12	35	1
Kiatuthlanna B/w		1		2	1		4	T
BM III–PI M/w	4	1	1	5	5	20	36	1
Red Mesa B/w	2			4	4		10	T
Gallup & Puerco B/w	1				10	2	13	T
Chaco-McElmo B/w						1	1	T
Unclassified white ware	5	5	2	18	16	24	70	3
Chuska White Ware (mineral paint)							[41]	[2]
Crozier B/w	1			2	1		4	T
Drolet B/w				6	2		8	T
BM III–PI M/w					1		1	T
Naschitti B/w						3	3	T
Brimhall &Taylor B/w	7				8	2	17	1
Unclassified M/w				5	3		8	T
Chuska White Ware (carbon paint)							[62]	[2]
Theodore B/w	2	1					3	T
Pena B/w				6	4	1	11	T
Tunicha B/w	1			9	4		14	1
Burnham B/w						2	2	T

Table 5.4. (*cont.*)

Ceramic Type	Mound 1	Mound 3 (SE)	Mound 3 (NW)	Mound 4	Mound 6	Mound 9	Totals	%a
Newcomb B/w				5	2		7	T
Chuska & Toadlena B/w	3			4	1		8	T
Unclassified C/w			1	10	5	1	17	1
Unclassified Chuska White Ware (no paint)	2	5		47	43	11	[108]	[4]
Tusayan White Ware							[10]	T
Lino B/g		4	1	1	1	1	8	T
Kana-a B/w				2			2	T
Smudged		1			1		[2]	[T]
San Juan Red Ware							[11]	[T]
Unclassified				3	8		11	T
Tallohogan Red					2		[2]	[T]
Chuska Red Ware							[11]	[T]
Sanostee B/r				4	7		11	T
Totals	283	301	129	650	575	612	2550	102
Transect area (m^2)	84.6	46.6	38.4	71	19.3	33.7		
Ceramic Time (A.D.)[b]	750–850	700–800	700–800	800–900	750–900	700–800		

Note: Ceramics field tallied by senior author in July 1997. Mound numbers of middens assigned starting from north end of community. This does not follow the Peckham and Wilson map, which is poorly illustrated. A total of 8,000 sherds were tallied but not all transects are reported here. B/w = black-on-white, M/w = mineral-paint-on-white, C/w = carbon-paint-on-white, B/g = black-on-gray, B/r = black-on-red.

[a] T = trace amount (less than 0.5%).

[b] Intrusives are discounted as part of Pueblo II assemblages from adjacent middens. Red Mesa B/w, however, is a swing type that could be slightly pre–AD 900 or AD 900s–1025 or both.

Skunk Springs is a good example of a Pueblo I period settlement that continued to be an important place in the Chacoan world for hundreds of years. A long A.D. 800s roomblock is atop Grey Mesa, 60 m above a broad, well-watered valley. A south-facing crescent of at least 20 rooms was fronted by a great kiva within an enclosed plaza (Marshall et al. 1979:109–112), but the roomblock stretches an additional 550 m to the west beyond the Marshall site plan (Windes and Ford 1992:79–80). A crescent-shaped Type I-masonry great house was added to the east end in the A.D. 900s. This structure was expanded and superseded several times during subsequent centuries. An extensive and equally long-lived late Pueblo I and Pueblo II community of unexcavated domestic pueblos clusters south and below the great house (Marshall et al. 1979:110), aligned along two possible east–west avenues. The Skunk Springs locale provides exceptional vistas to the north, east, and south. The view north from the early great house encompasses Bennett Peak, Ford Butte, Shiprock, Sleeping Ute Mountain, the Hogback, and the La Plata Mountains. Elsewhere the junior author has argued that line-of-sight connections north to landmarks such as Shiprock and Sleeping Ute Mountain may have been important for migrants newly arrived from areas north of the San Juan River (Van Dyke 2011).

From Skunk Springs, migrants could have traveled east into the Chuska Valley, following the Chaco River to Chaco Canyon (Van Dyke 2007:86–89). As discussed above, the Chaco River and its tributary drainages contain much in the way of late Pueblo I settlement, including early great houses at Great Bend, Willow Canyon, Lake Valley, Kin Bineola, Casa del Rio, and Padilla Well (Windes 2006, 2007). These migrants may have been later responsible for the late Pueblo I/early Pueblo II communities at the intersections of tributary drainages within Chaco Canyon (e.g., Windes et al. 2000).

The Red Mesa Valley

The Red Mesa Valley is a topographically defined area south of the Dutton Plateau located approximately 65–90 km (41–56 miles) south of Chaco Canyon and stretching approximately 80 km (50 miles) from east to west. The Red Mesa Valley encompasses the continental divide; the west half is drained by the Rio Puerco (Puerco River) of the West, and the east half is drained by the Rio San Jose. The valley is connected to the south Chaco slope through Borrego Pass. Early Pueblo I period settlement in the Red Mesa Valley, as in the Chaco Basin, appears to be present but sparse, and is poorly understood due to problems in site recognition and ceramic dating, and a relative dearth of systematic survey.

For example, there is a small early Pueblo I site on the mesa above the Chacoan great house of Casamero; it partly underlies a late Pueblo II white limestone masonry structure (Casa Elena). This early Pueblo I site (LA 50397) contains at least two arcs of slab-lined surface rooms fronted by a total of five to seven pit structures, and it is ceramically dominated by plain gray body sherds with some rims and necks of Lino Gray. The decorated ceramic assemblage is dominated by White Mound Black-on-white with some La Plata Black-on-white also present. LA 50397 has been recorded several times (e.g., Harper et al. 1988), but the early Pueblo I component has been obscured by a focus on the Chaco-era material. Similar early Pueblo I sites may also exist on the mesas above Red Mesa Valley, but systematic block survey coverage has yet to be undertaken.

The unexcavated site bears some resemblance to Gladwin's (1945) White Mound Village, which is situated approximately 60 km (31 miles) farther west along the Rio Puerco. When excavated, White Mound Village was found to contain 25 rooms in three roomblocks, as well as six pit structures, and is dendrochronologically dated between 780 and the early 800s (see Schachner, Gilpin, and Peeples, Chapter 6). Another similar site (LA 4487) with two roomblocks and 11 pit structures was excavated in 1961 during the I-40 road construction near Manuelito Canyon (west of Gallup) but has been minimally reported (Sciscenti 1962). Nevertheless, it is one of very few Pueblo I sites that has good dendrochronological dating (in the early A.D. 800s; Bannister Robinson, and Warren 1970:37–38) for four of its pit structures and yields the classic ceramic assemblage of the period of Lino Gray and White Mound Black-on-white.

As in the Chaco Basin to the north, a sparse early Pueblo I occupation was supplanted by very rapid expansion in the late A.D. 800s. Several Chacoan great house communities in the Red Mesa Valley are known to have components that date from the late Pueblo I period. For example, the Fort Wingate community reportedly contains a substantial, but undefined late Pueblo I–early Pueblo II component (Marshall et al. 1979:155; although see Schutt 1997). At the Andrews community, 11 roomblocks and two great kivas are ceramically dated between A.D. 880 and 940. These roomblocks average three to six rooms in size and appear to represent individual households dispersed across a 370-acre area (Van Dyke 1999). Andrews was extensively investigated by the junior author in the mid-1990s (Van Dyke 1997, 1999, 2000; see also Marshall et al. 1979:117–129). The community is located on colluvial slopes at the base of a sandstone escarpment rising 156 m above the Casamero Valley. Andrews includes an eleventh-century Chaco-style great house with associated great kiva and other features, but the community was founded in the late Pueblo I period with the establishment of two small (two- to four-room) pueblos on colluvial finger ridges immediately below the sandstone escarpment. During the early 900s, Andrews rapidly expanded, with the construction of two great kivas and nine habitation sites along the ridges. Elsewhere, Van Dyke (2000) has employed these and other Red Mesa Valley data to argue that the impetus to construct great houses in this region did not originate in Chaco Canyon.

Just beyond the southeastern edge of the Chaco Basin watershed and within the Rio San Jose drainage, the El Rito Community, near San Mateo and Grants, includes up to 10 Pueblo I–early Pueblo II habitations in a square kilometer (Powers et al. 1983:216, 222–225). Ceramics, however, indicate that the community was another late Pueblo

I/early Pueblo II settlement probably with little previous occupation.

Finally, in the Upper Puerco River Valley of the West, northeast of Gallup, a Chacoan community at Rams Mesa containing many habitations, a great kiva, and a great house was investigated during 1990s pipeline construction. Similar to other settlements discussed here, this community was largely settled in the late Pueblo I and Pueblo II periods, with little previous Basketmaker and Pueblo I occupation (R. B. Sullivan 1994). Tree-ring dates in the A.D. 700s and 800s were obtained from a few Pueblo I pit structures but there are few habitation sites. Numerous unexcavated sites with dominant amounts of Red Mesa–"style" Black-on-white (probably Kiatuthlanna and Red Mesa black-on-whites) and "Lino Gray" (plain gray) were considered by Marshall as early Pueblo I (R. B. Sullivan 1994:514, table 108), but as discussed above, these are early Pueblo II sites. Both room numbers and refuse deposition amounts greatly increase at around A.D. 900 (R. B. Sullivan 1994:214–215, tables 114, 118).

The Eastern Chaco Basin

Little is known of the vast area that includes much of the eastern Chaco Basin to the Continental Divide and beyond to the western slopes of the Rio Puerco Valley of the East. Very little survey has been done (unless it is buried in the gray literature) from a few miles east of Crownpoint to the drainages, slopes, and mesas that border the western region of the Rio Puerco Valley of the East, an area about 80 km (50 miles) west to east. The authors conducted a small reconnaissance survey in the broad sweeping valley to the south of Seven Lakes (east of Kim-me-ni-oli Wash) but found nary a prehistoric artifact. Surveys and excavations around the Hospah area to the east near the Continental Divide revealed very few prehistoric sites (Post 1997; Scheick 1981) and none of Pueblo I age. The region probably contains sparse ancestral Pueblo habitation because of its high elevation (high 6,000s to over 7,000 feet), limited rainfall, and shorter growing seasons, which pose significant hazards for horticulturalists, although it probably served for hunting—the area contains many herds of elk—and other seasonal activities.

Recently, another Pueblo I community with many burned structures has been located on the flanks southeast of Mount Taylor, near Cebolleta, where proposed uranium mining resulted in an archaeological survey. But ceramic identities of Red Mesa and Lino Gray prevent an accurate assessment of Pueblo I or of late Pueblo I settlement, and detailed information on the survey is not being released.

The Guadalupe Area (Middle Rio Puerco Valley of the East)

Extensive survey and testing was conducted by Eastern New Mexico University under Cynthia Irwin-Williams in the 1970s in the greater vicinity of Guadalupe Ruins and in the Middle Rio Puerco Valley (Baker and Durand 2003). This study reveals a modest but scattered Pueblo I occupation of 19 sites in the northern area, which expanded rapidly by the late Pueblo I and early Pueblo II periods, following trends in the Chaco Basin. This area may have represented an important, although poorly understood conduit between early Pueblo residents in the Chaco Basin and areas to the east.

DISCUSSION

Environmental Factors

We know that environmental concerns had much to do with the breakup of the Mesa Verde late Pueblo I villages (Schlanger and Wilshusen 1993). The influx of Chuskan materials in settlements discussed in this chapter suggest major shifts in settlement along the Chuska Range as well. There is some support for this, given the average or far less than average indices for precipitation during the period between A.D. 865 and 915 along the Chuskas, with notable unfavorable climate at about A.D. 870, 885, and 910. Wiseman (1982a) shows that there is a concordant dispersal of inhabitants along the Chuskan slope into more marginal environments during wetter times. In the Chaco region, however, there is a favorable spike in rainfall between A.D. 885 and 905 that might have provided some "pull" for inhabitants from the north and west. The new

precipitation and temperature model of climate by Van West and Grissino-Mayer (2005) provides a new look at areas inhabited to the south in the Red Rock Valley and Mount Taylor region which has implications for movements into the Chaco Basin, such as the community settlement along the Fajada Wash, South Fork Valley. To the south, dry but warm conditions dominated every year between A.D. 867 and 895, with a short, wet, but cool episode between A.D. 896 and 899, then a return to dry conditions until 916 (Van West and Grissino-Mayer 2005: table 33.1), suggesting that farming was less than ideal in the Red Mesa Valley–Mount Taylor area during this interval.

At this point, we do not know enough about paleoenvironmental conditions in and around the entire Chaco Basin peripheries to understand what thresholds were exceeded to cause migrations and significant social adjustments that resulted in the influx of peoples into the basin interior. In addition, the diverse farming strategies available to ancestral Pueblo inhabitants typically receive little research attention and are seldom systematically explored to provide viable estimates of the potential subsistence economy.

In a real sense, the Chaco Basin is ecologically harsh and unpredictable (Lekson 1984; Powers et al. 1983; Schelberg 1992), but some areas are clearly more favorable than others. These areas, attractive in the late A.D. 800s, were all drainage-associated. Given our knowledge of farming technologies of the times, we might expect that much of the attraction was caused by environmental factors that had become more favorable than in previous times (Sebastian 1992) while deteriorating in peripheral areas (Wilshusen and Wilson 1995). On the other hand, some areas along the basin periphery, such as the Chuskas, may have experienced more favorable conditions that allowed or forced competing populations to push into more marginal areas (Wiseman 1982a). That said, the environment cannot be downplayed (Varien 2002) as a critical causal factor for expansion into the Chaco Basin because the interior is too prohibitive for sustained farming except during rare periods of extended rainfall or high water tables.

Abandonment and Evidence for Regional Violence

Much of the Southwest may have experienced violent behavior during the early ancestral Pueblo occupation, which was particularly intense and widespread during the Pueblo I era (i.e., LeBlanc 1999:136–139; Rice and LeBlanc 2003). Two aspects of abandonment—burned structures and unburied (and sometimes mutilated) bodies—have been characterized as evidence for violent catastrophic abandonment of settlements. Overall, from our sample, these characteristics are rare, while direct evidence for violence in the form of warfare is lacking. Stockaded Basketmaker III and Pueblo I sites to the north and west of Chaco, however, are not unusual (Hall 1944; LeBlanc 1999:125–128; P. F. Reed, ed. 2000) and have been attributed to warfare (Wilcox and Haas 1994).

In sharp contrast to much of the contemporaneous ancestral Pueblo world, the Chaco Basin seems untouched by the fiery events that were commonplace around its peripheries. Basketmaker III and Pueblo I settlements were commonly found burned north from the Navajo Reservoir, west across the Cedar Hill, Durango, and Piedra River areas, through Mesa Verde, Dolores, and Alkali Ridge nearly to the Abajo Mountains, and on the flanks of Mount Taylor (e.g., Brew 1946; Cameron 1990a, 1990b; Chenault and Motsinger 2000; Gooding 1980; Hall 1944; Hayes 1964; Hayes and Lancaster 1975; Lancaster and Watson 1954; E. H. Morris 1939; E. A. Morris 1959; Roberts 1930; Rohn 1977; Wilshusen and Wilson 1995; Wilshusen and Ortman 1999). Unexcavated Pueblo I surface structures, in particular, are evident when burned. Roberts's (1930:21) descriptions are apt: "where the houses have been destroyed by fire the mound is usually covered with large blocks of the burned adobe." Similarly, "roomblocks . . . are easily identified since they are often characterized by substantial mounds of burned earthen construction material" (Wilshusen and Wilson 1995:58; also Smith 1987:62).

South from Ute Mountain, along the New Mexico–Arizona border and the Carrizo, Lukachukai, and Chuska mountains, widespread

destruction of early structures by fire also was common (Condon 1982; Damp 1999; Damp and Kotyk 2000; Kearns et al. 2000; McVickar and Kearns 1998; E. A Morris 1959, 1980; Reed and Hensler 2001; Reed and Wilcox 2000; P. Ruppé 2000), although it appears that Pueblo I structures were more likely to be burned than Basketmaker III ones. In the Chaco Basin, ground cover is sparse and burned settlements would be quite noticeable, but are rare. The absence of burned Pueblo I structures in the Chaco Basin may be related to the lack of jacal wall construction and the general scarcity of construction wood rather than the lack of violence, although this problem should be pursued more closely.

During the A.D. 700s and 800s, habitation sites rarely provided much archaeological surface material, exhibited minimal relief, were widely distributed, and rarely exceeded two to four families during short-lived occupations. But the late A.D. 800s in the greater San Juan Basin reflected tumultuous times. In the Mesa Verde region, for a short period of time, huge communities formed and then disbanded, depopulating entire river valleys in the highlands (e.g., Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen 1999b; Wilshusen and Ortman 1999; Wilshusen et al., Chapter 2).

Simultaneously, there was a vast movement of peoples into the lower San Juan Basin (e.g., south of the San Juan River—that is, the Chaco Basin), from all directions except the east. New communities formed, often with a large building in association. This movement is particularly evident along the Chaco River and its tributaries. There appears to be relatively little occupation in the highlands between drainages. New settlements typically formed where multiple drainages came together (e.g., Judge et al. 1981), revealing a striking reliance on the combination of floodwater and groundwater farming, the most viable horticultural strategies in the dry interior Chaco Basin.

This new settlement may come in part from the 3,000 to 7,000 people that pulled up stakes in the Mesa Verde region at about A.D. 880 (Wilshusen 1999b; Wilshusen, Sesler, and Hovezak 2000; Wilshusen et al., Chapter 2) and moved elsewhere. Compared with the previous occupations throughout the A.D. 600s, 700s, and most of the 800s, unprecedented amounts of refuse were now generated. Although this may be related to longer occupations at the sites, there also appears to be a greater intensity and diversity of activities taking place that contributes to the refuse accumulations.

Our understanding of Pueblo I social and political complexity in the interior San Juan Basin is improved when we consider it along with the breakup of the late Pueblo I villages north of the San Juan River. Wilshusen and Wilson (1995), Wilshusen and Van Dyke (2006), and Windes (2006, 2007) link the dissolution of northern settlement systems in the San Juan region to the beginnings of the Early Bonito phase. We can expect that the breakup of large villages to the north would have had social consequences reflected in the readaptation to the landscape and settlement in the drier, treeless south. Strong ties with former homelands would be logical extensions of cultural continuity, however, resulting in artifactual, architectural, and landscape connections to both areas (e.g., Wilshusen, Sesler, and Hovezak 2000).

Although problems outside the Chaco Basin must have contributed to the initial movement into the basin (e.g., Wilshusen 1999b; Wilshusen and Ortman 1999; Wilshusen et al., Chapter 2), there also must have been some attraction that drew people into the basin. Given the relatively low population within the basin at this time, the possibility of escaping strife caused by deteriorating conditions and the increasing populations outside the Chaco Basin must have been enticing (see a similar situation during the A.D. 1200s in the northern San Juan region; e.g., Kohler et al. 2010). In addition, the high incidence of burned dwellings as a possible indication of warfare or witchcraft (e.g., LeBlanc 1999; Turner and Turner 1999; W. H. Walker 1998), common outside the basin during the Pueblo I period, is practically nonexistent for surface remains and excavated Pueblo I sites within the interior in the A.D. 800s and 900s, particularly within the interior Chaco Basin.

The importance of the Chaco River communities and their links to the east and west are made tangible by the Great West Road that connects Chaco Canyon at Peñasco Blanco and the Chuska Valley at Skunk Springs. This road passes all the major community centers located along the east–west part of the Chaco River. These communities peaked in importance as regional centers in the A.D. 800s and 900s but were superseded by events in Chaco Canyon in the A.D. 1000s. Many of the Chaco Basin great houses appear to either predate or are coeval with the appearance of the early great houses in the late Pueblo I period in Chaco Canyon.

Visibility and Sacred Geography

Many people attach significance to points of dramatic landscape change, prominent topographic features, and places that afford panoramic vistas (Eliade 1964; Ortiz 1969; Ouzman 1998; Paper 1990; Snead 2008; Taçon 1999:37–38). The horizontal topography of the Colorado Plateau, punctuated by volcanic plugs, mountain ranges, and mesas, extends the visible world across hundreds of kilometers. Landforms such as Sleeping Ute Mountain and the La Plata Mountains can be seen over vast distances. The 2,188-m high Shiprock spire provides a visual connection both north and south of the San Juan River. Distinctive landforms such as Shiprock, Sleeping Ute, Hosta Butte, Fajada Butte, Bennett Peak, Huerfano Mountain, and Mount Taylor seem to have been important to late Pueblo I basin inhabitants.

Often late Pueblo I community buildings were positioned in high places, with lines of sight to one or more prominent, distinctively shaped basin landforms (Van Dyke 2004, 2007, 2011). At Willow Canyon, the mesa tops provide vistas up the valley toward the north/northwest. The viewer's gaze is directed through a gap between nearby mesas and spires to focus directly on three dramatic landforms in the distance—Bennett Peak, Ford Butte, and Shiprock. As noted above, the builders of the early great house at Skunk Springs positioned their settlement within sight of the landmarks of Shiprock and Sleeping Ute Mountain. From Skunk Springs, a viewer could also see many other prominent high places in the basin, including Bennett Peak and Hosta Butte. Hosta Butte, the distinctive, flat-topped mesa that rises above the Dutton Plateau to the south, looms on the horizon from the vantage points of many early great houses and great kivas. For example, the early great house at Kin Bineola is sited to neatly frame a view of Hosta Butte looking south down the Kim-mi-ne-oli Valley. In the Puerco of the East River Valley, Guadalupe is sited on a small butte in the shadow of Cabezon Peak; the latter, with old shrines on top, is visible from Fajada Butte. Down Fajada Wash south of Chaco Canyon, Windes (2006) documented line-of-sight connections between the sites in the South Fork and the Kin Klizhin Wash communities to Fajada Butte and Huerfano Mesa. Farther to the south, Mount Taylor and Hosta Butte hover on the horizon for Pueblo I settlements in the Red Mesa Valley.

This concern with visibility presages more formal expression during the Chaco era. Robinson et al. (2007) conducted a systematic viewshed analysis in ArcGIS, demonstrating that late eleventh-/early twelfth-century Chacoans positioned shrines in high places to facilitate line-of-sight connections among outlier great houses across the San Juan Basin. This work built on Hayes and Windes' (1974) argument that shrines facilitated intervisibility among great houses in Chaco Canyon and beyond. Although we have yet to complete a systematic study of intervisibility among Pueblo I period sites and landforms, intervisible connections, such as those described above, do not appear to be mere accidents related to northern New Mexico's open horizons. Settlers founded communities along drainages and confluences, with access to water and to good farmland. But within these ecological parameters, people had choices as to where to locate specific buildings. Landforms may have figured as the locations of special events in myths and oral traditions, or perhaps they were held to possess particular qualities or powers. If migrants did move into the Chaco Basin from north of the San Juan River, they may have remained in some sense connected to their northern homelands by the intervisibility of distinctive peaks and other topographic features.

Community Settlement: A Regional Comparison

The Pueblo I occupation of the Chaco Basin primarily comprised scattered, short-lived hamlets of a few families located along drainages. There are rare large roomblocks similar in size to those in the Mesa Verde region, however, that held multiple families, but the majority of these are located along the peripheries, such as along the Chuska Slope. The latter often are near or under the earliest great houses and herald a massive infusion of peoples into the Chaco Basin and the surrounding San Juan Basin, particularly from the west and north, by about A.D. 875. There is little Pueblo I occupation of Chaco Canyon until the A.D. 875 period, although there is a large clustered community of small hamlets with a community structure just outside the park to the south, which appears unique for Chaco. The Chaco Core has been characterized as the center of Chaco power and ritual, but there is little to suggest that the core was dominant before the resurgence in great house construction at about A.D. 1050. Early great houses are widespread not only in the canyon area, but also in the greater San Juan Basin, and they begin in the critical Pueblo I period, mostly outside Chaco Canyon (Windes 2007).

Van Dyke's (2007:78–91; also Windes 2007) systematic examination of early 900s "proto–great houses" and other settlements in the San Juan Basin suggests that there may have been two kinds of late Pueblo I/early Pueblo II (or Early Bonito phase) community organization (see Wilshusen and Wilson 1995:76–80). Great kivas and early or "proto–great houses" tend not to co-occur outside of Chaco Canyon. Out of a total of 31 Early Bonito phase communities, 22 contained some type of early great house, and 18 contained some kind of large, circular community structure, but only nine contained both (Van Dyke 2007: table 4.2, fig. 4.10). Furthermore, many of the communities that only contain great kivas are located in the Red Mesa Valley and the southern part of the San Juan Basin, while communities with early great houses that lack great kivas are concentrated in the Chaco Basin. In the absence of excavation data from most of these sites, it is difficult to gauge the strength of this pattern, but it is certainly provocative. These patterns suggest that perhaps two models of community organization were in operation during the founding of late Pueblo I/early Pueblo II period settlements in the San Juan Basin. One, centered around early great houses, may have taken hold in and around Chaco Canyon.

Great houses, as Wilshusen and Ortman (1999: 391), Windes (2006), and Windes and Ford (1992) have suggested, may have ancestral connections with McPhee Pueblo and other aggregated sites in the Dolores River Valley. A second model, centered around great kivas, may have been present in the Red Mesa Valley and some areas of the southern Chaco Basin (cf. Vivian 1990). A strong southern pattern of great kiva-centered communities persisted into the eleventh and twelfth centuries at sites on the southern margins of the Chaco world (Herr 2001). One of the challenges faced by eleventh-century Chacoan leaders may have been how to bring these great kiva-centric communities into the Chacoan fold (see Van Dyke 2007:89–91 for a more detailed discussion).

NOTE

1. Wilshusen and Blinman (1992:257–258) propose a correlation between roomblock length and the number of households, but their sample is biased by the inclusion of mostly large roomblocks, which are common to the Mesa Verde region. Employing the formula to the small sample of excavated or surface-delineated Pueblo I roomblocks in the Chaco area produces inflated household numbers by approximately one-third. To adjust for the very small Pueblo I roomblock sizes common to the 29Mc184 community, the total community roomblock-wall length was used in the formula instead of individual roomblock lengths. This adjustment produced an estimated 43 households in the 29Mc184 community, while the non-modified method produced 79 households (see R. R. Lightfoot 1994 for an alternate definition of households).

CHAPTER 6

Alternative Trajectories during the Early Pueblo Period in the Little Colorado Drainage and Beyond

GREGSON SCHACHNER, DENNIS GILPIN, AND MATTHEW A. PEEPLES

OUR TASK FOR THIS CHAPTER IS TO SUMMARIZE the early Pueblo period (A.D. 600–925) archaeology of the Little Colorado region, a vast, roughly 50,000 km^2 portion of the Colorado Plateau (Figure 6.1). This area, which conforms (with a few modifications) to the Little Colorado region originally defined by Kidder (1924), encompasses nearly the entirety of the Little Colorado River drainage basin (minus the Sinagua region surrounding Flagstaff), as well as the Chinle Wash drainage to the north and the Cebolleta Mesa/Acoma area to the east. When we first assumed this task, the three of us were struck by the great scale of the undertaking and by the fact that the Little Colorado region is roughly equal in size to that covered in the prior four chapters of this volume. On the other hand, we came to the conclusion that this geographic division made sense for a number of reasons, including (1) the culture history, subsistence and settlement strategies, and material culture of the early Pueblo period in different parts of the Little Colorado region are broadly similar and contrast well with patterns seen in other regions; (2) an understanding of the importance of cultural diversity and migration, one of the major goals of this volume, requires us to look across more narrowly defined regional boundaries; and (3) the major heartland of early Pueblo settlement in the Little Colorado region is located along the Rio Puerco of the West, which often receives either overlapping or insufficient treatment in many syntheses of Southwest archaeology due to its location along an analytical boundary between more commonly used regional schema (e.g., Cibola vs. Tusayan, upper vs. middle Little Colorado, etc.). In this chapter, we provide an overview of the early Pueblo period culture history of four subregions (Figure 6.1), highlight some of the major differences between the Little Colorado region and those to the north discussed elsewhere in the volume, and offer a few topics that deserve further investigation.

The Little Colorado region was the scene of seminal research aimed at defining the early Pueblo period during the first few decades of professional archaeology in the Southwest (Table 6.1). As is often the case, these early projects remain important for understanding material culture and chronology, but are difficult to incorporate into modern studies focused on settlement patterns, social and economic networks, and demography. Subsequent to these initial investigations, contract archaeology projects have produced a tremendous amount of data enabling a refinement of earlier insights and new examinations of cultural processes. In total, however, the current collective body of early Pueblo

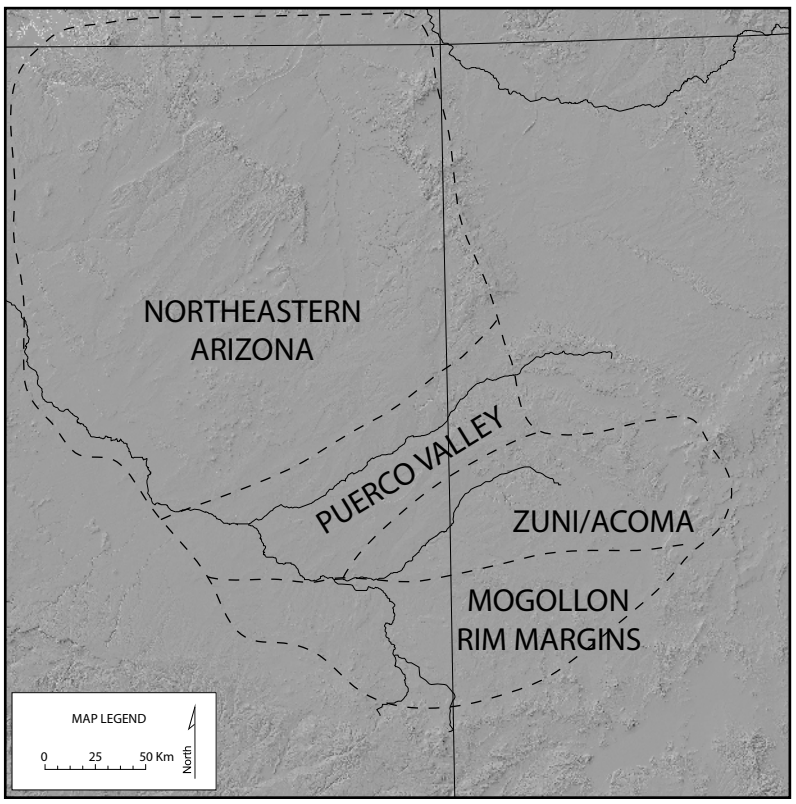


Figure 6.1. The Little Colorado region and subregions.

period studies in the Little Colorado region can be frustratingly difficult to synthesize, given the variety of methodologies used, circumstances of project initiation and fieldwork, and variable completion of and access to publications. At this time, we lack an overarching, massive, data-rich project equivalent to the Dolores Archaeological Project, Animas–La Plata Project, or the Chaco Project, one that provides an opportunity to reevaluate received knowledge of the early Pueblo period and sets the agenda for subsequent research. We think that a synthesis of previously generated data, especially one derived from the numerous contract projects in the Puerco Valley of eastern Arizona, could play a similar agenda-setting role for the Little Colorado region, and we hope that this chapter moves us toward that goal.

The bulk of our chapter describes key shifts in material culture and settlement patterns in each of our subregions. Major themes include the frequent movement of people over a range of distances throughout the Little Colorado region and the importance of large, but poorly understood sites that exhibit long-term persistence on the landscape, often culminating in the construction of the earliest Chaco-style great houses in the area. Due to the limitations of current data, we provide only a broad-brush overview of demographic change, but this effort does highlight common patterns in population change across the Little Colorado region and should also serve as a baseline for future demographic reconstructions. A section considering evidence for cooperation and conflict in the area as a whole follows. We conclude with a consideration of cultural diversity and migration. As we demonstrate in the subregional summaries, intrasite and intersite variability in architecture and material culture was common and has long been a key subject of investigations in the area. We argue that this variability was in part a product of (1) varying dates for individual features (which we often cannot date with sufficient precision) within sites indicating multiple occupations; (2) a complex subsistence strategy and settlement pattern with

Table 6.1. Major early Pueblo period projects in the Little Colorado area

Project	Location	Reference
Puerco Valley		
Whitewater Village	Whitewater Arroyo	Roberts 1939, 1940
White Mound Village	Puerco Valley	Gladwin 1945
Twin Buttes	Petrified Forest	Wendorf 1953
I-40 Highway Salvage	Puerco Valley	Ferg 1978; Gumerman and Olson 1968; Sciscenti 1962; Wasley 1960
Coronado Project	Puerco Valley/Hardscrabble Wash	Bradford 1980; Marek et al. 1993; Stebbins et al. 1986
Chambers-Sanders Trust Lands	Puerco Valley/Hardscrabble Wash	Hays-Gilpin and van Hartesveldt 1998
Zuni/Acoma		
Kiatuthlanna	Hardscrabble Wash	Roberts 1931
Cebolleta Mesa	Cebolleta Mesa	Dittert 1959; R. J. Ruppé 1990
Reconnaissance Survey north of St. Johns	Hardscrabble Wash, lower Zuni drainage	Beeson 1966
Z4 Project	Zuni River	Gratz 1977
Northeastern Arizona		
Archaeological Explorations in Northeastern Arizona	Chinle drainage	Kidder and Guernsey 1919; Guernsey 1931
Juniper Cove	Chinle drainage	Cummings 1953; Gilpin and Benallie 2000
Rainbow Bridge-Monument Valley	Chinle drainage	Beals et al. 1945
Awatovi Project - Jeddito 264	Black Mesa	Daifuku 1961
Rabbit Hill Village	Middle Little Colorado	Rippey 1969
Archaeology of Arizona Public Service Company 345 KV Line	Defiance Plateau	Olson 1971
Ganado Reservoir	Defiance Plateau	Fuller and Chang 1978
Pinon Road Projects	Black Mesa	Linford 1982
Black Mesa Archaeological Project	Black Mesa	Powell and Smiley 2002
Black Mesa Coal Haul Railroad	Chinle drainage, Black Mesa	Swarthout et al. 1986
Lukachukai	Chinle drainage	Altschul et al. 2000
Transwestern Pipeline	Defiance Plateau	Eck 1994
Navajo Route 27	Chinle drainage	Gilpin et al. 2007
Mogollon Rim Margins		
Upper Gila Expedition	Mariana Mesa	Bullard 1962; Danson 1957
Field Museum	Arizona Mogollon Rim	Martin and Rinaldo 1960
Fence Lake Project	Carrizo Wash	Gilpin et al. 2004

multiple site types; (3) colonization and depopulation of marginal environments perhaps by multiple groups (e.g., the northern Black Mesa colonization of the A.D. 800s); (4) the shifting locations of a number of population centers; and (5) the cultural frontier or hinterland status of much of our study area during the early Pueblo period. These factors and their variation would be masked when considering the early Pueblo period archaeology of each of the subregions within the Little Colorado region individually. The cultural processes driving this variability deserve greater attention, especially as these factors may be important for understanding the contrasting patterns of the early Pueblo period across the Colorado Plateau as a whole.

A Sober Assessment of Early Pueblo Period Little Colorado Archaeology

Before moving to the regional summaries, it is important to mention a few of the limitations of studying the Little Colorado early Pueblo period. These include the sparse geographic coverage of survey in the region, problems of data comparability

and the interpretation of older projects, limited development of chronological frameworks compared with other time periods and regions, and problems inherent to the archaeological record of the Little Colorado area itself. We outline these problems to illustrate how the Little Colorado early Pueblo record differs from that of other areas, as well as to highlight a few key domains where targeted research can greatly improve current knowledge.

Although the Little Colorado drainage is blessed with a number of large, full-coverage block survey areas, these areas tend to be located in districts that lack significant early Pueblo period occupation (i.e., the upper Zuni district, upper Puerco Valley, the Quemado area, mountainous, forested areas of the Navajo Nation). Thus, although we are confident in at least some of our assessments of where early Pueblo period populations were absent or small, we are less sanguine about our ability to judge early Pueblo period demography in a few crucial areas, such as the lower Puerco Valley west of the Arizona–New Mexico border, Hardscrabble Wash, and the Defiance Plateau, that reconnaissance surveys (Beeson 1966; Lee 1966; Reagan 1928) and other evidence have indicated may be early population centers in the region. More survey in these areas is imperative for improving our understanding of early Pueblo period demography, settlement patterns, and community organization.

Data comparability and interpretation are also major issues in the Little Colorado region. Roberts' (1931) excavations at Kiatuthlanna provide a useful illustration of some of the problems faced when working with older, albeit still foundational data (Figure 6.2). What are we to make of Kiatuthlanna in terms of its contribution to regional demography or as a settlement type? Given the excavation methods of the era and the low visibility of early Pueblo period Little Colorado sites, what proportion of the total number of structures is represented by those excavated, which are strewn across an area over 2 ha in size? Roberts (1931:15) noted many other sites "in the vicinity," and Beeson (1966:87–88) located an enormous early Pueblo period artifact scatter (AZ Q:3:73 [ASM]) just to the southwest of Roberts's excavations which he estimated contained 100–120 pit structures (Table 6.2). These observations suggest the presence of a potentially massive area of early Pueblo occupation extending over a square mile or more. The contribution of Kiatuthlanna to regional demography remains unclear, however. How do we estimate the total number of pit structures present? Or population? Do we interpret Kiatuthlanna as series of small-scale settlements occupied over centuries, similar to the large complex at nearby Cottonwood Seep (AZ K:14:32 [ASM]) (Marek et al. 1993; Stebbins et al. 1986)? Or as a large, permanent village similar to those in the Mesa Verde region discussed in previous chapters? The more substantial construction of Kiatuthlanna pit structures suggests that site function contrasts with the former, but our poor knowledge of site structure precludes confident comparison to the latter. How do we judge potential contemporaneity of structures given the lack of absolute dates and potential biases in pottery collection? Is the small number of surface structures compared to pit structures at Kiatuthlanna a real pattern, a product of Roberts' excavation methods, or a result of site formation processes? In presenting our summary, we note that in most cases—as exemplified by Kiatuthlanna—early Pueblo archaeology in the Little Colorado region remains open to widely varied interpretations.

An additional limiting factor is that the early Pueblo period chronology for the Little Colorado region is not as accurate as that of other areas discussed in this volume (van Hartesveldt and Hays-Gilpin 1998:193). Despite having an excellent ceramic-based chronology for later time periods (Mills 2007; Hays-Gilpin and van Hartesveldt 1998), the chronology of earlier periods in the Little Colorado region is hampered by a paucity of tree-ring-dated reference collections. In addition, improving the early Pueblo period chronology for the area will be challenging due to inherent clinal variation in technological traits and design styles among types in early Cibola and Tusayan White Wares (White Mound/Kiatuthlanna/Red Mesa, Lino/Kana-a/Black Mesa [see Hays-Gilpin and van Hartesveldt 1998; Jernigan 1982; Mills 2007;

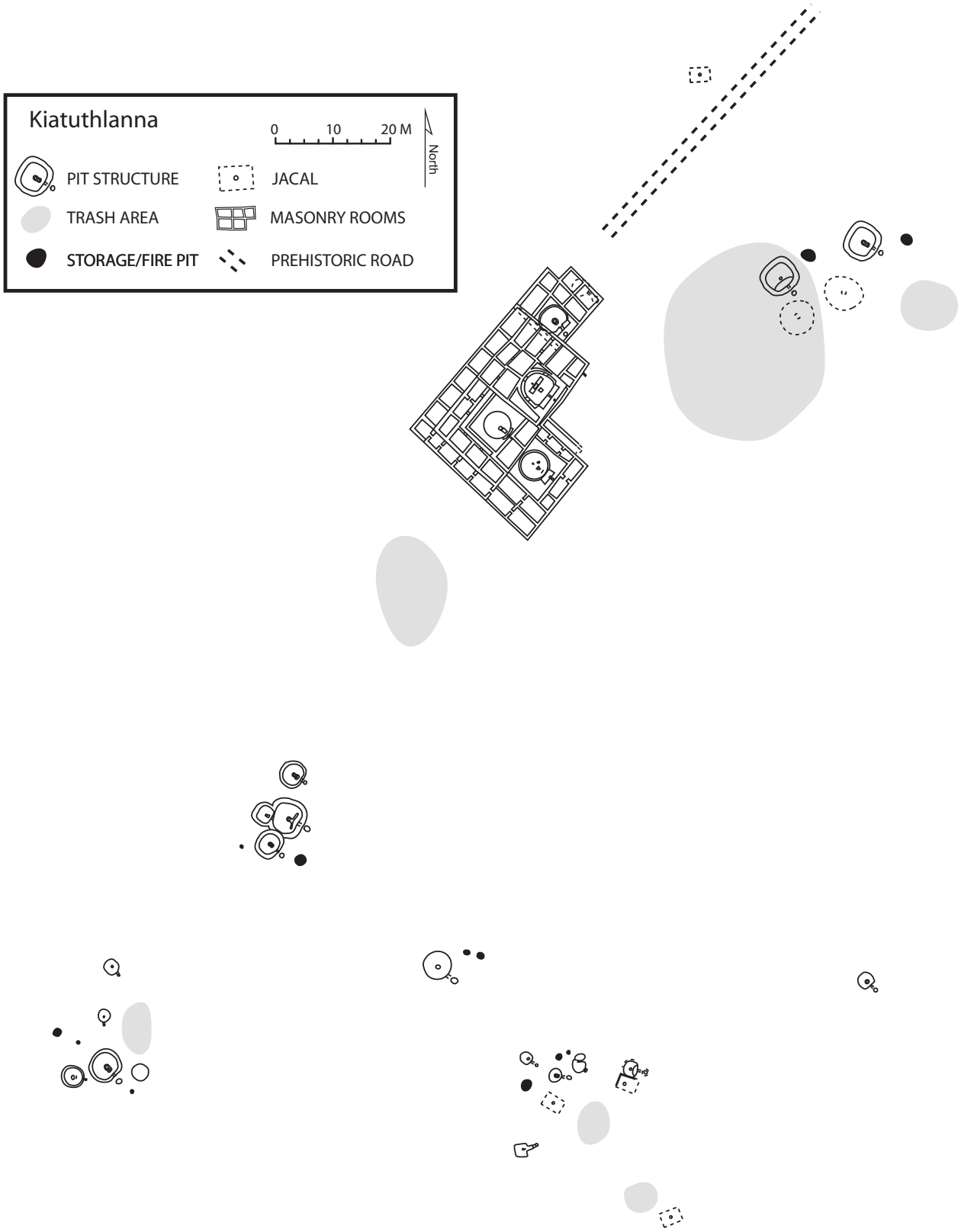


Figure 6.2. Kiatuthlanna. Map reconstructed from Roberts' (1931) descriptions of locations of excavated areas and aerial photo of site. Locations should be considered approximate.

Table 6.2. Large early Pueblo sites with greater than ten structures in the Little Colorado area

Name	Number	Dates	Estimated Structures	Domestic Architecture	Public Architecture	Reference
Puerco Valley						
Roadkill	AZ-P-60-30/31 (NN)	565–671 (C-14)	10s	Pit structures	None	Latady 1991
Cottonwood Seep & South	AZ K:14:32&33 (ASM)	485–900 (C-14), 600–800 (P)	100s	Pit structures, one-room jacals	None	Marek et al. 1993; Stebbins et al. 1986
Twin Butte	NA5,065	700–800 (P)	10s	Pit structures, roomblocks	None	Wendorf 1953
White Mound Village	AZ K:12:1 (ASM)	786–802 (TR)	10s	Pit structures, roomblocks	None	Gladwin 1945
Whitewater Village	NA4,119?	814–886 (TR)	10s	Pit structures, roomblocks	Unroofed great kiva	Roberts 1939, 1940
Woodruff Butte	AZ P:4:1 (ASM)	500–550 (P)	10s	Pit structures	None	Gilpin et al. 2000
Zuni/Acoma						
Kiatuthlanna	AZ Q:3:1 (ASM)	600–850 (P)	10s	Pit structures, one-room jacals	None	Roberts 1931
AZ Q:3:73	AZ Q:3:73 (ASM)	600–900+ (P)	100s	Pit structures	None	Beeson 1966
LZ1090 Group	LZ1090, 1066, 1059 (OBAP)	850–950 (P)	100s	Pit structures	2 great kivas	OBAP notes
LZ5 cluster	LZ5 (OBAP)	850–100 (P)	10s	Pit structures, roomblocks	None	OBAP notes
NM:12:J3:313 & 314	NM:12:J3:313 & 314 (ZAP)	825–925 (P)	10s	Pit structures, roomblocks	Early great house	Fowler 1980
NM:12:J3:333, 334, & 335	NM:12:J3:333, 334, & 335 (ZAP)	825–925 (P)	10s	Pit structures	Great kiva	Fowler 1980
Northeastern Arizona						
AZ E:12:5	AZ E:12:5 (ASM)	600–750 (TR, P)	10s	Pit structures	Great kiva	Altschul et al. 2000
Bad Dog Ridge	None	500–700 (P)	10s	Pit structures	2 great kivas	Gilpin and Benallie 2000
Cow Springs	None	500–700 (P)	100s	Pit structures	None	Nichols 2002
Elephant Feet	None	500–700 (P)	100s	Pit structures	None	D. Breternitz, personal communication
Ganado	AZ-P-20-96 (NN)	500–850 (P)	100s	Pit structures, roomblocks	5 great kivas	Gilpin and Benallie 2000
Juniper Cove	NA3,570, NA7,623	666–678 (TR)	10s	Pit structures	Great kiva	Gilpin and Benallie 2000
Lukachukai	None	760–900 (P)	10s	Pit structures, roomblocks	None	Gilpin field notes
NA11,057	NA11,057	600–800 (P)	10s	Pit structures, roomblocks	None	Swarthout et al. 1986
Three Mile Draw	NA8,300	730–860 (TR)	10s	Pit structures, roomblocks	None	Gorman 1973
Pinon Site	None	500–700 (P)	10s	Pit structures	None	Nichols 2002
Rabbit Hill Village	NA9,577	700–800 (P)	10s	Pit structures	None	Rippey 1969
Reagan 277	None	700–900 (P)	10s	Pit structures, roomblocks	Great kiva	Reagan 1928
Rock Bench	None	700–900 (P)	10s	Pit structures, roomblocks	None	Kidder and Guernsey 1919
Salina Springs	AZ-I-64-13 (NN)	600–700 (P)	10s	Pit structures, roomblocks	None	Gilpin 1989
San'ovi	NA28,332	700–900 (P)	10s	Pit structures, roomblocks	Rectangular dance plaza	Bernardini, personal communication 2009
Turtleback Adobe	AZ-I-61-27 (NN), NA9,436	750–850 (P)	10s	Pit structures, roomblocks	None	Gilpin et al. 2007
Mogollon Rim Margins						
AZ P:12:404	AZ P:12:404 (ASM), AZ P:12:104 (ASU)	750–900 (P)	100s	Pit structures	Great kiva	Lightfoot 1984

Table 6.2. (*cont.*)

Name	Number	Dates	Estimated Structures	Domestic Architecture	Public Architecture	Reference
AZ Q:11:50	AZ Q:11:50 (ASM)	600–850 (P)	10s	Pit structures	None	Beeson 1966
AZ Q:8:47	AZ Q:8:47 (ASM)	700–850 (TR, C-14, P)	10s	Pit structures, one-room jacals	None	Gilpin et al. 2004
LA4032	LA 4032	700–900 (P)	100s	Pit structures, jacals?	None	J. P. Wilson 1972
Cerro Colorado	LA 25894	600–700 (TR)	10s	Pit structures, roomblocks	None	Bullard 1962
Garcia Ranch Bench	AZ Q:8:1 (ASM)	850–950 (P)	10s	Pit structures, roomblocks	Great kiva	Beeson 1966
SACA 335	LA 48032	600–900 (P)	10s	Pit structures, roomblocks	None	Camilli et al. 1988

Note: Maps for many of these villages have been previously published. Interested readers should refer to the original publications for maps. (P) = pottery, (TR) = tree-ring, (C-14) = radiocarbon

Toll and McKenna 1997]) and the often unsystematic recording of chronologically sensitive surface treatments and vessel shapes of gray ware. Gray ware attributes have proven important for developing early Pueblo period chronologies in other areas (Toll and McKenna 1997; Wilshusen and Blinman 1992) and deserve greater attention in Little Colorado region archaeology. Chronological limitations are probably the easiest of current problems to overcome and could be improved greatly though synthetic reanalysis and dating of existing collections.

Perhaps the most pernicious factor limiting our understanding of the early Pueblo period is the nature of the archaeological record itself, especially when we have to rely so heavily on surface survey for understanding regional demographic patterns and settlement organization. On the surface, most early Pueblo period archaeological sites in the Little Colorado region are artifact scatters with very few indications of structural features that would enable estimating the numbers and/or sizes of rooms or pit structures in order to assess population levels or define site layouts. The lack of structural visibility derives from three factors related to regional construction methods, site formation processes, and geomorphology. First, aboveground architecture was only a minor component of settlements in the region prior to the Pueblo II period, particularly in the Zuni/Acoma and Mogollon Rim margins districts. Before the late A.D. 800s, or more likely early A.D. 900s, two types of surface architecture were constructed: single, short rows of jacal and masonry storage structures, often with bathtub-shaped storage cists encompassing most of the floor area (Bullard 1962; Ferg 1978; Gladwin 1945; Roberts 1939, 1940), and thin-walled jacal and adobe structures ranging from round to oval to rectangular that served as loci for domestic activities, including food preparation and craft production (Deats 2004:363–370; Greenwald et al. 1993:6–11; Roberts 1931:86–90). Only the former are regularly visible on the surface, but even then it is not clear if these structures are consistently identified during survey or are useful indicators of population. Second, Little Colorado early Pueblo period pit structures often lack the depth of contemporary structures located in northern areas, and as a result, rarely produce clearly indicative surface depressions once they become part of the archaeological record. Finally, much of the Little Colorado region, especially the Puerco Valley and lower Zuni River drainage where early Pueblo period settlements were concentrated, is characterized by significant aeolian deposition of sand, resulting in the frequent burial of archaeological sites and obscuring of surface traces (Gilpin and O'Hara 2004:45; Howell 2000:6). For example, at Cottonwood Seep, one of

the largest early Pueblo period sites in the Little Colorado drainage and located in a particularly windy portion of eastern Arizona, some excavated structures were buried by as much as 4 m of cultural and natural deposits (Greenwald 1993:72). Coupled with the ephemeral nature of early Pueblo architecture, the active surface geology of portions of the region complicates the task of inferring site structure and demographic variables from surface remains alone.

Given all of these problems, we consider our assessments of changes in regional demography, site structure, and social developments for the Little Colorado region during the early Pueblo period tentative and likely to shift with subsequent research. By noting some of the problems we currently face, we hope that this chapter will encourage archaeologists working in the Little Colorado region to reexamine the basic chronological framework of the early Pueblo period, to pay greater attention to the effects of site formation processes and surface geology when working with survey data, and to consider the employment of new methods, such as geophysical techniques, for investigating large sites where surface remains are not reliable indicators of site structure or population. Targeted investigations of these problems have potentially significant payoffs.

Subregional Summaries

We have divided the Little Colorado region into four large subregions: the Puerco Valley, Zuni/Acoma, Northeastern Arizona, and the Mogollon Rim Margins, for ease of discussion and because these areas exhibit somewhat different culture histories during the period of interest, which we define as roughly A.D. 600–925 (Figure 6.1). Although the Pueblo I period of the Pecos Classification is commonly dated from A.D. 700 to 900, we have chosen to examine a slightly longer period to track the cultural changes in the Little Colorado region that gradually led to the characteristics of the Pueblo I period as traditionally defined. Unlike areas discussed in previous chapters, the trajectory of change across the early Pueblo period in the Little Colorado region was gradual and evolutionary, not revolutionary. Present data suggest a lack of significant demographic shifts or rapid changes in settlement organization, and our depiction of the period is more similar to many of the gradualist overviews of the period by our predecessors than those presented in other chapters in this volume (see Schachner et al., Chapter 1).

The picture of gradual change in settlement organization and sedentism across the Little Colorado region is particularly interesting in terms of recent discoveries regarding the early arrival of maize agriculture and irrigation along the southern edge of the Colorado Plateau. Excavations at the Old Corn site (LA 137258) near Quemado, New Mexico, have revealed that corn was present in the Little Colorado region by 2000 B.C. (Huber 2005). Excavations near Zuni Pueblo have documented the more or less continuous construction of a number of small-scale irrigation canals along the Zuni River and its minor tributaries between about 1000 B.C. and A.D. 1000 (Damp et al. 2001; Damp et al. 2002). Beyond this, skeletal isotopic studies focused on identifying the contribution of maize to the diet of Basketmaker populations in northeastern Arizona suggest that by about 400 B.C., people were likely consuming maize at similar levels to Pueblo II and Pueblo III period farmers in the Four Corners (Coltrain et al. 2007). In light of this information, in the following subregional summaries we argue that it was the comparatively high degree of both seasonal and residential mobility in our study region, rather than a lack of commitment to agriculture, that led to the differences between the early Pueblo record in the Little Colorado and areas to the north.

Puerco Valley

Our Puerco Valley subregion is defined by the Puerco of the West and its tributaries from roughly Fort Wingate, New Mexico, to the junction of the Rio Puerco and Little Colorado near Holbrook, Arizona. This area was the subject of some of the first intensive investigations of early Pueblo period archaeology in the Little Colorado region (Gladwin 1945; Roberts 1939, 1940). The regional context of these projects is still not well understood, however,

as most of the survey areas in the valley are located well east of excavated sites or are unpublished and can only be summarized from secondhand publications. As a result, it is difficult to determine how excavated materials fit into regional settlement patterns. Given the apparent importance of the Rio Puerco during the early Pueblo period, the analysis of settlement patterns in the area is another topic that should be targeted for improvement by future researchers.

Early Pueblo period archaeological sites are rare in the eastern reaches of the river valley. No Basketmaker III (A.D. 500–750) sites and only one clearly Pueblo I period (A.D. 750–925) component were identified during the survey of the Fort Wingate Depot, despite the presence of substantial Pueblo II and III populations (Schutt 1997:162). In contrast, the western portions of the valley, from roughly Manuelito Canyon to the Petrified Forest, contain numerous early Pueblo sites (Ahlstrom 1993; Gilpin and O'Hara 2004: van Hartesveldt et al. 1998; Weaver 1978; Wells 1994). Prior to A.D. 600, settlement was concentrated in the far western portion of this district, with large late Basketmaker II (A.D. 1–500) and early Basketmaker III aggregates present in the Petrified Forest (Burton 1991; Hough 1903; Wendorf 1953) and at Woodruff Butte (Gilpin et al. 2000; Hough 1903). Burton (1991:107–108) dates both Flattops (Wendorf 1953), with an estimated 25 slab-lined pit structures, and Sivu'ovi (Burton 1991), with a minimum of 47 pit structures and likely many more, between A.D. 200 and 400 and considers them to represent recurrent seasonal use based on the small size of the pit structures, which often lacked internal features, including hearths. Milky Hollow (Hough 1903), with an estimated 70 structures, appears to be a similar site located east of Petrified Forest National Park. Woodruff Butte (Gilpin et al. 2000; Hough 1903), with more than 40 dwellings as well as cut-and-fill basins, terraces, rock alignments, and check dams, is a more substantial site dating to roughly A.D. 500 to 550 and may represent a sedentary village. These sites represent the first large aggregates of pit structures in the Puerco Valley, and their continued study will aid our understanding of subsequent developments in the region.

Early Pueblo period population increased dramatically in the western part of the valley during the early Pueblo I period (White Mound phase, roughly A.D. 700–850), followed by gradual population growth through the Pueblo II period (Ahlstrom 1993; van Hartesveldt et al. 1998; Weaver 1978; Wells 1994). Most sites of this era were occupied by either single households or small groups of households. These small settlements are perhaps best exemplified by AZ K:12:8 (ASM) (Ahlstrom 1985; Ferg 1978; Wasley 1960) and AZ K:12:3 (ASM) (Ferg 1978), which are located on terraces above the Rio Puerco just west of the Arizona–New Mexico state line. AZ K:12:8 contains six round and subrectangular, four-post-pattern pit structures and other features, while the early Pueblo component of AZ K:12:3 includes a single row of surface storage rooms and one subrectangular, four-post-pattern pit structure. Tree-ring dates indicate two pit structures at AZ K:12:8 were constructed roughly 30 years apart in the middle to late A.D. 700s (Ahlstrom 1985:209), while AZ K:12:3 is estimated to date 30 to 50 years later based on ceramics and architecture (Ferg 1978:136). The gap in pit structure construction, superimposed features, and use of both shallow and deep pit structures at AZ K:12:8 suggest it was occupied repeatedly, and at times seasonally, while AZ K:12:3 was occupied year-round for a generation or so (Ferg 1978). Potential contrasting usages of shallow (growing season) and deep (winter or year-round) pit structures in the Puerco Valley have been noted by a number of researchers (Ahlstrom 1993; Ferg 1978; Gilpin and Benallie 2000; Greenwald et al. 1993).

Frequent household mobility was likely pervasive in the area, resulting in an archaeological record comprised of variable structural forms and including both single- and multiple-component sites (Ahlstrom 1993). The wide range in variability in site size, occupation spans, and structure types suggests that mobility practices in the region were probably complex and spatially variable and may have included seasonal aggregations at large settlements, seasonal dispersals to smaller sites,

longer-term residential mobility among year-round settlements, and long-distance population movements. Potential indicators of all of these types of mobility are apparent in current data, but more detailed studies of the movements of objects and people are required to more clearly delineate this system.

A number of larger settlements have been recorded in the western Puerco Valley as well, and these also appear to be characterized by a wide range of variability in terms of seasonal versus year-round habitation and single versus multiple occupations. Some appear to be large, permanently occupied Pueblo I period villages similar to some of the smaller villages in the Mesa Verde region. These villages consist of one or more single-row surface roomblocks that were primarily used for storage, fronted by a series of deep, four-post-pattern round or subrectangular pit structures with ventilators. Unlike in the Mesa Verde area, however, surface roomblocks were not commonly used for habitation until after the Pueblo I period. Tree-ring dates from White Mound Village (Gladwin 1945), one of the best-dated early Pueblo period sites with surface architecture, suggest primary occupation in the late A.D. 700s extending into the first decade of the A.D. 800s. (Despite its name, White Mound Village was a large farmstead or hamlet housing a few families, not a village.) Roberts (1939, 1940) excavated 18 pit structures, at least eight separate surface structures, some with multiple rooms, and a dance court/unroofed great kiva in two areas separated by roughly 100 m at Whitewater Village a few miles south of the Puerco. Unlike early Pueblo villages in the Mesa Verde region, however, tree-ring dates from Whitewater span the early 800s into early 900s, suggesting continuity in occupation across the traditional Pueblo I–Pueblo II divide. A final example of a potential large village is Twin Butte in Petrified Forest National Park, where Wendorf (1953) excavated a pit structure and a number of surface and subterranean storage features. He mapped 15 distinct arcs of surface structures, which, if all or most were contemporary, would suggest the presence of at least one large, permanent village in the Petrified Forest by the A.D. 700s. Given the lack of systematic survey in much of the Puerco Valley, it is likely that a number of similarly sized aggregated settlements remain unknown to archaeologists.

Cottonwood Seep (Marek et al. 1993; Stebbins et al. 1986) represents a very different type of large settlement and, as far as we are aware, is a type of site not present on other parts of the Colorado Plateau during the early Pueblo period. Excavations in a railroad right-of-way through the site have documented dozens of shallow, round pit structures, single-room surface jacal structures, and small storage cists near a spring just south of the Puerco River (Marek et al. 1993; Stebbins et al. 1986). The excavators estimate the total number of structures in the mid-hundreds and that the site was in use from A.D. 500 to 900 based on radiocarbon dates, with a more likely occupation between A.D. 600 and 800 based on pottery, making the site a contemporary of those mentioned above. Nearly all pit structures were shallow, often with cribbed-log walls, less than 2.5 m in diameter, and usually contained informal features and poorly preserved floors. These structures contrast sharply with the deep, formal, well-constructed pit structures at other settlements in the valley, but the excavators suggest these differences were largely a function of differences in anticipated use-life rather than differences in cultural traditions or chronology. In other words, the large number of pit structures at Cottonwood Seep appears to be the product of repeated, seasonal use for agricultural pursuits over the course of centuries by local populations rather than the result of intensive occupation by a large population or a different cultural group (Greenwald et al. 1993).

Thus, the Puerco Valley early Pueblo period record contains small and large year-round habitation sites as well as small- to medium-sized settlements, including some like Cottonwood Seep that appear large in aggregate, used for seasonal agricultural pursuits. Surprisingly, the distribution of site types does not correlate well with varying ecological zones, as all types of sites are present in lowland, upland, and floodplain areas, although there is a tendency for larger, permanent sites to be located nearer to floodplain areas suitable for floodwater agriculture (Ahlstrom 1993).

The settlement dichotomy suggests that residential and seasonal mobility may have been more prevalent and frequent in the Little Colorado drainage compared with other parts of the early Pueblo period Southwest.

Zuni/Acoma

The Zuni/Acoma subregion encompasses the Zuni River and its major tributaries as well as the Acoma area to the east. For the purposes of our discussion, it is easiest to conceive of the subregion as three districts: the lower Zuni, including the Zuni River west of the Pueblo of Zuni, Hardscrabble Wash, and Jaralosa Draw; the upper Zuni east of the modern pueblo, including the eastern portions of the reservation and the El Morro Valley; and the Acoma area, including El Malpais, Cebolleta Mesa, and the area surrounding modern Acoma. A large body of survey data has been collected in the Zuni drainage as a result of a variety of academic projects (Kintigh 2007; Kintigh et al. 2004; Schachner 2007; Watson et al. 1980) and the efforts of the Zuni Cultural Resource Enterprise, its antecedents, and others in association with development projects on the Zuni reservation (Fowler 1980; Holmes and Fowler 1980; Hunter-Anderson 1978; Kintigh 1980). As we discuss below, however, most of this survey coverage is in the upper Zuni district, which does not appear to have been the locus of significant early Pueblo period settlement. To this day, the Acoma district is primarily known through the early work of Dittert (1959) and R. J. Ruppé (1990), although more recently survey has occurred at El Malpais National Monument and in the surrounding Conservation Area (Elyea et al. 1994; Powers and Orcutt 2005; Wozniak and Marshall 1991). Other than Kiatuthlanna (Roberts 1931), only a few early Pueblo period sites in this subregion have been excavated, primarily in association with road projects over the last few decades (e.g., Gratz 1977; ZCRE 2000) or by Dittert (1959) over 50 years ago.

Early Pueblo period settlements in the Zuni/Acoma subregion were most common in the lower Zuni district, rare in the upper Zuni district, and a minor component of settlement in the Acoma district. A number of early Pueblo period settlements, both large and small, were recorded during Beeson's (1966) reconnaissance of Hardscrabble Wash. Despite the early work of Roberts (1931) and Spier (1917), this area remains poorly known. Early Pueblo sites, documented during the Ojo Bonito Archaeological Project, are also fairly common on Jaralosa Draw near the Arizona–New Mexico state line (Kintigh 2007). Given that the lower Zuni district is directly adjacent to the Puerco Valley, settlement in the former area was probably closely linked to that in the latter through the movement of people and resources. East of the modern Pueblo of Zuni, early Pueblo period settlements were rare prior to an era of dramatic population growth beginning in the mid- to late Pueblo II period (Kintigh 2007). Early Pueblo period sites in the upper Zuni district tend to be small and dispersed (Fowler 1980; Wiseman 1977) and are often found in upland settings near the heads of canyons that contain tributaries of the Zuni River (Kintigh et al. 2004). In the Acoma district, Reynold Ruppé (1990) and Alfred Dittert (1959) noted that settlement before the A.D. 700s was limited. Population began to increase gradually in the Pueblo I period before expanding dramatically during the Pueblo II period. Recent surveys in El Malpais and on Cebolleta Mesa corroborate this hypothesized trend, indicating that ancestral Pueblo settlements were uncommon until either the late A.D. 800s or possibly even later (Elyea et al. 1994; Powers and Orcutt 2005; Wozniak and Marshall 1991). Given the relatively small amount of research upon which these conclusions are based, we would not be surprised if our assessments of the early Pueblo period in the Acoma district are revised significantly, especially as the settlement history of the area east of Cebolleta Mesa remains largely unknown to archaeologists.

Outside of Hardscrabble Wash, which contains the Kiatuthlanna complex discussed earlier as well as other potential large sites (Beeson 1966; Roberts 1931) (Figure 6.2), large early Pueblo settlements in the Zuni/Acoma region are rare. A few village-sized aggregates dating to the late Pueblo I and early Pueblo II periods have been noted in the canyons south of the Pueblo of Zuni (Fowler 1980).

These include a settlement with multiple, large masonry roomblocks and pit structure depressions (NM:12:J3:313, 314 [ZAP]) located in an upland area, and a contemporary, 11-ha complex of artifact scatters, pit structure depressions, and a possible great kiva along a minor drainage 2 km away (NM:12:J3:333, 334, 335 [ZAP]) (Fowler 1980). One of the roomblock rubble mounds (314) is over a meter tall (Fowler 1980:180) and may represent an early Pueblo period form of great house architecture comparable with those seen in the Mesa Verde and Chaco regions (Windes 2007). The 11-ha complex is difficult to interpret due to the limited manifestations of its subsurface architecture, but the likely presence of a great kiva suggests it was an important location during this time period and that local populations may have been relatively large. Large settlements dating to the late Pueblo I–early Pueblo II period have also been documented along Jaralosa Draw. The LZ1090 group includes a series of early Pueblo period artifact scatters covering a few hundred acres on neighboring upland ridges south of the draw. This group contains at least two great kivas and, most likely, dozens of pit structures. The H-Spear great house is located at the northern end of the largest artifact scatter and is an example of spatial continuity between early Pueblo period villages and Chaco-style great houses that we return to below. The other large settlement, the LZ5 group, comprises a series of late Pueblo I–early Pueblo II masonry roomblocks scattered along a few hundred meters of terraces immediately above the Jaralosa. The architectural differences (pit structures with minimal surface architecture vs. pueblos with pit structures) between these two similar aged sites are intriguing and potentially echo the similar form of settlement dichotomy noted for the Puerco Valley.

Northeastern Arizona

Our Northeastern Arizona subregion runs from the Chuska Mountains west to the Colorado River and from the San Juan River south to the Puerco Valley and the Little Colorado River. The geographic variability in this immense subregion is reflected in Herbert Gregory's 1916 division of it into 19 physiographic provinces (Gregory 1916). Most of the knowledge of the early Pueblo period in Northeastern Arizona is based on a series of excavation projects that began in the 1910s (Guernsey 1931; Kidder and Guernsey 1919). Archaeological surveys have investigated only about 3 percent of the subregion over the last 100 years. These surveys have been unevenly distributed geographically and are not representative of the study area as a whole. For example, substantial portions of the Chuska Mountains, Lukachukai Mountains, Carrizo Mountains, and the Defiance Plateau have been archaeologically surveyed in conjunction with timber sales, but other physiographic provinces that are more likely locations of early Pueblo settlement, including the Moenkopi Plateau, the Tsegi Mesas, Monument Valley, Navajo Mountain/Rainbow Plateau, Hopi Buttes, Tusayan Washes, and Gothic Mesas, have been scarcely investigated.

Virtually all researchers who have compiled data on changing site densities in specific study areas within this subregion have identified substantial population increases from the Pueblo I period to the Pueblo II period. This includes massive increases around A.D. 1000 in the Hopi Buttes area (Gumerman 1988), along northern Black Mesa (Powell 2002: fig. 5.5), near Low Mountain (Benallie 1989), the Hopi Mesas (Hack 1942:78–80, fig. 54), Canyon del Muerto (Fall et al. 1981; but see De Harport 1959), and the southern portion of the Navajo Nation (Lee 1966: table 7). In aggregate, these surveys suggest that population growth was primarily a phenomenon postdating A.D. 1000 or so in our Northeastern Arizona subregion.

Site organization in Northeastern Arizona changed throughout the early Pueblo period, although most sites would be classified as small hamlets. A number of small-scale excavation projects have occurred in this subregion, providing a clearer picture of site structure, variability, and change compared with our other subregions, which we outline here with a series of representative examples. Prior to A.D. 670 or so, most sites consisted of isolated or unplanned clusters of a few amorphous pit structures. A representative site of this period is NA11,545 on the Defiance Plateau (Fuller and Chang 1978) (Figure 6.3). Tree-ring-dated between

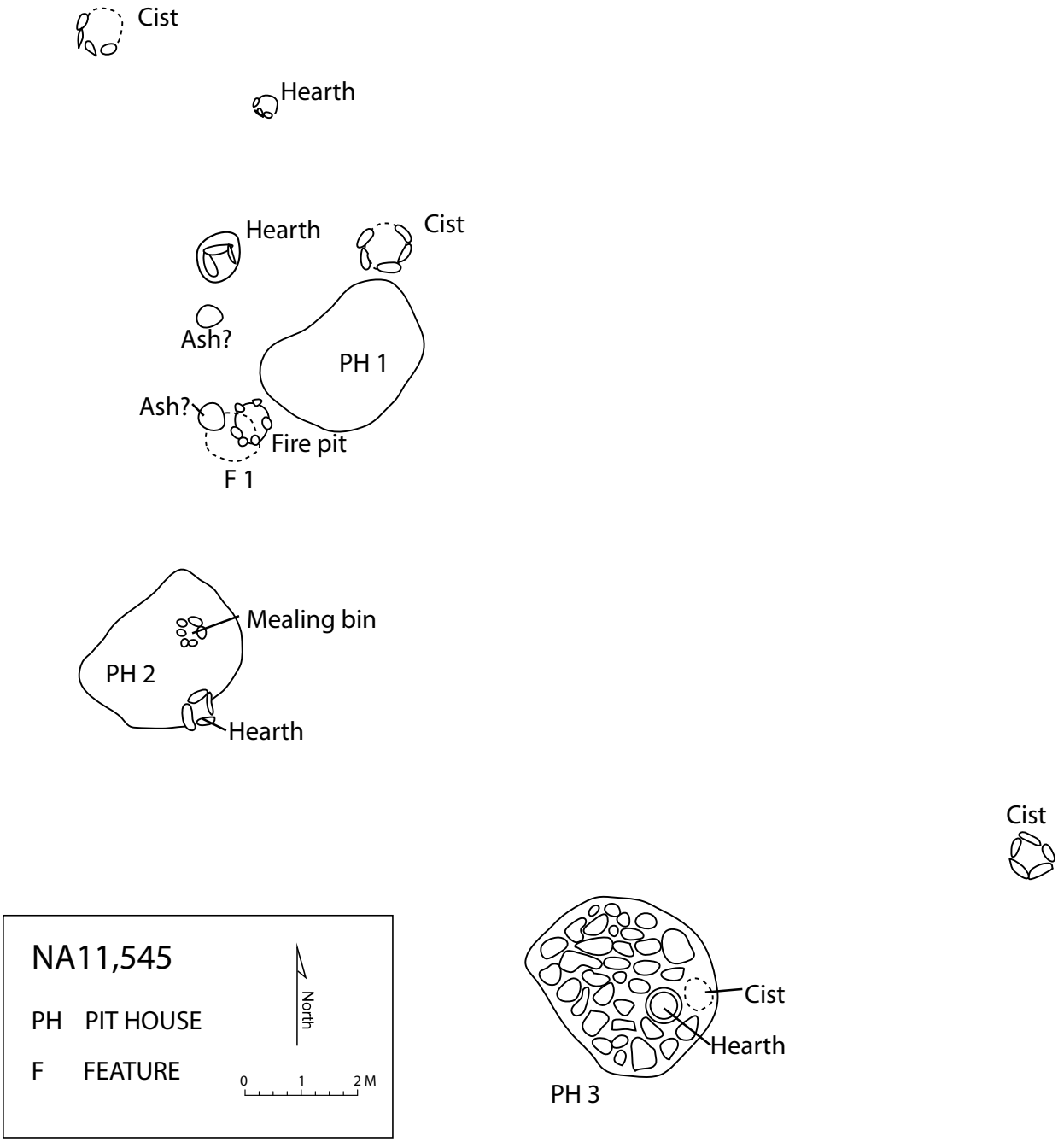


Figure 6.3. NA11,545, A.D. 650–700. After Fuller and Chang 1978: fig. 7.

A.D. 650 and 700, the site consisted of three pit structures, three cists, and three hearths. Pit structures ranged from D- to bean-shaped, one was slab-lined, had no interior divisions, and no ventilator systems. The lack of formal storage facilities suggests this site may have been a seasonal residence.

From about A.D. 670 to 700, most sites consisted of pit structures with arcs of conjoined circular surface storage bins. A representative site of this period is Jeddito 264, on southern Black Mesa (Daifuku 1961). Tree-ring-dated from about A.D. 670 to 730, this site consisted of 6 pit structures and 43 other features, mostly storage bins, including one arc of 10 storage bins. The prevalence of storage facilities is likely indicative of year-round residence. Although this pattern needs

to be further investigated, the timing of this shift suggests an earlier appearance of year-round sedentism in Northeastern Arizona in comparison with other parts of our study region.

From about A.D. 700 to 825, the typical site layout comprised pit structures with arcs of rectangular, tub-shaped storage bins, similar to those at White Mound Village discussed previously. The arc of 10 storage bins at Jeddito 264 with a pit structure in front is exemplary of this type of habitation. Some sites from this time period were quite large (Table 6.2). A good example of one of these larger sites is the Turtleback Adobe Site (AZ-I-61-27 [NN]) in the Chinle Valley, which dates between A.D. 750 and 850, based on ceramics. The portion of the site that has been excavated contained 21 structures (including arcs of storage rooms and pit structures), 43 extramural features, and 2 inhumations (Gilpin et al. 2007) (Figure 6.4).

From A.D. 825 to 925 and later, the standard site layout was the Prudden unit, an aboveground room block, usually constructed of wattle and daub and consisting of one or more habitation rooms in front and a row of storage rooms in the back, with a pit structure in front. Numerous examples of this type of site are reported. Site NA11,547, on the Defiance Plateau, is tree-ring-dated between A.D. 826 and 855 and consists of a surface structure of nine adobe rooms with four jacal rooms in front and two pit structures (Fuller and Chang 1978) (Figure 6.5). Other examples include AZ D:11:2027 (ASM) on Black Mesa (Powell 2002), NA8,013 on the Defiance Plateau at Cross Canyon (Olson 1971), and AZ-J-54-6 (NN) and AZ-J-54-9 (NN) on Black Mesa (Linford 1982). Northern Black Mesa sites investigated during the Black Mesa Archaeological Project exhibit a wide range of diversity in site organization, even though they all date to the late A.D. 800s (Powell 2002). This diversity contrasts with the comparative uniformity of sites in the Puerco Valley at this time which, while also largely conforming to Prudden-unit layouts, exhibit much greater homogeneity. Site layouts in the Zuni/Acoma and Mogollon Margins regions are more diverse, however. These differences may reflect greater emphasis on social conformity in the Puerco Valley core (cf. Kohler et al. 2004; Hegmon et al. 2008), but this possibility requires more detailed study.

Large sites (more than 10 pit structures or 50 surface rooms) within Northeastern Arizona were established perhaps as early as A.D. 500 (see Table 6.2). Dwellings of individual households within these sites were usually typical of the era in which the site was occupied. Storage capacity increased over time, and dwelling layouts became increasingly formalized and front-oriented (Bullard 1962:100), which may be indicative of increasing sedentism. Overall site organization, however, remained informal, as shown in plans of the Ganado site (AZ-P-20-96 [NN]) (Gilpin and Benallie 2000: fig. 8.6), Bad Dog Ridge (Gilpin and Benallie 2000: fig. 8.5), NA11,057 (Stebbins et al. 1986: fig. 31), AZ E:12:5 (ASM) (Altschul and Huber 2000: fig. 7.3), Rabbit Hill Village (NA9,577) (Rippey 1969), and Turtleback Adobe (Drake 2007: fig. 6.1). Only 5 percent of AZ E:12:5 and only about one-third of the Turtleback Adobe site have been excavated, and the Ganado Site and Bad Dog Ridge are known only from surface recording, but all were apparently substantial, sedentary residential sites with 10 to 40 estimated dwellings. Given the methodologies and extent of investigations, some of these sites may be much larger than, or equivalent in size to, smaller villages in the Mesa Verde region. As in the Puerco Valley, a number of early population aggregates in our Northeastern Arizona subregion, especially on the Defiance Plateau, remained important social centers into the subsequent Chaco period and beyond, as indicated by the presence of later Chaco-style great houses and other Chaco period habitations (Gilpin and Benallie 2000).

Mogollon Rim Margins

Our Mogollon Rim Margins subregion is a large and geographically diverse area encompassing nearly 8,000 km^2 along the southern edge of the Colorado Plateau from just west of Snowflake, Arizona, to the Continental Divide near Mariana Mesa. This subregion includes a wide variety of sites and landscapes, falling in the transition zone between areas defined as Anasazi and Mogollon by early Southwest archaeologists. Although there are arguably significant

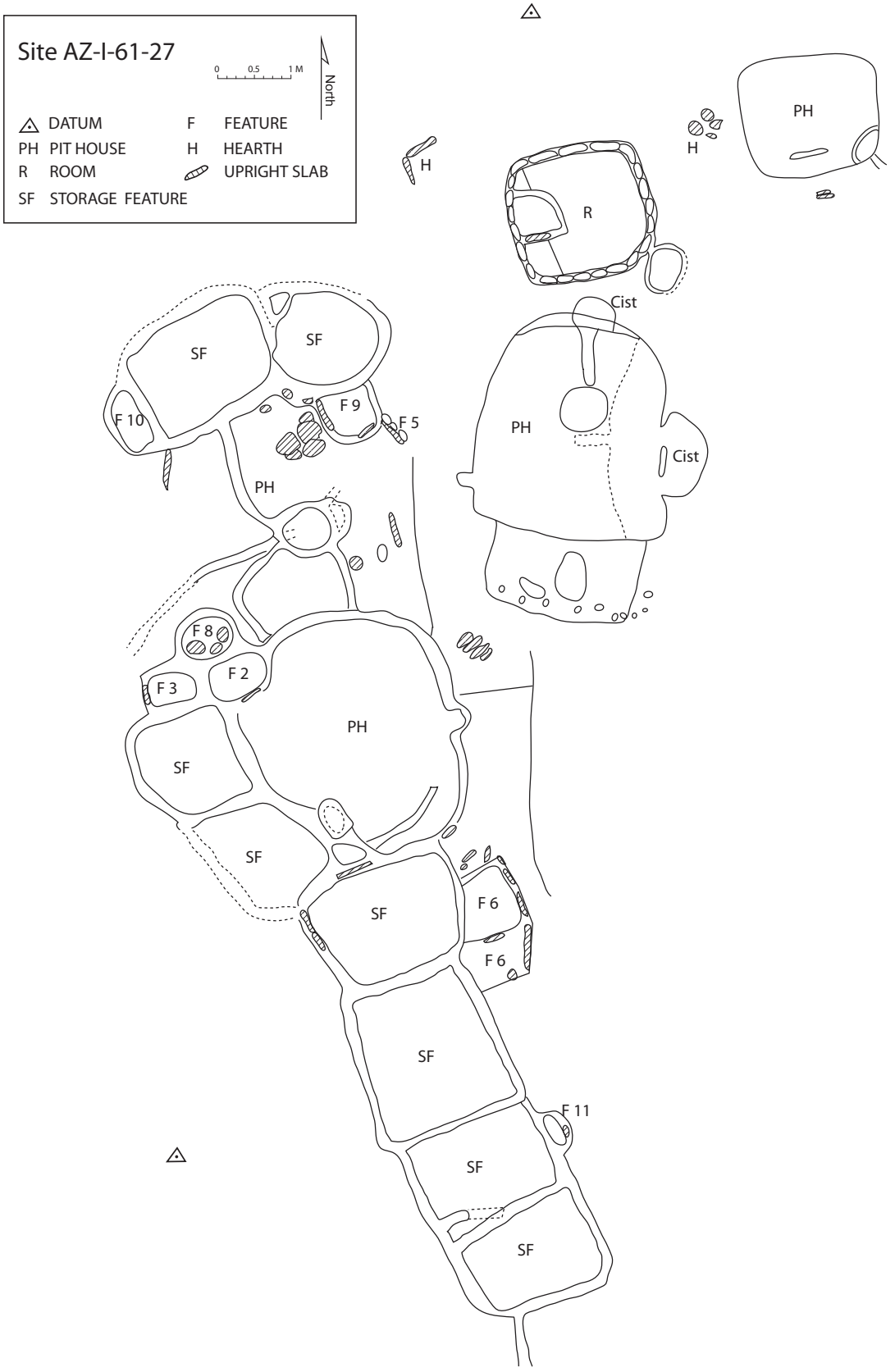


Figure 6.4. A portion of the Turtleback Adobe Site (AZ-I-61-27 [NN]), A.D. 750–850. After Drake 2007: fig. 6.2.

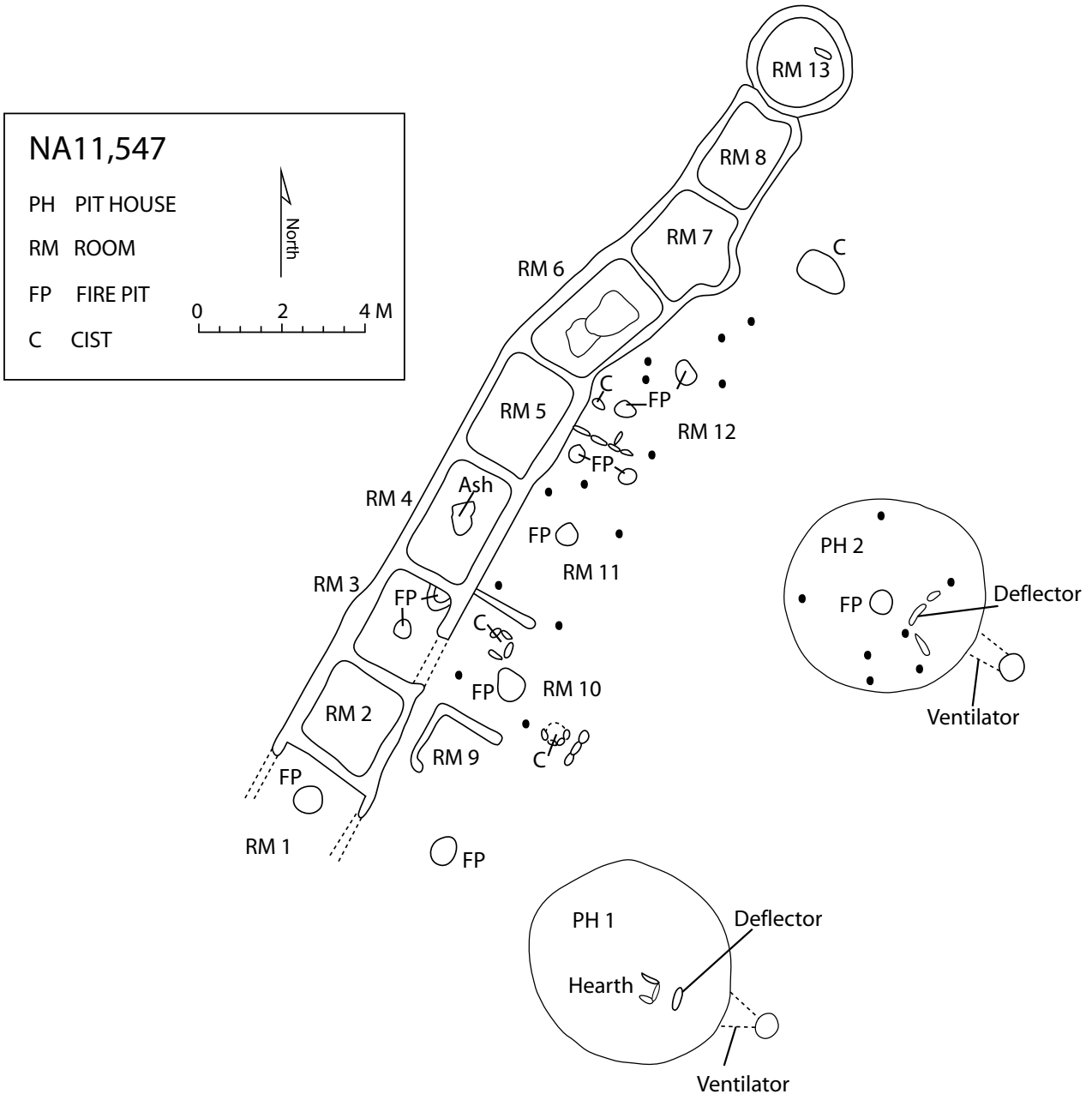


Figure 6.5. Site NA11,547, A.D. 826–855. From Fuller and Chang 1978: fig. 24.

differences in patterns of early Pueblo period settlement across this subregion, we have not subdivided it in the following discussion because the general history of research and issues that have been considered across this broad area are similar.

The primary source of information on regional-scale patterns of settlement consists of a series of reconnaissance surveys conducted in the 1950s and 1960s (Beeson 1966; Danson 1957; Longacre 1964), which have more recently been supplemented by cultural resource projects driven by the coal industry and state land assessments (Bernard-Shaw 1993; Camilli et al. 1988; Elyea 1990; Gilpin et al. 2004; Hogan 1985). As with several of the other areas covered in this chapter, survey coverage has largely been focused on portions of the region that contained dense settlement during the Pueblo III and Pueblo IV periods. A general assessment of the

available reconnaissance survey data suggests that potentially important areas of early Pueblo period settlement, such as areas west of Mariana Mesa and along the Arizona–New Mexico border, remain largely unknown.

Early Pueblo period settlements were relatively rare across the entire Mogollon Rim Margins subregion prior to the A.D. 800s. The general picture from both regional-scale reconnaissance and intensive full-coverage survey is that population was widely dispersed across the subregion, with few dense concentrations relative to other subregions to the north. A typical early Pueblo period site in the subregion consists of one or a few pit structures, cobble concentrations, or jacal structures, usually found on the first terrace above rivers and major drainages (Danson 1957; Longacre 1964:208). As in most of the Little Colorado region, large settlements were rare and are difficult to interpret (Table 6.2). From the surface, most of these large sites appear to be nothing more than dense artifact scatters. Some, however, such as LA 4032 (J. P. Wilson 1972), which covers over 6 ha, likely contain dozens of structures. Even where excavation data are available, such as at Cerro Colorado (Bullard 1962), it is difficult to determine whether or not the large sites represented contemporaneously occupied villages or repeated use through time by smaller groups. Two great kiva sites have been recorded in the subregion, including Garcia Ranch Bench AZ Q:8:1 (ASM) (Beeson 1966) and AZ P:12:404 (ASM) (K. G. Lightfoot 1984). Although more intensive investigation would be necessary to determine the nature of these sites, they both may be large, permanent population aggregates, given the presence of analogous sites to the north.

Although survey coverage is spotty, it appears that large sites are located in areas with relatively more early Pueblo period sites overall (e.g., Carrizo Wash [Beeson 1966:118–125], the Quemado area [Danson 1957:68–71], and in the Snowflake area [K. G. Lightfoot 1984:87–88]). After A.D. 850, there was an increase in the number and size of settlements in portions of the subregion. In particular, in the Mariana Mesa area, there are a number of habitation sites that date between A.D. 850 and 950 based on pottery (Danson 1957:69–71; McGimsey 1980). This initial increase in population was a prelude to a massive increase in population that occurred in the A.D. 1000s and included the construction of a cluster of Chaco-style great houses west of Mariana Mesa to the New Mexico border (Duff and Schachner 2007; Fowler et al. 1987). This population trend was not, however, uniform across the subregion. For example, population in the Snowflake area apparently began to decrease by the A.D. 900s (K. G. Lightfoot 1984:87–88).

Few excavations of early Pueblo period sites have been conducted in this subregion. Cerro Colorado, near Quemado, New Mexico, is one of the largest early Pueblo period sites in the subregion and was excavated as part of the Upper Gila Expedition in the 1950s (Bullard 1962). The site contains dozens of pit structures dating primarily to the seventh century (Bannister et al. 1970; Bullard 1962:12) along the summit and slopes of a large basaltic butte west of Mariana Mesa. A total of 35 pit structures, along with numerous cists and several isolated storage rooms, were excavated, and many other structures are likely present in unexcavated areas. Stratigraphic relationships among the excavated pit structures, together with the available tree-ring dates, suggest, however, that these numerous structures represent the continuous or repeated occupation of a single location by small groups rather than a large contemporaneous village (e.g., Ahlstrom 1985:163–173; Bullard 1962:24–36). In addition to the work at Cerro Colorado, there have been several excavations of small sites dating between the Basketmaker II and late Pueblo I periods in the Mariana Mesa area and west along Carrizo Wash (Gilpin et al. 2004; Huber and Van West 2005; McGimsey 1980; Oakes 1986), along the Upper Little Colorado (Bradford 1980; Doyel and Debowski 1980), and in the areas west of St. Johns and Springerville, Arizona (Martin and Rinaldo 1960; Vivian 1966). These excavated sites were occupied by one to several households and include a mix of seasonal and year-round habitations.

Many sites in the Mogollon Rim Margins subregion have substantial quantities of pottery traditionally considered Anasazi (e.g., gray wares,

Cibola White Ware) as well as pottery considered Mogollon (e.g., Mogollon Brown Ware, Forestdale and San Francisco Red, Mogollon Red-on-brown [Danson 1957:71]). The proportions of various types in any particular part of the subregion appear to shift through time (Elyea 1990; Mills 2007). Based on architectural remains, Bullard (1962:47–49) interpreted Cerro Colorado as an Anasazi site with "negligible" Mogollon influence during the earliest occupation, but saw increasing Mogollon influence through time. Wasley (1959) conducted a low-power microscopic investigation of painted pottery at Cerro Colorado and suggested that some of the Mogollon painted types at the site were locally produced. The technologies of production for these types were distinct from the more common painted types found at Cerro Colorado, and their manufacture at the site may be indicative of the mixing of potters working in different traditions in this portion of the Mogollon Rim Margins. This mixing may have been due, in part, to migration from distant parts of the Little Colorado and Mogollon regions (see also Mills 2007:216–217). Our understanding of variation in pottery traditions and architecture outside of the Mariana Mesa area is less clear, as relatively little detailed study of these topics has occurred.

Little Colorado Region Demography during the Early Pueblo Period

Due to the nature of the archaeological record across the large area covered here, we have not attempted to make estimates of absolute population. As noted above, our knowledge of the early Pueblo period in the Little Colorado region is based largely on surface reconnaissance, and it is likely that numerous large and small sites in several portions of the study area remain unrecorded. Our approach instead is to use data from the better-known portions of the region in order to estimate relative changes in demography across the early Pueblo period. Reconnaissance data from the remainder of the study area (Beeson 1966; Danson 1957; Lee 1966; K. G. Lightfoot 1984; Longacre 1964) suggest that the general trends proposed here are reasonably characteristic of the Little Colorado region as a whole.

In order to explore potential changes in population density through time, available survey and excavation data were compiled from two areas, the Northeastern Arizona subregion and two of the districts (upper and lower Zuni) in our Zuni/Acoma subregion. The available surveys account for roughly 3 to 5 percent coverage of these two subregions combined, but the accessible data vary between the subregions. Much of our Northeastern Arizona subregion is on Navajo Nation lands, which means that data from large portions of this area are not available in State of Arizona records (i.e., AZSITE). The Northeastern Arizona data analyzed here were compiled by Gilpin and include all sites that could be obtained through AZSITE as well as all Basketmaker III–Pueblo I site data available in the published literature. These sites were placed into three time periods (A.D. 600–700, A.D. 700–800, and A.D. 800–900) based on available absolute dates, ceramic counts, or surveyors' assessments. Our estimates for the Zuni subregion are based on survey data compiled as part of an NSF Biocomplexity–funded project focused on long-term coupled socio-ecological trends in the U.S. Southwest and northern Mexico (NSF #0508001). Architectural, ceramic, and other available data were compiled for all available full-coverage block surveys of 500 acres or more in our lower and upper Zuni districts. Sites were placed into the same three time periods used for the Northeastern Arizona subregion, based on absolute dates where available, a frequency seriation of ceramic tabulations (following Kintigh et al. 2004), and surveyors' assessments. For both of these regions, many sites could only be dated based on the Pecos Classification due to a lack of absolute dates or published ceramic counts. This led to some sites being counted in more than one of our temporal intervals. This problem is unavoidable without gathering additional data at these sites and leads to somewhat less change in relative site numbers through time than would be the case if we had more precise chronological information.

Table 6.3 lists the total number of sites from our survey sample as well as all known large sites

Table 6.3. Occupied components during hundred-year intervals

Subregion	AD 600–700	AD 700–800	AD 800–900
Zuni	29 (2)	32 (2)	55 (6)
Northeastern Arizona	46 (9)	51 (10)	62 (7)

Note: Large sites in parentheses.

(both within and outside our survey sample) dated to each of three centuries between A.D. 600 and 900. The compiled data suggest that, in general, the number of sites per century in our study area increased gradually between A.D. 600 and 800 and then increased somewhat more abruptly between A.D. 800 and 900. This increase in the A.D. 800s is not likely simply a product of increased site visibility, as a large proportion of sites in this last interval consist of small pit structures not unlike sites dating to the earlier intervals. Although we do not present those data here, our synthesis of survey information also suggests an even greater increase in sites per century between A.D. 900 and 1000, with site counts in the Zuni subregion more than doubling, and sites also increasing dramatically in size. This trend is also seen in Northeastern Arizona (Fall et al. 1981; Lee 1966: table 7). We see evidence for similar trends in population change in the Puerco Valley (Ahlstrom 1993; van Hartesveldt et al. 1998; Weaver 1978; Wells 1994) and the Mogollon Rim Margins (Bernard-Shaw 1993; Danson 1957; K. G. Lightfoot 1984; Newcomb 1999). It is likely that the population increase in the Puerco Valley region in the A.D. 900s may have been even greater than previously estimated, as there is evidence that several of the Chaco-style great houses built in this area may have been first occupied in the tenth century (Fowler and Stein 1992; Gilpin 2003; Wilcox 2005).

The sites included in our survey sample are displayed on Figures 6.6–6.8 along with all recorded large sites and other excavated sites for which we have data from the Puerco Valley and Mogollon Rim Margins. These maps should not be interpreted as containing all sites dating to the period in question, but the general spatial trends illustrate changes in the areas most intensively occupied through time. Between A.D. 600 and 700, the early core of settlement across the study area fell primarily between the Puerco and Zuni rivers west of the Arizona–New Mexico border (Figure 6.6). This area also contains the pre–A.D. 600 population aggregates discussed earlier in this chapter, as well as a majority of the large sites dating to the seventh century. In Northeastern Arizona, there was a sizable group of small sites as well as a few large sites along the Shonto Plateau east to the southern edge of Black Mesa. Between A.D. 700 and 800, the area between the Puerco and Zuni subregions remained a major population center, while numerous small sites were also present throughout Northeastern Arizona, from the Shonto Plateau to the Chinle Valley. During our final A.D. 800 to 900 interval, there was a major shift in the demographic center, as numerous large sites and great kivas were constructed on the Defiance Plateau as well as in the Zuni drainage just east of the Arizona–New Mexico border. These two areas, along with the Puerco Valley, roughly correspond to the primary areas where Chaco-style great houses and major Pueblo II period communities were constructed in the Little Colorado region during the subsequent two centuries (Fowler and Stein 1992).

Cooperation and Conflict

Evidence for cooperation among multiple social groups in the Little Colorado drainage includes the presence of large settlement aggregates and various types of public architecture. The most common examples of public architecture are circular great kivas roughly 10–15 m in diameter (Table 6.4). Great kivas were present in the Little Colorado archaeological record beginning in the Basketmaker II period in the Puerco Valley (Gilpin, van Hartesveldt, and Lambert 1991) and continued as

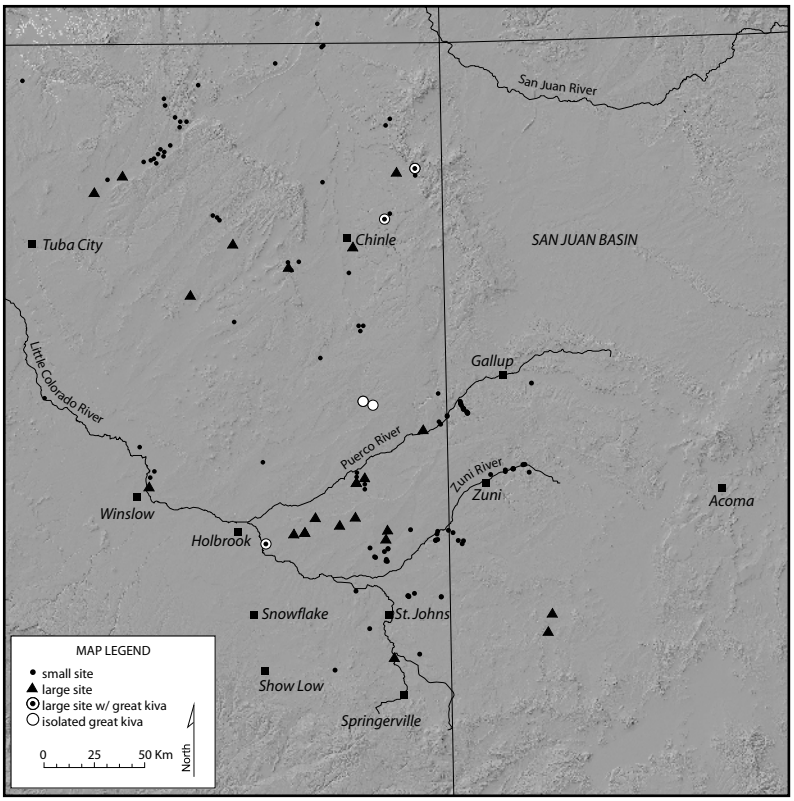


Figure 6.6. Little Colorado area early Pueblo period sites, A.D. 600s.

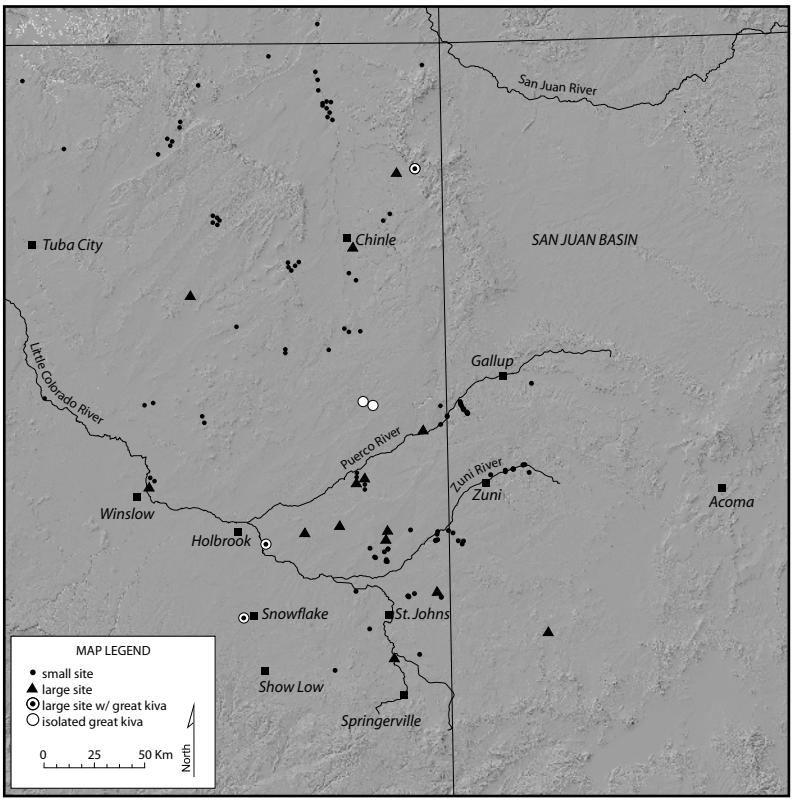


Figure 6.7. Little Colorado area early Pueblo period sites, A.D. 700s.

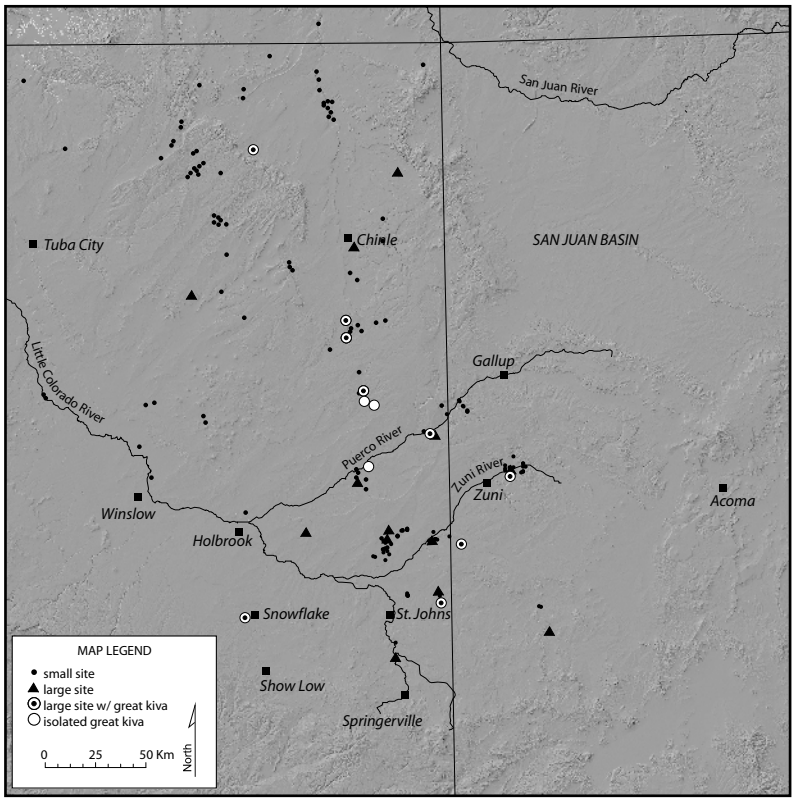


Figure 6.8. Little Colorado area early Pueblo period sites, A.D. 800s.

the most common form of public architecture until the Pueblo III to Pueblo IV transition (Herr 2001). Only two examples, Whitewater Village, most likely used in the A.D. 800s, and Juniper Cove, tree-ring-dated to the A.D. 600s, have been excavated. The Whitewater great kiva (or dance court) lacks evidence of a roof or bench (Roberts 1939:126–130), while a bench, but possibly not a complete roof, was present at Juniper Cove (Gilpin and Benallie 2000:164–165). Both were approximately 11 m in diameter. All other examples are known only from surface evidence, making it unclear whether roofed or unroofed structures were the more common form in the region. Archaeologists have used the presence of roofs as one line of evidence in determining the extent of public participation, and hence cooperation, in ceremonial life in the Little Colorado region (Herr 2001; Kintigh et al. 1996). More data on the roofing of early Pueblo period great kiva structures would enable archaeologists to more accurately gauge the size of participating groups and potential community size during this era (see R. R. Lightfoot 1988). One additional form of public architecture that has been identified at a single settlement on Black Mesa is a rectangular 15 × 30 m area delineated by upright slabs set among a number of late Pueblo I–early Pueblo II roomblocks (Bernardini, personal communication 2009). This structure has been interpreted as a dance plaza potentially similar to an early Pueblo II structure located along the San Juan River near Bluff, Utah (Jalbert and Cameron 2000:84–85; also see Allison et al., Chapter 3).

Gilpin and Benallie (2000) have identified a few important patterns in the placement of great kivas in relation to early Pueblo period settlements. They note that Little Colorado Basketmaker III–early Pueblo I great kivas were associated with larger, year-round settlements that also contained many storage features (rooms, bins). In fact, their analyses suggest that the storage capacity of aggregated sites with great kivas actually outstripped the settlement population, indicating that surplus resources or resources that were shared with people residing at other villages or hamlets were present. Although

Table 6.4. Early Pueblo period great kivas in the Little Colorado area

Site	Number	District	Dates	#	Isolate?	Associated Chaco Great House	Reference
Puerco Valley							
Navajo Springs Territorial Government Anasazi complex	AZ-P-60-14 (NN)	Puerco Valley	700–900 (P)	1	Yes	—	Gilpin, van Hartesveldt, and Smith 1991
Whitewater Village	NA4119?	Puerco Valley	814–886 (TR)	1	No	Allentown	Roberts 1939, 1940
Zuni/Acoma							
LZ1090 group	LZ1090 (OBAP)	Lower Zuni	850–950 (P)	2	No	H-Spear	OBAP field notes
NM:12:J3:333	NM:12:J3:333 (ZAP)	Lower Zuni	825–925 (P)	1	No	—	Fowler 1980
Northeastern Arizona							
AZ-K-10-47	AZ-K-10-47 (NN)	Defiance Plateau	500–900 (P)	1	Yes	—	Andrews 1982
AZ-K-11-20	AZ-K-11-20 (NN)	Defiance Plateau	700–1100 (P)	1	Yes	—	Andrews 1982
AZ E:12:5	AZ E:12:5 (ASM)	Chinle drainage	600–750 (TR,P)	1	No	—	Altschul et al. 2000
Bad Dog Ridge	None	Defiance Plateau	500–700 (P)	1-2	No	Bad Dog Ridge	Gilpin and Benallie 2000
Big Cave	CDM-155 (NPS)	Chinle drainage	500–900 (P)	1	No	—	Grant 1978; Lister and Lister 1968
Ganado	AZ-P-20-96(NN)	Defiance Plateau	500–850 (P)	5	No	Ganado	Gilpin and Benallie 2000
Juniper Cove	NA3,570, NA7,623	Chinle drainage	666–678 (TR)	1	No	—	Cummings 1953: Gilpin and Benallie 2000
Reagan 277	None	Defiance Plateau	700–900 (P)	1-3	No	—	Reagan 1928
Mogollon Rim Margins							
AZ P:12:404	AZ P:12:404 (ASM)	Arizona Mogollon Rim	750–900 (P)	1	No	—	Lightfoot 1984
Garcia Ranch Bench	AZ Q:8:1 (ASM)	Carrizo Valley	850–950 (P)	1	No	—	Beeson 1966

settlements with great kivas had only a portion of the population of larger social communities, these locations were likely centers of social and ceremonial life and may also have been important locations for the storage of economic resources as well. Isolated great kivas make up only a small proportion of the great kivas in the region (Table 6.4). Exactly what role these structures played in early Pueblo period communities remains unclear (Vivian 2000:255–256), but studies of the relationships among great kivas, procession panels (Robins and Hays-Gilpin 2000:241–243), and White Mound Black-on-white bowls depicting alternating male and female figures (Cordell 1997: 249–251, fig. 8.10) suggest a shift from individual shamanic and household rituals to group rituals, including puberty rites for age cohorts rather than individuals (also see Wilshusen et al., Chapter 11). Kitchell (2010:834–836) presents an alternative interpretation that procession panels do not depict actual events but are instead representations of cultural concepts and narratives.

Roughly one-third of the early Pueblo period great kivas are located in close proximity to later Chaco-style great houses and great kivas (Table 6.4), indicating some long-term persistence of the geographic location of community centers as seen in the Mesa Verde region (Varien 1999). Many of these complexes exhibit continuous, intensive usage as both major population centers and loci of community ritual events. Intriguingly, the chronology of this pattern contrasts with that identified by Varien (1999) in the Mesa Verde region. In the Little Colorado drainage, persistence of place appears stronger across the Basketmaker III through Pueblo II periods, followed by a settlement break at the end of the Chaco period, while in the Mesa Verde region

persistence is more apparent from the Chaco period through the end of the Pueblo III period (also see Fowler et al. 1987). These contrasting patterns suggest differences in the timing of major settlement breaks between the two regions: at the end of the Chaco period for the Little Colorado region and at the end of the early Pueblo period for the Mesa Verde area.

Oversized pit structures that may have been used by smaller social segments for ceremony and other integrative activities may also be present in the Little Colorado record. These types of structures have been identified in the Mesa Verde region (Wilshusen 1989) and appear to have played a key role in the development of small-scale social units in that area (Ware 2002; Wilshusen 1989). Although we have not conducted a thorough examination of available data in the Little Colorado region, for an example we note Structure 12 in Group No. 2 at Whitewater (Roberts 1939:102–115), an elaborate pit structure nearly 7 m in diameter, with extensive floor features, including the probable remains of lateral floor vaults. Roberts (1939:108) dates the structure to the mid-800s to early 900s, although given the problems with the proveniences of Whitewater tree-ring samples noted by later researchers (Ahlstrom 1985:204; Bannister et al. 1966:12), this should be considered a tentative date. We suspect similar examples are present in the Little Colorado region, but a study analogous to the well-sampled, quantitative analysis of variation in pit structure form conducted by Dolores Archaeological Project researchers has yet to occur.

Finally, we note that evidence for the potential flipside of cooperation, conflict, is fairly limited in the Little Colorado region in comparison with other areas during the early Pueblo period (see LeBlanc 1999:119–152). On the one hand, the formation of large population aggregates could certainly be interpreted as partly driven by concerns for defense of life and property (LeBlanc 1999:62–63). Some early Pueblo period settlements in the Little Colorado region, such as Cerro Colorado, are situated in defensive positions atop mesas or ridges, while a far greater number are located on broad mesa tops, floodplains, or rolling terrain. Constructed defensive features, such as palisades and enclosing walls, and highly defensible settlement locations atop inaccessible landforms that have been documented elsewhere at early Pueblo period sites (LeBlanc 1999:125–130), remain largely unknown in the Little Colorado region. The only example in our sample is AZ Q:11:50 (ASM), a small village located on a mesa top above the Little Colorado River in the Richville Valley (Beeson 1966:181–185) (Table 6.2). At this site, a series of small walled-in areas containing pit structures is located at the tip of a mesa behind a larger wall that guards the easiest approach. Rerecording of this site, as well as examination of other potential walled sites noted by Beeson and Martin along the Little Colorado River between St. Johns and Springerville, may shed more light on this phenomenon. Direct evidence for conflict, including skeletal trauma and unburied individuals, is also rare within the Little Colorado region during the early Pueblo period (LeBlanc 1999: table 4.1), although we caution readers that the total excavated sample is not particularly large in comparison with that from other regions. It is our sense that although sporadic outbursts of violence were present within the Little Colorado drainage during the early Pueblo period, conflict was a minor component of life in comparison with other regions or eras within the Southwest. This pattern contrasts sharply with that of the Mesa Verde region, where conflict appears to have been an important factor during the early Pueblo period, particularly during the Basketmaker III era and as portions of that region were depopulated in the A.D. 800s (see Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2).

Migration and Cultural Diversity

Cultural diversity during the early Pueblo period in the Little Colorado region, which sits along the transition zone between the archaeologically defined Anasazi and Mogollon culture areas, has been a central concern for researchers since the beginning of archaeological study in the Southwest. Initial studies focused on pit structure form (e.g., Bullard 1962; Wendorf 1953) or the presence of gray and

brown ware pottery (Danson 1957; Haury 1985; Mera 1934; Wasley 1959, 1960; Wendorf 1953), especially in the area south of the Puerco River and east of its confluence with the Little Colorado River, to understand the processes through which "mixed" settlements or assemblages bearing what were thought to be defining traits of either the Anasazi or Mogollon culture areas were created. Archaeological sites and assemblages that did not fit comfortably within one or the other category, either due to their composition or location, were seen as resulting from the diffusion of ideas, the movement of people, and/or exchange of goods in a transition zone at the boundary between the two culture areas. Determining which combination of these potential processes was responsible for these patterns was either rarely problematized (although see Wendorf 1953:125–128) or simply beyond the ability of initial studies, given available data and analytical techniques.

Beginning in the 1970s and 1980s, Little Colorado archaeologists began to focus more closely on these questions, particularly the production and movement of pottery. Methodological and technological advances enabled them to determine that the majority of brown ware in the area was in fact locally produced, challenging previous ideas that it was spread directly through exchange of finished products or by the movement of people and their possessions out of the Mogollon area (Fowler 1991; Hays-Gilpin and van Hartesveldt 1998). On the other hand, greater attention to technological style, including forming techniques and surface treatments, suggested that pottery producers from divergent communities of practice were residing in the Little Colorado region, leading to a situation where the area is now seen not as a hard boundary that may have moved through time, but rather as a permeable frontier zone that people may have crossed freely and frequently (van Hartesveldt et al. 1998:50; Mills 2007). Variation in the distribution of brown and gray ware is no longer seen simply as a function of the distribution of people or raw materials, but driven by complex and co-occurring processes of exchange and population movement within and across the transition zone. Further attention to the details of ceramic technology may prove particularly powerful in determining the extent of migration and cultural diversity in the region.

Two other lines of evidence related to this topic also deserve mention. First, not only has the intermingling of different plain ware pottery traditions during the early Pueblo period drawn the eye of Little Colorado archaeologists, but this process also occurs among painted wares as well. As pointed out by a number of researchers (Colton 1953:71; Jernigan 1982; Plog 1980), the design styles present on white ware pottery prior to the A.D. 900s cross-cut different ware categories, such as Tusayan and Cibola White Wares, suggesting either frequent exchange or the movement of people across a huge portion of the northern Southwest (see Braun and Plog 1982). This topic has not received close attention for many years and may prove a profitable avenue for exploration of cultural diversity in the future. In the Little Colorado region, early Pueblo period settlements are dominated by sand- and sherd-tempered, mineral-painted Cibola White Ware south of Black Mesa and Chinle, Arizona. Sand-tempered, organic-painted Tusayan White Ware is the most common painted ware on Black Mesa, in the Kayenta region, and in the Chinle drainage north of the town of Chinle. In the Puerco Valley and much of the southern portion of our Northeastern Arizona area, including the southern Chinle drainage and Defiance Plateau, Tusayan White Ware is commonly found as well, suggesting either frequent exchange of northern pottery into this area or a broad overlap of the distribution of potters working in both the Tusayan and Cibola traditions. The fact that this area is also the probable core of early Pueblo settlement in the Little Colorado region may not be coincidental, especially if people from throughout the area were drawn to developing social centers in the Puerco Valley and on the Defiance Plateau.

Second, just as earlier researchers were struck by the potential to use pit structure form (Bullard 1962; Wendorf 1953) as a proxy for tracking cultural identity, we suggest that this aspect of material culture receive renewed attention as we continue to

explore migration and cultural diversity in the area. This effort will require synthesizing the large body of data generated by contract archaeology over the last 50 years and engagement with recent theoretical advances in studying architecture to explore identity (Clark 2001; Lyons 2003; Stone 2003). Pit structure form may provide an important contrast to data generated by ceramic studies, as the features marking pit structures as physically different are often internal to the structure and would be visible only during less public forms of social interaction. Pit structure studies will also require teasing out variation in form related to other factors, such as seasonal occupation or anticipation of short-term usage, in assessing the meaning of variation in pit structure form and internal features. It is our sense that given the apparent frequency of movement, diversity of ceramic assemblages and pit structure form, and the geographic location of the Little Colorado region, cultural diversity and migration were key factors during this period.

Conclusion

The Little Colorado region was characterized by low population density and limited population growth from A.D. 600 to 925, especially compared with the post–A.D. 925 population explosion. The Puerco Valley was the center of population throughout most of the period. Large settlements began to form there by A.D. 200, if not earlier, with some being used seasonally, while others were among the first large, permanent villages on the Colorado Plateau. Populations in the Little Colorado region became more sedentary over time, as evident in increases in storage capacity and the formality of site organization. Variable strategies of movement continued to be pursued, however, as some large sites dating after A.D. 600 were sedentary villages, while others were seasonally occupied by small groups over centuries. Frequent and diverse forms of mobility were significant structuring factors influencing early Pueblo period settlement in the area, resulting in some of the contrasts seen between the Little Colorado region and other parts of the early Pueblo world. Great kivas were often constructed at settlements with the greatest concentrations of storage facilities, which served not just as ritual centers but as storage hubs for increasingly sedentary communities (Gilpin and Benallie 2000). A number of the large early Pueblo period settlements that contained great kivas later became the centers of Chaco period communities, thus exhibiting an early pattern of community persistence not seen in other parts of the Southwest until later eras (see Wilshusen, Ortman, and Phillips, Chapter 11).

While we are confident that some of our general conclusions about settlement trends will stand over time, our knowledge of the early Pueblo period in the Little Colorado region pales in comparison with most of the other areas discussed in this volume. Our ability to address some of the questions raised by recent studies in other regions, such as the connection between the early Pueblo period and the rise of Chaco Canyon, the importance of migration and cultural diversity in generating social change, and the origins of leadership, villages, and exchange networks, remains limited. We anticipate, however, that many of these questions could be successfully addressed through the synthesis of the patchwork of existing data and continued acquisition of new data.

We also note that recent reexaminations of pan-regional phenomena during the early Pueblo period, largely generated through engagement with the archaeological record of the Mesa Verde region and San Juan Basin, may be improved through greater attention to the record of the Little Colorado region. First, the Little Colorado region early Pueblo record is characterized by a great deal of variation in settlement types, population densities, and subsistence strategies that seems to contrast with an increasingly structured view of this period in other regions. This is not to criticize those portrayals (in fact, they are likely correct), but to note that the Little Colorado region may serve as an important foil for understanding social developments in other regions. In other words, alternative trajectories are out there and nearby, and the fruits of comparison remain to be picked by researchers investigating regions characterized by uniformity and regions characterized by diversity (also see Lekson, Chapter 12). Second, a great deal of recent effort has focused

on the disruption of early Pueblo period social systems in the late A.D. 800s in the Mesa Verde region and the rise of Chaco (see Wilshusen and Van Dyke 2006 for the most comprehensive summary of these ideas). In contrast, links between the early Pueblo archaeology of the Little Colorado region and Chaco suggest continuity between early Pueblo period villages and social centers and those of Chaco, rather than social disruption. Vivian's (1989, 1990) proposals about Chaco as a product of multiple ethnic groups included both Mesa Verde and Little Colorado groups in this process. The relationship between Chaco and the early Pueblo period has not received much attention in recent work by Little Colorado archaeologists, but deserves further attention going forward. Again, we suggest that a wider view of developments during the early Pueblo period is necessary and hope that this volume moves us in that direction. Our brief, and admittedly broad-brush overview of the Little Colorado region suggests that there is much for us to still learn about this key time period and that future studies have the potential to address questions at the heart of Southwest archaeology and the study of early farming societies throughout the world.

CHAPTER 7

The Unexpected Stability of Rio Grande Communities during the Early Developmental Period

STEVEN A. LAKATOS AND C. DEAN WILSON

THE RIO GRANDE VALLEY IS WELL KNOWN for its large late precontact, postcontact, and contemporary Native American pueblo villages, yet only limited research has focused on the antecedents of these aggregated settlements. During the first half of the Developmental period (A.D. 600–900), the hallmarks of settled life appeared in the Rio Grande region as small communities of forager-farmers. A wide range of archaeological data demonstrates that population remained relatively low and residentially mobile until well after A.D.1000. The northern Rio Grande area's long continuity in settlement patterns, material culture, and architecture during this span offers a striking contrast with the "boom and bust" cycles associated with the history of contemporaneous villages in the Mesa Verde region.

Many of the earliest Developmental farming settlements have been documented in the well-watered settings of the Rio Grande and Jemez River below La Bajada, a towering basalt escarpment near present-day Cochiti Pueblo (Gerow 1999; Lange 1968; Vivian and Clendenon 1965). Population appears to have increased gradually in this middle Rio Grande area, and it now appears that these communities played an important role in the better-known post-900 population expansion in the northern Rio Grande region (Boyer et al. 2010; Lakatos 2006, 2007; Lakatos and Post 2012; Schmader 1994; Stubbs 1954). The relatively low rate of population growth evident in tracing the histories of these increasingly agricultural populations from the seventh century on is somewhat "unexpected," given the large amount of potentially arable land in this region. In many other areas of the American Southwest, there was rapid population growth, what is sometimes called a Neolithic Demographic Transition, after the initial settlement of a new agricultural area by agrarian communities (Kohler et al. 2008:658).

The relative demographic stability of these early Developmental period communities suggests that there was a distinctly different adaptive strategy for this region as compared with other areas, such as the central Mesa Verde region (Wilshusen et al., Chapter 2). This lifeway allowed considerable foraging for wild resources in nearby riverine settings and adjacent mountain chains while perusing agrarian endeavors. This is particularly evident in faunal assemblages that commonly show relatively high indices of artiodactyls compared with lagomorphs and low frequencies of turkey (Akins 2011). Further, relatively robust femur development and limited humerus development strongly suggest higher individual mobility and less processing of agricultural produce compared with

contemporaneous agriculturally dependent populations to the west (Boyer et al. 2010).

Residential mobility and broad social networks reflect a very resilient adaptation. This pattern began to change late in the Developmental period (post A.D. 1175) when long-term, intrinsic population growth, followed later by demographic shifts off the Colorado Plateau, influenced the settlement pattern. Survey and excavation data from the middle Rio Grande Valley indicate a remarkable cultural stability evident in household and inter-household organization and economies when we examine the patterns in domestic architecture, site structure, settlement layout, and ceramic assemblages over time. The marked difference between the middle Rio Grande early Developmental sequence and the cultural developments for regions to the west and northwest on the Colorado Plateau suggest the existence of very distinct cultural trajectories, particularly during the post–A.D. 800 period. Our focus in this chapter is to describe the early Developmental cultural patterns in the middle Rio Grande region, as well as to offer some observations about why it had such a noticeably different early history as compared with other areas.

Geographic and Cultural Setting

The middle Rio Grande region, as defined here, is where most of the earliest ancestral Pueblo sites in the Rio Grande valley have been identified and studied (Figure 7.1). This area extends east from the Rio Puerco of the East to the Sandia and Manzano Mountains ranges and north from roughly Isleta to the Jemez Mountains and the La Bajada escarpment. This is similar to the distribution defined for the southern extent of the Northern Rio Grande region (Wendorf 1954; Wendorf and Reed 1955), the Albuquerque district (Cordell 1978), and the Albuquerque Valley and Santo Domingo Basin subdivisions (Lakatos 2007). The striking geological setting of the Rio Grande Rift valley offers a wide range in elevations and a variety of soil types and climatic regimes (Goff et al. 1996; Ingersoll 1979; Northrop 1961), which in turn allowed a surprising diversity in the region's ecosystems. This wide range of environmental and geologic resources provided a wide spectrum of economic opportunities for foragers as well as agriculturalists.

Elevation in the middle Rio Grande region ranges from around 4,500 feet (1,372 m) above sea level (ASL) along the Rio Grande south of Albuquerque, where there are Upper Sonoran life zones, to 8,000 feet (2,438 m) ASL in foothills near of the Pueblo of Jemez, with Transitional life zones. Both areas are close to mountain ranges which rise up to 11,000 feet (3,353 m) above sea level. This topography offers potential foragers ready access to riparian plant communities for food and tools, alluvial deposits for ceramic clays, and stone for flaked tool production. More xeric areas are found upslope from these riparian habitats, which include other material sources for lithic tools, as well as potential building materials. Above the Transition zone are the more alpine settings of the Canadian and Hudson environmental zones, which offer a different, yet limited set of wild resources. This rich and diverse environmental setting (Drager and Loose 1977), along with a relatively temperate climatic regime, offered the opportunity for a mixed agrarian-foraging economic strategy that allowed population to increase steadily, yet not rapidly, over the 300 years of the early Developmental period.

Lessons Learned over the Last Sixty Years: Chronologies, Material Culture Patterns and Variability, and Data Limitations

Prior to the 1930s, the northern Rio Grande was viewed as largely unoccupied until the late A.D. 1200s, when large masonry Coalition and Classic period villages began to form (Dean et al. 1994). The first explicit recognition of earlier occupations was documented by H. P. Mera (1935) in his synthesis of early pottery sequences. The identification of the earliest recognized ceramic phases was based on examination of surface collections from over 1,000 sites in the Rio Grande Valley, mostly from residential sites with single or multiple pit structures or small roomblocks. These sites, which had high frequencies of plain gray pottery along with San

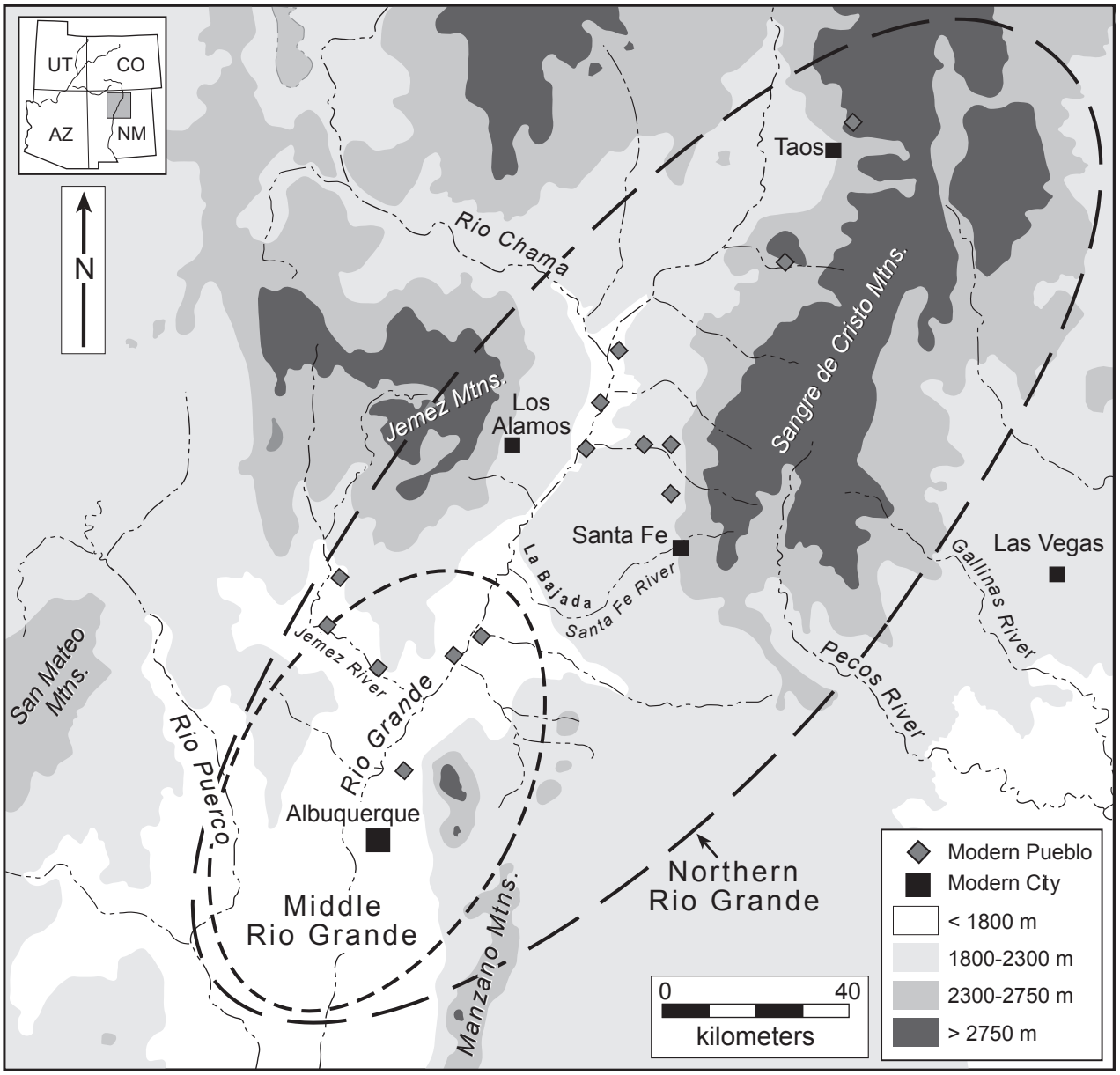


Figure 7.1. Location of the middle Rio Grande and northern Rio Grande regions.

Marcial Black-on-white in the southerly extent of the study area and Red Mesa Black-on-white (which Mera termed Chaco II) in the northerly extent, reflect the temporal sequence associated with the earliest ancestral Puebloan occupations within the Rio Grande corridor.

Renewed interest in these early sites began during 1950s and 1960s with investigations associated with various large pipeline and highway salvage projects and university field school excavations. These projects focused on identifying and quantifying material culture patterns of the Rio Grande Developmental period (Allen 1970; Allen and McNutt 1955; Peckham 1954, 1957; Reinhart 1967; Schorsch 1962; Skinner 1965; Vytlacil and Brody 1958). These early researchers also began to chronicle temporal changes and explain similarities and differences observed in artifact assemblages, site structure, and architecture within the broader context of Southwest archaeology (E. K. Reed 1946, 1956; Stubbs 1954; Wendorf 1954; Wendorf and Reed 1955).

In 1954, Wendorf proposed a chronology for the northern Rio Grande region that used temporal periods independent of, yet parallel to, the Pecos Classification to better categorize the observed differences in cultural material between this region and the Colorado Plateau. His Rio Grande Pueblo sequence spanned from A.D. 600 to 1600, preceded by a long aceramic period. He subdivided the Pueblo sequence into the Developmental, Coalition, and Classic periods. The Developmental period, which Wendorf placed between A.D. 600 and 1200, is further subdivided by some researchers into the early Developmental (A.D. 600 to 900) and late Developmental (A.D. 900 to 1200) (Stuart and Gauthier 1981). Our focus here is on the early Developmental (A.D. 600 to 900), which generally corresponds with the Basketmaker III and Pueblo I periods of the Pecos Classification. However, recent investigations indicate beginning dates possibly as early as A.D. 400 for the early Developmental (Post 2002a; Schmader 1994; Walth 1999).

Wendorf and Reed (1955:138) recognized that the earlier aceramic occupations "represent a considerable span of time" yet avoided classifying any part of the preceding 6,000-year aceramic adaptation as Basketmaker II, given the lack of evidence of agriculture during this period (Dello-Russo 1999; Post 2002a). In the northern Rio Grande, the apparent absence of a well-developed nonceramic agricultural complex, or Basketmaker II adaptation, common in areas to the west, cannot be explained by a lack of arable land since prime agricultural settings are present adjacent to seasonal streams and perennial rivers. In fact, these are the same environmental locations that were exploited by small-scale forager-farmers who practiced a mixed agricultural/hunting-and-gathering economy. Both past and recent research suggests that this behavior was evident sporadically by the fifth century and continuously after the seventh century (Lakatos and Post 2012).

Since 1960, and especially over the last 15 years, our ability to track specific cultural changes within the early Developmental has increased dramatically. Originally research was focused on refining the basic regional chronologies or recognizing different cultural influences by examining shifts in decorated pottery type frequencies and styles or variation in pit structure shape and construction (Bullard 1962; Ford et al. 1972; Frisbie 1967; Vivian and Clendenon 1965). More recent studies have expanded our understanding of local variability in early Developmental residential and material culture patterns (Akins et al. 2003; Brown 1999a, 1999b; Gerow 1999; Lakatos 2006; Lakatos and Post 2012; Post and Chapman 2010; Schmader 1991a, 1991b, 1994; Walth 1999; Van Pool and Van Pool 2003). These investigations also synthesized current and previous research to identify patterns and possible changes in early Developmental subsistence, settlement, and cultural affiliation. There is a remarkably wide range of variation in residential architecture and material culture over this time. Regardless of theoretical perspective, most researchers have recognized three broad characteristics of Rio Grande Developmental period occupations. One is that Developmental period domestic architecture and village plans were unlike contemporaneous settlements on the Colorado Plateau (Frisbie 1967; E. K. Reed 1956; Wendorf 1954). Another is that some Rio Grande pit structures contain both sacred and secular features (Adler 1993; Frisbie 1967; Lakatos 2007; Schmader 1994). And finally, many have noted that there is little appreciable change in the nature of artifact assemblages, architecture, or settlement patterns for nearly 600 years (Frisbie 1967; Lakatos 2006; Schmader 1994). Broad-based analyses of early Developmental settlements also indicate that a highly diverse set of material remains was utilized within a framework of traditional architectural, technological, and socioeconomic practices (Lakatos 2007).

There is less concordance regarding the cultural affiliation of these early Developmental groups who focused on farming and foraging within fields, riparian zones, and piñon/juniper-covered ridges. While some see early Developmental settlements as locally derived phenomena influenced by the expansion of Mogollon populations, with a much later migration of ancestral Pueblo peoples from the Colorado Plateau (Boyer et al. 2010; Frisbie 1967; Lakatos and Post 2012; Peckham 1984), others see

early Developmental settlements simply paralleling Basketmaker III/Pueblo I developments elsewhere (Gerow 1999), albeit at a slower pace. Given the overall diversity in social and environmental settings reported from surrounding areas, it stands to reason that the occupants of the middle Rio Grande Valley also developed and maintained a distinct cultural pattern (Stubbs 1954; Wendorf 1954).

While all of these previous studies provide important evidence about early Developmental occupations in the northern Rio Grande, the diversity in research goals and practices in some ways constrains the comparisons that can be made with these data to better understand early Developmental settlement patterns and communities. For instance, many large-scale excavations were conducted prior to the development of refined chronometric techniques such as radiocarbon and archaeomagnetic analysis, and therefore can only be broadly placed in time. While research projects conducted during the late twentieth century benefited from these relatively new dating techniques, the scope of work tended to be constrained by right-of-way limits or did not focus on the extensive examination of extramural areas through hand excavations.

The various inventory methods and research interests used over the past 60 years have influenced the assignment of ceramic types, site function, and temporal information reported in the regional database (New Mexico Cultural Resource Inventory System [NMCRIS]). For example, although Mera's initial survey likely targeted visible residential or habitation sites, few details about site structure were recorded. In contrast, later surveys that documented residential sites with robust surface manifestations recorded both the ceramic counts and the descriptions of structural elements such as scatters of rubble or depressions. Phase-based temporal information has been generally based on observed decorated pottery types, which usually comprise less than 1 percent of any early Developmental surface ceramic assemblage. Finally, many surveys assigned spatially extensive (3,000–7,500 m^2) scatters of fire-cracked rock, lithic debitage, ceramics, and multiple hearths to the A.D.700–900 period, clearly indicating a robust occupation, but these sites were not always recorded in the database as having structural components, even though experience suggests that they probably do have them. Other factors limiting our understanding of early components include the alluviation of the last millennium, present landownership status which prevents adequate documentation, and the general mantle of development or disturbance across much of the ground surface, particularly in the Albuquerque area. The combined effects of all these factors can hamper the interpretation of various aspects of the archaeological record such as continuity in settlement patterns, but perhaps the most difficult determination to make is to estimate prehistoric settlement size.

Settlement Patterning and Dispersed Communities: A.D. 650–950

Most sites assigned to the early Developmental period are located south of La Bajada along perennial watercourses such as the Rio Puerco of the East, Rio Jemez, and the Rio Grande and their major tributaries (Figure 7.2). Many are habitation sites situated above or adjacent to riparian environments, which allowed early Developmental households to practice a mixed foraging-farming economy (Lakatos and Post 2012). This riverine settlement pattern is not unlike those found in adjacent areas such as the eastern Mogollon Highlands, Rio San Jose, and the Rio Abajo regions, where a similar combination of pit structure architecture, ceramic containers, and agricultural products are reported (Bullard 1962; Marshall and Walt 1984; Peckham 1958; Post 2002b). In the Rio Grande, however, early Developmental households were likely continuously in contact with hunter-gatherers who still seasonally occupied the upland areas north of La Bajada and the eastern Plains. Regular contact between residentially mobile forager-farmers and hunter-gatherers potentially offered productive encounters through intermarriage, trade, or information exchange, as proposed by Lakatos and Post (2012). This parsimonious relationship provided the foundation for long-term, successful strategies that allowed the exploitation of a diverse and widely distributed resource base (Boyer et al. 2010).

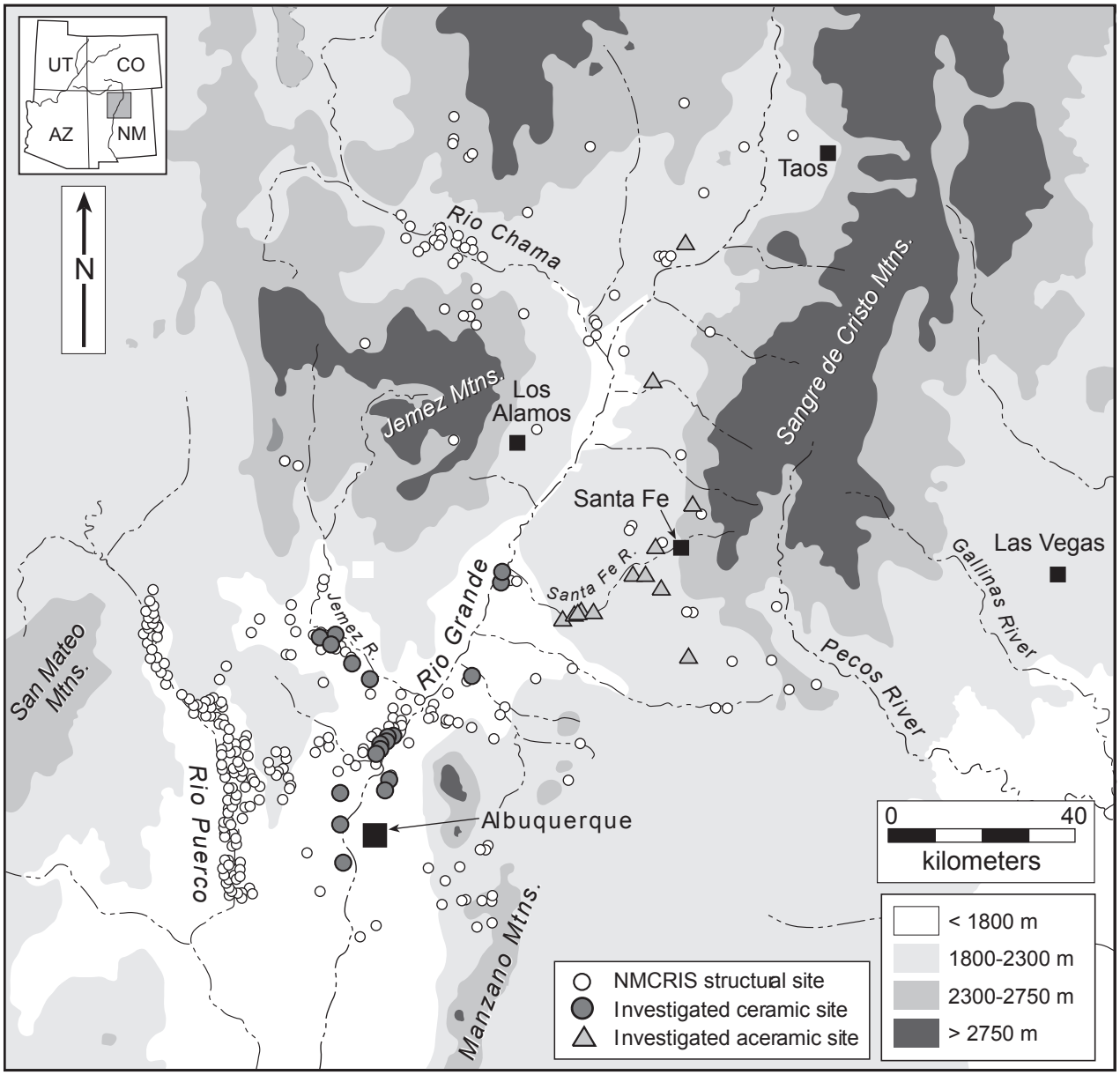


Figure 7.2. Documented early Developmental (A.D. 400–900) sites in the northern and middle Rio Grande regions.

Given the relatively unrestricted environmental and social settings of these early sites, it is not surprising that hamlets did not aggregate into well-defined villages during this time (see Wilshusen et al., Chapter 2, for a very different sequence in the central Mesa Verde region). Instead, variations in domestic architecture, ceramic assemblages, and extramural features suggest the maintenance of relatively high levels of residential mobility and social exchange throughout the early Developmental period. In habitation structures, for example, a wide range of variation in the frequencies and types of intramural features and in their overall spatial organization is evident in the 64 excavated structures for which information is available. Also reported was limited evidence for remodeling or renovating pit structures, which indicates that many households or related households chose to move and build new facilities rather than reinvest in existing dwellings. This suggests populations anticipated moving every

20–25 years, perhaps coinciding with diminishing foraging resources (Cameron 1990b; Varien 1999). A similar settlement pattern was recently described for the Middle Chevelon Creek region of northern Arizona, in that the Rio Grande valley was "land intensive" (Peeples et al. 2006:11) which allowed households to continually move in close proximity to wild resources and tillable land. This strategy continued until increased population size restricted access to foraging areas and prime arable land, compelling organizational and settlement changes including greater dependence on agriculture and village aggregation during the post A.D. 1250 period (Orcutt 1991).

Yet despite the wide temporal, spatial, and morphological range of variation among habitation structures, there were many shared features. Some of this shared patterning likely reflects the technological constraints of building materials and techniques, such as wall construction and use of posts to support a roof superstructure. Other common features, however, suggest a shared background or knowledge about architectural design that likely reflected, and continually met, the social expectations of households, villages, and communities.

Site Layout and Structure Form

In general, activity areas at early Developmental residential locations tended to be positioned to the east and southeast of primary domiciles, with extramural contexts containing palisades, thermal features, storage features, isolated rooms, or ramadas (Figure 7.3). Activity areas consisted of small to large, burned and unburned processing and cooking facilities clustered together and likely used in a wide range of daily subsistence activities (Badner 2010a). Large unburned pits identified within activity areas may represent temporary storage or holding facilities used in staged resource preparation or processing of a specific resource type (Lakatos and Post 2012). Other large unburned extramural pits, interpreted as storage cists, were spatially associated with individual domiciles. Badner (2010a) examined intramural and extramural storage volumes

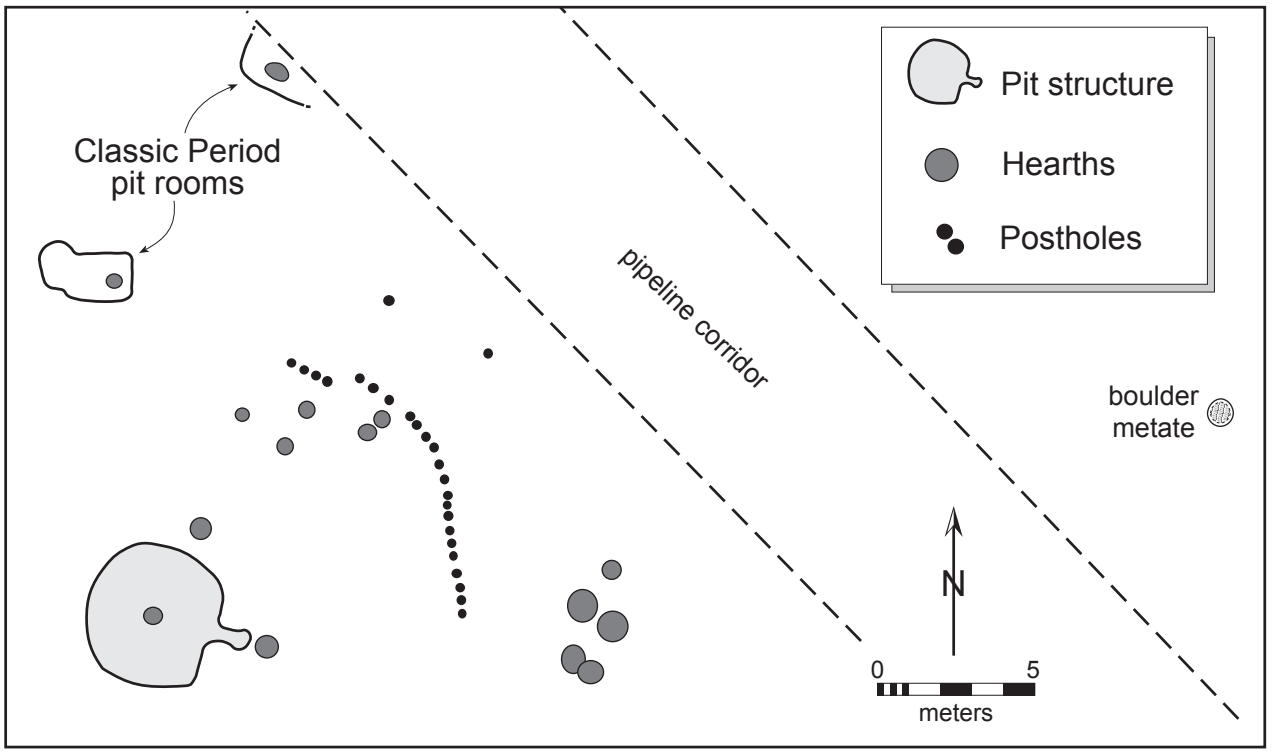


Figure 7.3. Plan map of an early Developmental site (LA 25852) in the middle Rio Grande region. Site occupation is placed to approximately A.D. 800–900. Adapted from Hammack, Ferg, and Bradley 1983.

Table 7.1. Early Developmental pit-structure characteristics by time period

Structure attribute	Presence/Absence	A.D. 600–700 Count (%)	A.D. 700–800 Count (%)	A.D. 800–900 Count (%)	All periods Count (%)
Room shape (round)	Present	10 (76.9)	21 (84)	12 (70.6)	43 (78.2)
Structure containment (all earth)	Present	13 (92.9)	22 (88)	15 (83.3)	50 (87.7)
Roof posts	Present	14 (100)	23 (92)	16 (88.9)	53 (93)
Separate vent shaft	Present	4 (28.6)	16 (64)	12 (66.7)	32 (56.1)
Above-floor vent opening	Present	3 (21.4)	13 (52)	9 (50)	25 (43.9)
Vent sill	Absent	11 (78.6)	15 (60)	7 (38.9)	33 (57.9)
Damper	Absent	12 (85.7)	22 (88)	13 (72.2)	47 (82.5)
Circular hearth	Present	11 (78.6)	23 (92)	9 (50)	43 (75.4)
Hearth collar	Present	6 (42.9)	16 (64)	13 (72.2)	35 (61.4)
Ash pit	Present	3 (21.4)	21 (84)	7 (38.9)	31 (54.4)
Sipapu	Absent	11 (78.6)	17 (68)	14 (77.8)	42 (73.7)
Wall niche	Absent	10 (71.4)	19 (76)	13 (72.2)	42 (73.7)
Enclosed space (less than or equal to 28.5 m^2)*	Present	12 (85.7)	23 (92)	14 (77.8)	49 (86)
Axis less than or equal to 149 degrees (n = 48)*	Present	8 (80)	20 (87)	13 (86.7)	41 (85.4)
Totals		14	25	18	57

* Mean plus one standard deviation

for 206 features documented on the Peña Blanca Project and found that the average storage capacity at early Developmental sites was relatively low (6.7 m^3) compared with contemporaneous agrarian communities on the Colorado Plateau. Diverse feature types within activity areas and low storage volume suggest that these facilities were built, used, and controlled by single households. The limited investment in storage facilities indicates that there was little interest in the accumulation of surplus to buffer against less productive years.

The basic architectural footprint of an early Developmental residential pit structure consisted of a round, moderately deep (0.5–1.5 m) pit structure with a separate or detached ventilator shaft oriented to the east or southeast and connected to the interior of the structure by an above-floor vent tunnel. Most had a central thermal feature bordered by an adobe collar. Structures typically had less than 29 m^2 of enclosed space. Through time, the presence of an ash pit fluctuated, but the occurrence of a ventilator increased. Wall niches, sipapus, and dampers were uncommon in structures throughout the early Developmental period (Table 7.1). These data update, but still generally support, the trends in architectural design originally presented by Lakatos (2006).

As with floor-plan configuration, use and abandonment practices did not change significantly over this period. Most structures had only a single floor surface, with evidence of only minor maintenance or remodeling events. Yet others had multiple surfaces and chronometric data suggesting occupation histories of over 60 years. This later pattern suggests continuity in land use (Lakatos and Post 2012). The major wooden structural elements usually appear to have been salvaged at the time of abandonment, but in some examples the secondary roofing material was burned. In some cases, complete animals or disarticulated faunal elements, formal tools, or ornaments had been placed in or around the central hearth, ash pit, or ventilator complex, perhaps as offerings. Although placement of some materials within a structure at the time of abandonment seems to represent a common behavior, the type, frequency, and context of these items were highly

variable (Lakatos and Post 2012). Structure 2 at Site LA 3128 offered a particularly interesting example of abandonment behavior. A pile of burned corn was found on the floor, and exotic materials such as turquoise, marine shell, freshwater shell, and formal tools were recovered throughout the fill, which suggests the continued deposition of offerings as the structure filled (Schmader 1991b). The observed differences in structure use and abandonment could also represent variability in household associations or, alternatively, differences in the nature of ritual observance.

During the early Developmental period, it is difficult to identify integrative facilities or community structures—indeed, even communities are difficult to recognize in this time period. Hamlets were widely dispersed and rarely centered on a single landscape. Identification of community facilities using typical identifiers such as size threshold greater than 30 m^2 is also not a reliable indicator of structure function, as many larger structures retain domestic features suggesting to some researchers they also functioned as domiciles (Frisbie 1967; Gerow 1999). Instead, the integrative nature of some structures may be signaled by the presence of a specific intramural suite of features and a structure's larger size relative to nearby contemporaneous structures (Frisbie 1967). Another study demonstrated that structures with a hearth–ash pit complex were more likely to have a sipapu and were generally larger than those without this feature suite, which suggests they may have functioned as low-level integrative facilities serving several related families (Adler 1993; Lakatos 2007).

Dispersed Communities

It appears that during the early Developmental period, regional population levels remained relatively low (Boyer et al. 2010; Cordell 1978; Dean et al. 1994). Using a 15-year site use-life (Duff and Wilshusen 2000; see Boyer et al. 2010 for a detailed discussion of population reconstruction methods), regional populations fluctuated between about 650 and 1,100 people. This works out to roughly 108 to 184 households of six individuals each over the course of 300 years ca. A.D. 600–900. The highest number of occupied households (216) occurred during the A.D. 700–800 time interval. Using a 20-year site use-life, the estimated population (875–1,460) and number of households (144–245) increase, with the maximum number of people (1,730) and households (288) occurring between A.D. 700 and 800. The subsequent population increase in the middle and northern Rio Grande regions during the post A.D. 900 period (Figure 7.4) occurred just as the population of the central Mesa Verde region was rapidly declining.

Following Boyer et al. (2010), hamlet size has been shown to range from 6 to 20 people (Adler 1994; Kintigh 1994) with communities of 100–200 people using residential or integrative structures similar in size (30 m^2) to early Developmental structures in the northern Rio Grande (Adler 1989:37). Using the minimum figures presented above, we estimate that during the A.D. 600–700 period, 5 to 18 hamlets were integrated into 3 to 7 communities. Many of the excavated structures dating to this time period were identified in the Albuquerque Valley, where extensive survey and excavation, particularly by Frisbie (1967) and Schmader (1991a, 1991b, 1994), indicate a long occupation sequence and perhaps the establishment of one of the earliest communities to form in this region.

Located near Corrales, north of Albuquerque, The River's Edge community was comprised of several dispersed hamlets situated along the west bank of the Rio Grande around what appears to have been an integrative structure. Structure 4, or the "protokiva" at LA 57025 (Artificial Leg, Site II) was central to several hamlets occupied during the late A.D. 600s (Frisbie 1967:66) and was a likely locus for community gatherings (Figure 7.5). Offering nearly 42 m^2 of enclosed space, Structure 4 contained features interpreted as a lateral entryway opposite the vent, an ash pit, and a sipapu. A trough was identified around the unlined hearth, which may represent a remodeled hearth collar. At abandonment, this structure was dismantled and then burned. Numerous pieces of exotic material, flaked stone tools, and ground stone tools were recovered from the fill. Unlike Structure 2 at LA 3128 described above, it remains unclear if these items

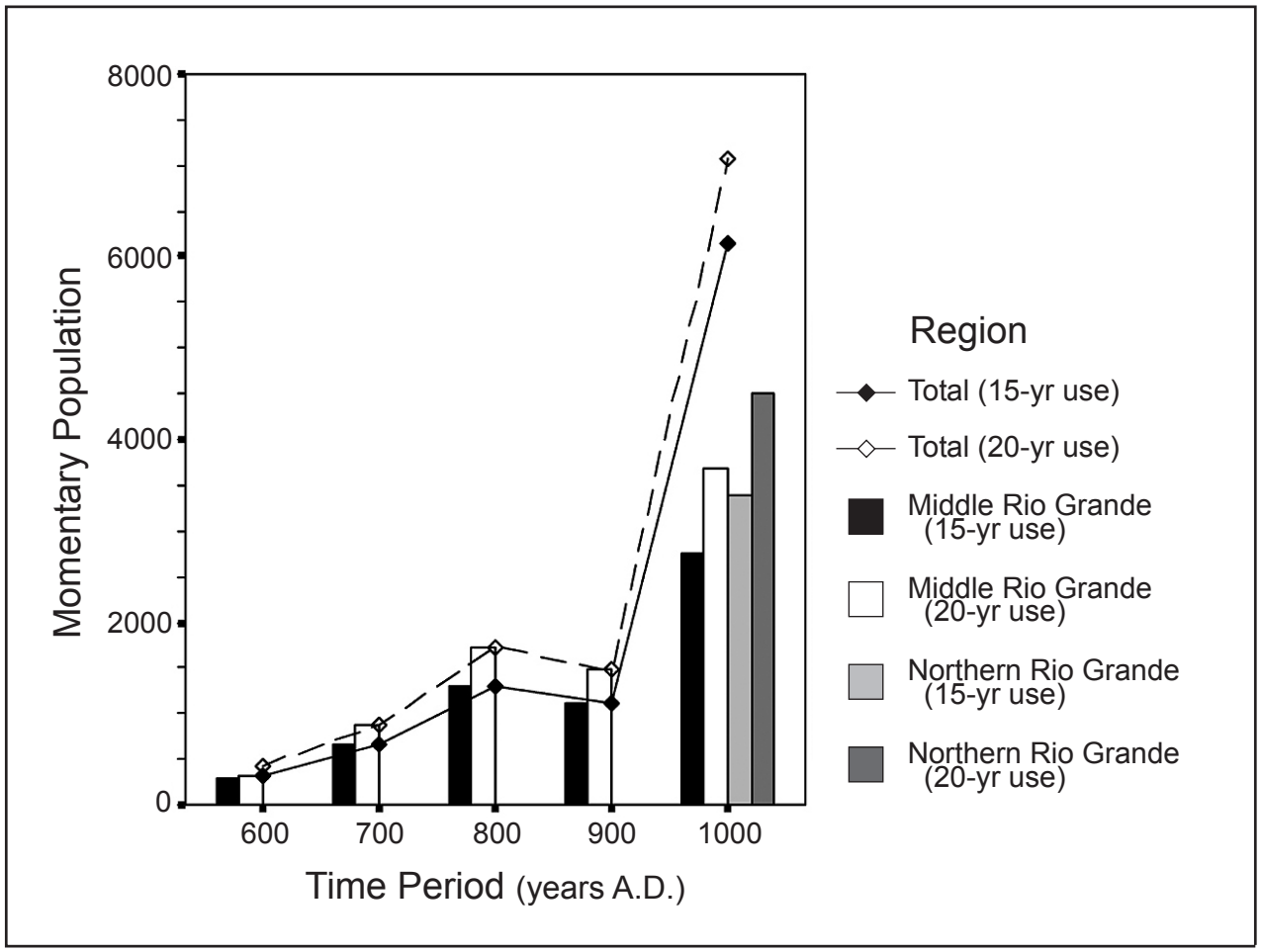


Figure 7.4. Momentary population estimates for the middle Rio Grande region, A.D. 600–1000.

were recovered from throughout the fill or just from the lower fill close to the floor levels. The recovery of shell and other exotic materials from the lower fill levels could also suggest they were cached in the roofing elements and landed just above the floor with the collapse of the roof (Lakatos and Post 2012).

By A.D. 800, there were between 11 and 36 hamlets that were integrated into 7 to 13 communities established in three spatially discrete riverine settings in the middle Rio Grande region along the Jemez River, Albuquerque Valley, and in the Santo Domingo Basin at the confluence of the Santa Fe River and the Rio Grande. A possible slight population decline during the ninth century is suggested by an estimated 9 to 31 hamlets or 6 to 11 communities located mainly in the Albuquerque Valley and in the Santo Domingo Basin. By A.D. 1000, occupations in the Albuquerque Valley appear to have dispersed, while areas north of La Bajada to present-day Velarde (i.e., the northern Rio Grande region) were beginning to be settled by ancestral Pueblo groups (Figure 7.6).

The sudden rise of population during the post–A.D. 900 period, coupled with expansion into the areas north of La Bajada that previously were unsettled by ancestral Pueblo people, suggests that the A.D. 800–900 figure may be artificially low. This may be due to a lack of temporally sensitive artifacts used to date sites of that century. Alternately, the sudden rise in population during the A.D. 900–1000 period could represent an influx of related early Developmental groups from the Rio San Jose, Puerco of the East Valley, and Rio Grande Valley

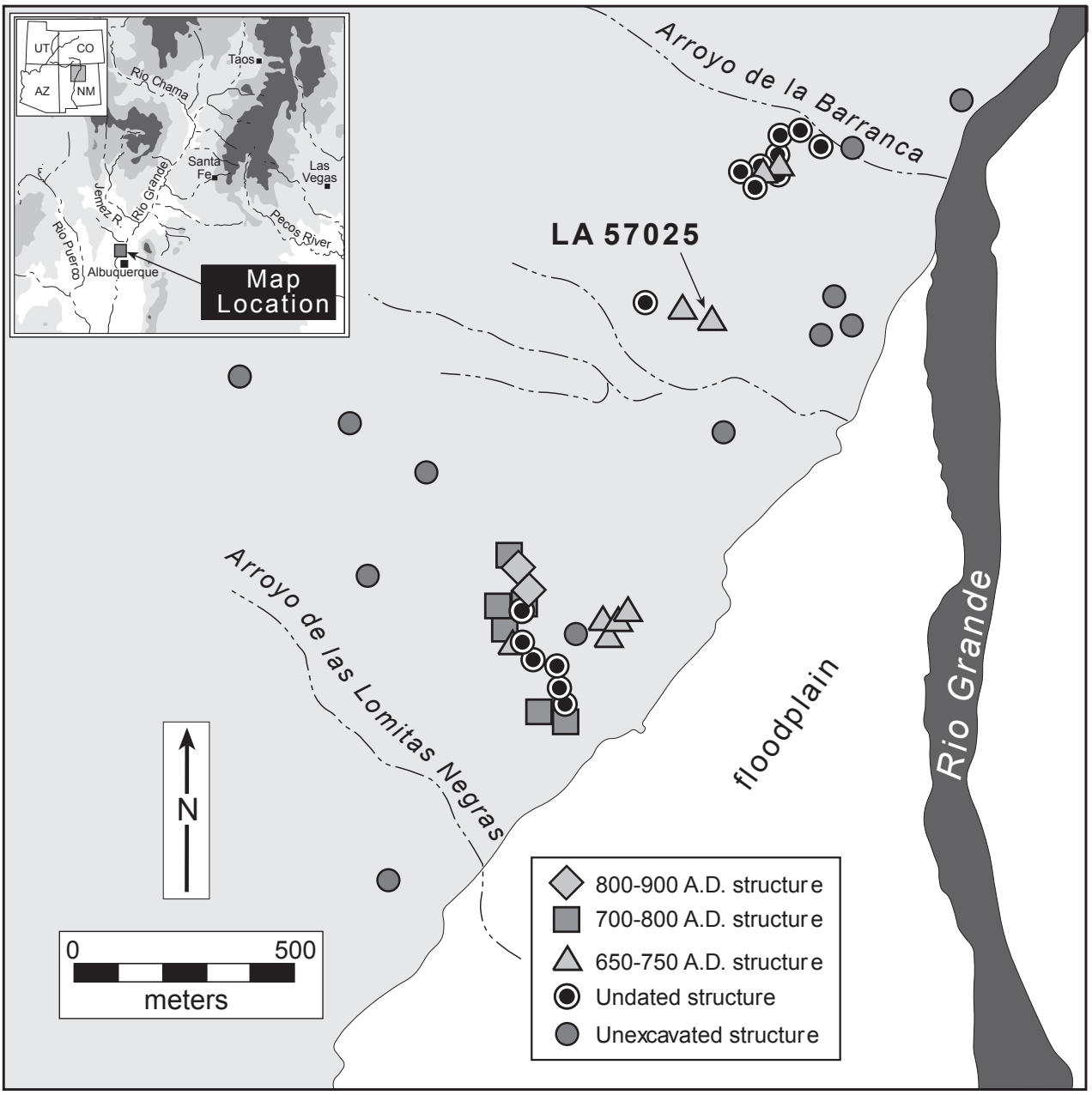


Figure 7.5. The River's Edge community, and early Developmental cluster of sites near Corrales, New Mexico.

into these more northerly areas during this time or possibly even immigrants from the San Juan Basin. This argument is supported by the presence of Red Mesa Black-on-white at many of these newly founded sites north of the Santa Fe River (Mera 1935; Wiseman and Olinger 1991).

It is interesting to point out that this demographic shift was occurring at the same time as early great house communities were forming in the Chaco region (Wilshusen and Van Dyke 2006; Windes and Van Dyke, Chapter 5). Rio Grande populations may have responded to a possible demographic threat posed by the population influx into the Chaco region just to the west by expanding into the relatively underpopulated northern Rio Grande region. Whether a response to intrinsic population growth in the middle Rio Grande or spurred on by the southerly movement of populations from the Four

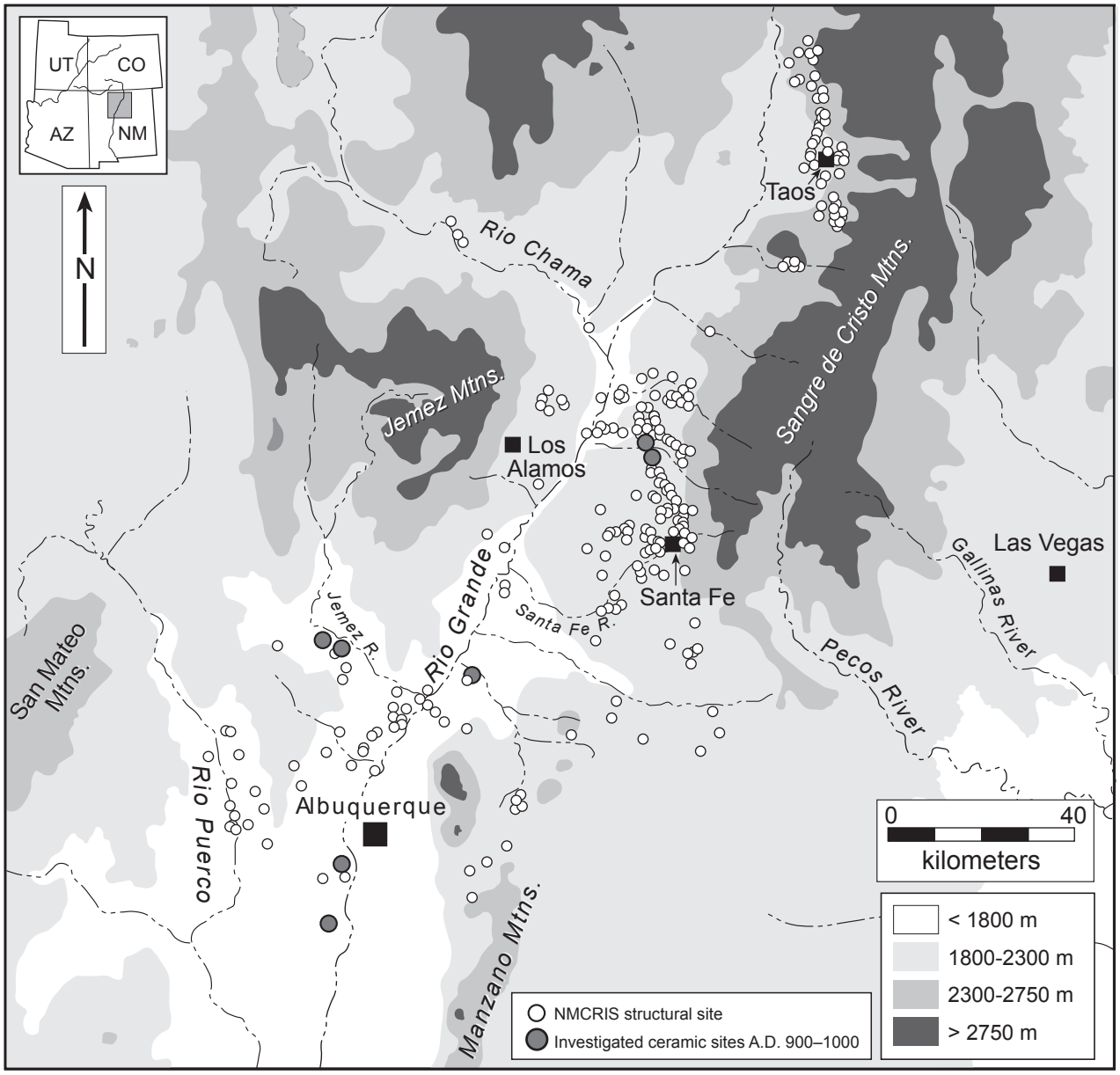


Figure 7.6. Documented late Developmental (A.D. 900–1200) sites in the northern and middle Rio Grande regions.

Corners area into the Chaco region (Wilshusen and Ortman 1999), this demographic shift clearly reflects the movement of at least some corporate groups living along the Rio Puerco of the East, Jemez River, and Rio Grande to the north. These new lands offered riverine environmental settings similar to those of the middle Rio Grande and would have permitted people to maintain an already well-established mixed economy and dispersed community pattern.

Early Developmental Ceramics

San Marcial Black-on-white, as described by Mera (1935), has long been considered critical to defining the earliest ceramic phases in the middle Rio Grande region. Mera originally identified San Marcial Black-on-white at sites located between Socorro and Truth or Consequences, New Mexico. Ceramic descriptions from early sites in the Rio Abajo region have been presented by Marshall

and Walt (1984), where they, following Mera, assigned sites to the San Marcial phase based on the dominance of early Mogollon Brown ware types along with San Marcial Black-on-white in assemblages. However, most recent discussions of early Developmental period or San Marcial phase pottery focus on ceramics recovered or observed from sites in the vicinity of Albuquerque (Condie 1987; Frisbie 1967; Schmader 1994; Skinner 1965; Vivian and Clenedan 1965), the Puerco of the East Valley (Hurst 2003; Post 2002b), the Gallina Mountains (Wilson 1995), and the Jemez and Rio Grande Valleys near the modern pueblos of Zia and Cochiti, respectively (Allen and McNutt 1955; Gerow 1999; Hammack et al. 1983; Post and Chapman 2010; Vytlacil and Brody 1958). San Marcial Black-on-white ceramics from these areas may differ from those farther south by the presence of lighter and less silty pastes, more similar to those noted in ceramics from the Four Corners country of the Colorado Plateau.

The Peña Blanca Project, located near the Pueblo of Cochiti, recovered a large early Developmental ceramic assemblage associated with dated contexts, and the analysis of this assemblage (Post 2010; C. D. Wilson 2010) offers an excellent example of the characteristic changes of this period. The Peña Blanca sites consisted of several pit structures dispersed across the dissected Pleistocene gravel terraces flanking the Rio Grande near its confluence with the Santa Fe River. They represent the northernmost early Developmental ceramic occupations excavated so far, and yet these ceramic assemblages have compositions similar, if not equivalent, to those found at contemporaneous sites reported from the Albuquerque Valley and Jemez River areas to the south. That is, the vast majority of pottery recovered from early Developmental components at Peña Blanca is plain unpolished gray ware, which in most examples comprises more than 90 percent of the assemblage. Textured gray wares, such as neck-banded, were extremely rare until after A.D. 900 (Figure 7.7). Most gray wares, whether plain or textured, were made with a very white-firing paste and were tempered with coarse sand. White wares tend to represent only 3 to 8 percent of the pottery in these A.D. 600–900 assemblages. Almost all white wares have very white pastes with sand and/or shale temper similar to those noted in the gray wares, and those with discernible decorations are classified as San Marcial Black-on-white. Many of the San Marcial Black-on-white sherds exhibit fairly bold design styles and commonly have reddish or brownish pigments and oxidized slips, reminiscent of both early Mogollon and Cibola decorated forms produced during the Basketmaker III and Pueblo I periods. These bold design elements are often oriented in intersecting, chevron, rectilinear, or curvilinear patterns covering much of the vessel surface.

Of particular interest are relatively high frequencies of decorated pottery with a temper and paste commonly noted in San Marcial Black-on-white, but whose designs were executed in a red paint over a buff to brown surface. The overall effect of the design patterns resembles those noted on early Mogollon types and may reflect an overlap in the manufacture of San Marcial Black-on-white and early Mogollon painted types more clearly observed in the Rio Abajo region to the south. This south-to-north connection, also potentially observed in the settlement and perhaps architectural patterns, is further supported by low frequencies of pottery with local pastes and sand temper, and decorated with red designs over brown to buff oxidized surfaces similar to Mogollon Red-on-brown. Also of interest are unpainted red wares which constitute nearly 5 percent of the pottery in early Developmental ceramic assemblages from Peña Blanca Project sites. This is a higher than normal percentage of red wares for this period. These red ware sherds have pastes similar to those noted in gray and white wares, but are covered with a thin, bright red slip and display combinations of traits almost identical to those described for Tallahogan Red from early sites in the Four Corners region (Daifuku 1961; Reed et al. 2000). Mogollon brown wares total less than 3 percent of the assemblages and are represented by both Alma Plain and Mogollon Red-on-brown. There also appears to have been very a small amount of polished utility ware produced from light-firing clays, further indicating some overlap

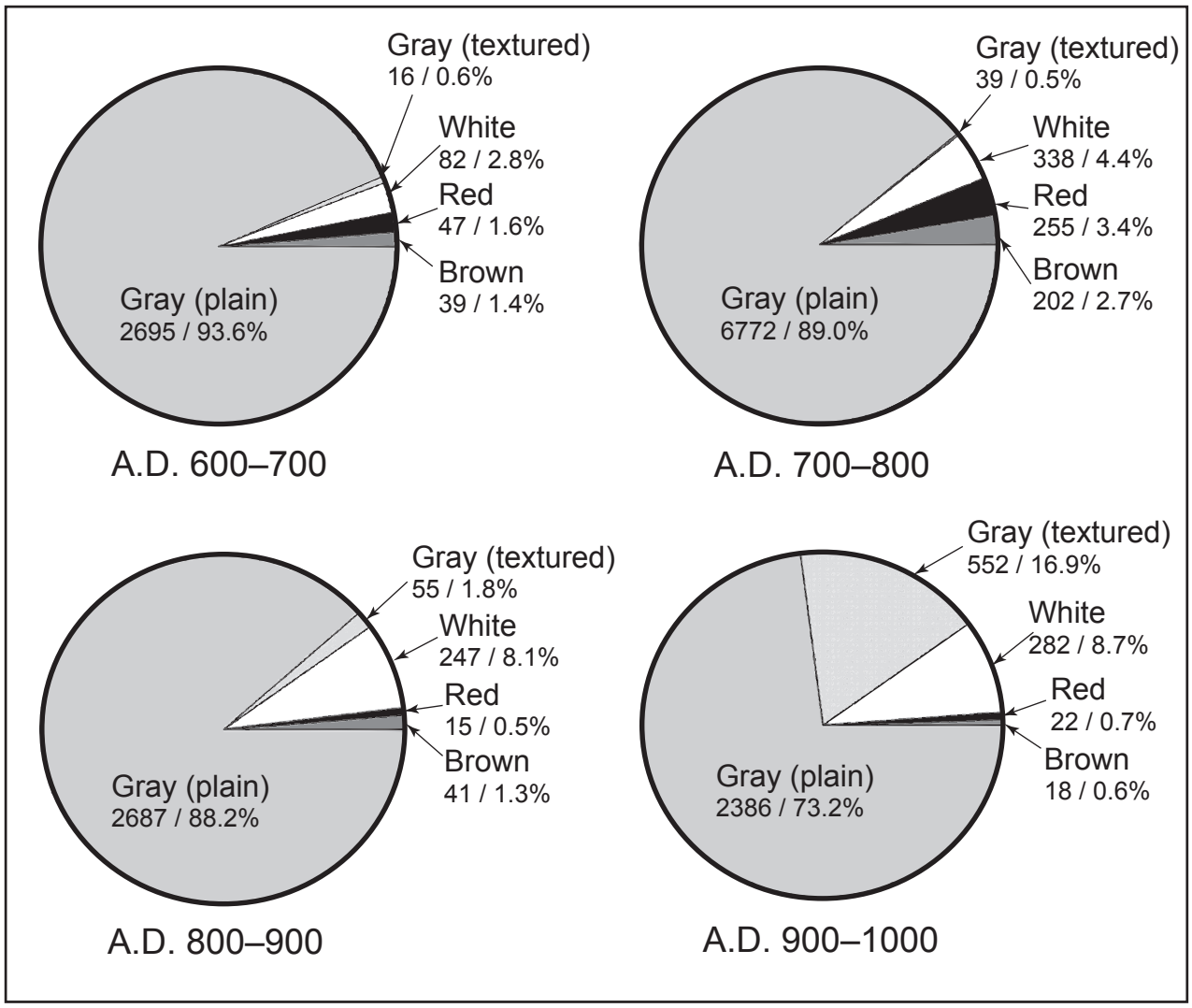


Figure 7.7. Ceramic ware frequencies, A.D. 600–1000, composite sample of 23 components from 19 sites.

in manufacture technology. These are commonly associated with both the Cibola and Mogollon traditions (Figure 7.8).

Temporal Trends in Ceramic Manufacture

Marshall and Walt (1984) tentatively date the San Marcial phase between A.D. 300 and 800, although assemblages dating to the earlier part of this span do not contain San Marcial Black-on-white. For example, early ceramic occupations in the middle Rio Grande, commonly referred to as Basketmaker III, were postulated to date sometime between A.D. 400 and 650. Temporal placement was based on the presence of plain gray wares along with pottery characterized as Fugitive Red and Slipped Brown wares. The subsequent period (late Basketmaker III/early Pueblo I) was thought to begin around A.D. 700 and was characterized by the appearance of San Marcial Black-on-white along with plain gray and brown ware pottery common on earlier sites. Ceramic assemblages composed of low frequencies of decorated white wares and high frequencies of plain gray and brown ware pottery continued until around the early A.D. 900s when gray ware types with neck-banded treatments began to be consistently manufactured. Sometime during the A.D. 900s, Red Mesa Black-on-white appears to have quickly replaced San Marcial Black-on-white as the dominant decorated pottery type.

The trends represented in ceramic types and ware groups found in Peña Blanca assemblages

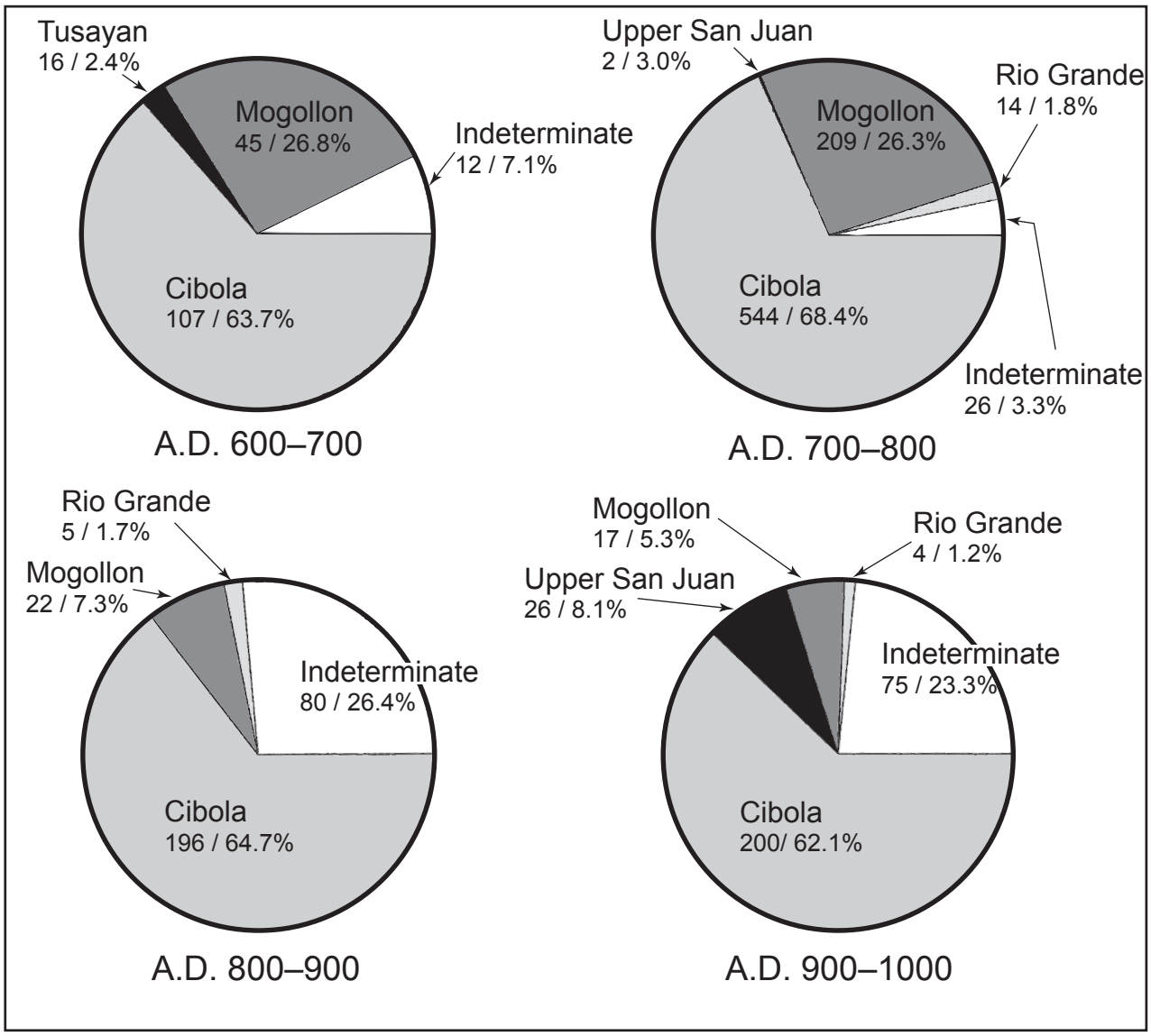


Figure 7.8. Frequencies for ceramic tradition assignments, A.D. 600–1000, composite sample of 23 components from 19 sites.

suggest that the various contexts are roughly contemporaneous. With the possibility of an earlier date for one feature, archaeomagnetic and radiometric samples from early Developmental contexts investigated during the Peña Blanca Project indicate an occupation from about the late A.D. 600s to middle A.D. 800s. These dates are earlier than predicted for the beginning of this phase, but later than Curtis Wilson (1995) has suggested, particularly if this complex expanded from the south where it may have first developed. Early Developmental sites investigated during the Peña Blanca Project are largely contemporaneous with the Pueblo I period as defined in the Four Corners, despite the absence of Pueblo I neck-banded types, which only became increasingly more common in assemblages beginning in the ninth century. The continued production of plain gray and brown wares in the middle Rio Grande may indicate maintenance of traditional manufacturing practices during that time.

Reminiscent of the variability seen in site layout and pit structure construction practices, early Developmental pottery assemblages were also highly variable. There are, of course, broad commonalities in type frequencies at contemporaneous sites, with many early assemblages characterized

by the presence of plain gray, San Marcial Black-on-white, Tallahogan Black-on-red, and low frequencies of Alma Plain. The temporal placement of early Developmental assemblages at Peña Blanca and many other projects are supported by ^{14}C and archaeomagnetic dates that largely fall between A.D. 600 and 900 (Schmader 1991a, 1991b; Walth 1999). Assemblages dating to the very end of the early Developmental period (ca. after A.D. 850) can be more easily identified by relatively higher frequencies of textured gray wares and the presence of Red Mesa Black-on-white.

A key problem that remains in the pottery chronology for this area is our present insecurity in placing occupations between A.D. 600 and 700 based on ceramic assemblages, as well as assigning them to earlier temporal periods. Early brown ware pottery without white wares has been widely documented across the Southwest (Reed et al. 2000), and the earliest time spans for the San Marcial phase (Marshall and Walt (1984) in the Rio Abajo region had ceramic assemblages containing only plain Mogollon brown ware types. A ceramic group defined for the Puerco of the East Valley (Hurst 2003) consisting of unpolished white assigned to La Plata Black-on-white and San Marcial Black-on-white may bridge the early brown ware occupations in the Rio Abajo and the later gray ware assemblages dominating the early Developmental occupations near Cochiti. Although Mogollon brown wares were not reported in these Puerco of the East assemblages, technologically similar plain utility ware types similar to those occurring in the middle Rio Grande region were present. However, to our knowledge, a good transitional assemblage between the early brown wares and later gray and white wares remains to be documented in the Middle Rio Grande region.

The Rio Grande Early Developmental Period and the Early Pueblo Period of the Colorado Plateau

Archaeologists have long struggled to make sense of the early Developmental culture history of the Rio Grande in relation to the early Pueblo developments just to the west and northwest on the Colorado Plateau. There were some initial shared features, but almost from its beginnings the cultural adaptations and traditions of the Rio Grande area took a different course than those of the late Basketmaker and Early Pueblo cultures west of the Continental Divide. Although the settlement patterns, material culture traditions, and subsistence practices seen in the two areas in the eighth and ninth centuries were quite distinct from one another, by the tenth century there were remarkably contemporaneous shifts in population and ceramic styles in both areas, which suggests there was less "distance" between the two than some might think. In this brief comparison, we summarize some of our earlier proposals about early Developmental culture history and relate them to the prehistory of our better-known neighbors to the west and northwest.

A comparison of the earliest ceramic assemblages of early Developmental sites in the Rio Grande with those of late Basketmaker sites in the Four Corners region shows much in common between the two areas. Interregional similarities in late sixth-century and early seventh-century assemblages include the dominance of plain gray wares, a distinct white ware with designs derived from early Mogollon decorated forms, unpainted slipped red wares, and the presence of Mogollon Brown wares. These assemblage characteristics were found over a wide geographic area, which includes most of the middle Rio Grande and parts of the Colorado Plateau (C. J. Wilson 1995). Potentially contemporary assemblages similar to the Rio Grande's San Marcial phase sites have been documented at sites in the vicinity of Lupton (AZ), Tohatchi (NM), and the southern Chuska Valley (Kearns et al. 2000; Reed et al. 2000). Pottery assemblages from sites in the Tohatchi Flats area assigned to the Muddy Wash phase (A.D. 500 to 600) are characterized by high frequencies of plain gray ware with combinations of painted white, red slipped, and Mogollon Brown wares, very similar to those characteristics noted at slightly later Developmental sites from the middle Rio Grande.

The earliest ceramic occupations in the middle Rio Grande region occurred during the A.D. 600s

and were almost exclusively located south of La Bajada. They are best known from sites north of Albuquerque (Condie 1987; Frisbie 1967; Schmader 1994; Vivian and Clenedan 1965) and settlements in the Puerco of the East Valley (Hurst 2003), along the Jemez drainage (Hammack et al. 1983), and in the northern Santo Domingo Basin (Post 2010). Assigned to the San Marcial phase, these occupations seem to have been part of a riverine settlement pattern that extended over large segments of the Rio Grande Valley and adjacent drainages. This settlement system largely reflects a northeastern extension of the Mogollon pit house phases but is distinguished from other early Mogollon phases architecturally and by the occurrence of San Marcial Black-on-white, which represents a true white ware. The distinction between Mogollon decorated pottery and San Marcial Black-on-white is reflected by sand temper, light-colored pastes, and white surface finishes. Yet San Marcial Black-on-white is more likely to exhibit Mogollon stylistic influences, particularly as compared with types originally used to define the "Anasazi" white ware tradition. In the northern Santo Domingo Basin, these settlements were recognized by residential occupations and ceramic assemblages that contained San Marcial Black-on-white along with varying frequencies of early Mogollon brown ware types yet were almost always dominated by plain gray wares, typical of Basketmaker III sites in the Colorado Plateau to the west.

Tainter and Plog (1994) have offered a model for how the cultural pattern of the early Developmental sites of the Rio Grande might have come into being. They suggest there were two strong early patterns, one centered in the San Juan Basin, which represented the predecessor of the Chaco system, and the other focused on a southern riverine-oriented system, which archaeologists recognize as the Mogollon. Early developments in the Rio Grande, with its combinations of Cibola "Anasazi" and Mogollon pottery influences, took inspiration from both patterns, and the appearance of pit structure architecture, ceramic containers, and agriculture in the middle Rio Grande between the late A.D. 600s and early 700s seems to represent the resettlement of this area by forager-farmers (Dello-Russo 2008). The very distinctive geographic setting of the Rio Grande offered the possibility for occasional, but not sustained, interaction with both areas. It also was sufficiently productive and diverse to allow residentially mobile farmer-foragers a variety of ways to make a living. The combination of the "adaptive diversity" of these groups (Simms et al. 1997:790) with an early history influenced by both Cibola and Mogollon traditions resulted in what Tainter and Plog called a "weak" pattern. In short, there were varying combinations of cultural material that were neither Cibola nor Mogollon as traditionally defined, which reflects one of the patterns sometimes referred to as "Mogosazi" (Tainter and Plog 1994). The high degree of spatial variability in frequencies of Mogollon versus Cibola pottery types across the local landscape may indicate that these influences continued, but that the culture of the middle Rio Grande developed without "strong" ties to groups that may be placed neatly into one of these different cultural traditions. Instead, the people of this region fashioned social identities tied to their surrounding social and natural settings. The middle Rio Grande population grew at a slow rate through the ninth century. The continued use of pit structures, plain utility pottery, and the limited emphases on storage all were part of a strategy that resulted in the frequent relocation of residential sites and the maintenance of a sustainable socioeconomic system.

Descriptions of early Developmental contexts indicate that broad trends in settlement pattern, architecture, and ceramic assemblages were remarkably similar over a wide geographic area between the seventh and ninth centuries. During this time, households were residentially mobile yet maintained regionally distinct vernacular architectural patterns indicating the presence of an underlying traditional or social-economic structure that integrated households, hamlets, and communities (Lakatos 2007). Population remained relatively low, and occupation of the region was stable until the demographic shift in the tenth century from the middle to the northern Rio Grande.

Given the chronometric data from early Developmental sites in the Peña Blanca area and elsewhere in the middle Rio Grande region, it is likely that most sites in the Middle Rio Grande region with San Marcial Black-on-white date after the mid-seventh century, much later than the span originally assigned by Curtis Wilson (1995). Thus, components assigned to the San Marcial phase or early Developmental period during the present study were contemporaneous with the Basketmaker III and Pueblo I period occupations of the Colorado Plateau. However, these early Developmental assemblages do not show some of the ceramic changes seen in the early Pueblo I assemblages on the plateau. For example, the pottery assemblages of the Mesa Verde region after A.D. 750 are characterized by higher frequencies of decorated pottery, the appearance of San Juan Red ware types in place of earlier slipped red ware types, and significant frequencies of neck-banded gray ware. These later types, while common in assemblages dating from the late eighth through the ninth century in the Four Corners region, do not appear in middle Rio Grande ceramic assemblages until the late A.D. 800s. The adherence to predominantly plain gray ware jar forms indicates the continuation of a very traditional ceramic technology. The late shift toward neck-banded and other textured gray ware types may parallel ceramic trends observed in the Little Colorado area to the west.

By the late A.D. 800s to the early 900s, as San Juan populations vacated upland areas such as the Dolores and La Plata River valleys for more favorable settings to the south of the San Juan River (Cordell et al. 2007; Duff and Wilshusen 2000; Wilshusen and Van Dyke 2006; see also Wilshusen, Ortman, and Phillips, Chapter 11; Windes and Van Dyke, Chapter 5), populations in the middle Rio Grande appear to have responded by expanding north above La Bajada and into the Tewa basin (Lakatos 2007). During this time, populations significantly increased and pit structure form and orientation became more predictable. For example, builders enhanced the hearth/ash pit/deflector/ventilator complex by delineating the limits of features, frequently using an adobe collar and an unshaped stone slab placed between the hearth and ash pit.

Although the use of architecturally similar pit structures, and pottery assemblages dominated by gray wares, during the A.D. 900s suggests continuity in population, the replacement of San Marcial Black-on-white by new types originating in the west, such as Red Mesa Black-on-white, bear witness to ties to the Cibola region west of the divide. The expansion of Developmental settlements north during the tenth century seems to have occurred rather suddenly, but the connection between events to the west and changes in the middle and northern Rio Grande regions is still not well understood.

CONCLUSIONS

Our research has shown that the stability and group success of early Developmental communities in the middle Rio Grande may have been partly facilitated by the diverse environmental settings which allowed households and hamlets to practice a mixed farming-foraging economy. Households remained residentially mobile, as evidenced by limited investments in storage facilities, continued use of pit structures, and ceramic assemblages dominated by plain utility wares. This settlement practice dispersed households and hamlets across the landscape and reduced competition for agricultural and wild food resources. It also probably promoted and maintained social interactions across a broad area. Residential mobility also facilitated the movement of goods and perhaps people from neighboring regions and may account for the variable combinations of materials characteristic of these early settlements. In addition to being spatially extensive, this lifeway maintained a settlement system, building practices, and ceramic technology that changed little over several centuries. Dispersed households were integrated into hamlets, which appear to have been focused on diffuse communities (Lakatos 2006; Lakatos and Post 2012; Tainter and Plog 1994). These early Developmental communities offered individual households the flexibility to cope with changes in social and natural environments and promoted overall group success

resulting in over 300 years of stability in the middle Rio Grande.

Future research on settlement patterns, community formation, and social interactions during the Developmental and later periods in the Rio Grande should focus on chronometric resolution. One important step would be to review museum collections for material recovered from early research projects suitable for radiocarbon or dendrochronological analysis. This is also true for ceramic artifact assemblages, which—if systematically reanalyzed—could provide a more detailed description of paste composition, types, and vessel forms, and surface treatments of utility wares which would be useful for refining temporal trends. The refinement of chronological trends in ceramic assemblages would be particularly useful for categorizing sites during surface inventory. Also, chemical and elemental analyses of ceramics may offer additional evidence for identifying regions of manufacture and exchange. Together, these approaches and techniques could determine whether pottery assigned to San Marcial Black-on-white and other white ware types from different regions reflect similar or different ceramic technologies. Such examinations may indicate the need for the eventual clarification or expansion of some of the type categories discussed here. Finally, the accurate reconstruction of paleoenvironmental conditions in the middle Rio Grande region during the early Developmental period would allow us to better understand the environmental context of this very successful adaptation that balanced wild and cultivated food resources. Our understanding of the temporal, social, and environmental conditions of the early Developmental period is just now coming into focus, and there is still much we need to do to comprehend how these early dispersed communities contributed to the formation of later, and better known, aggregated villages in the region.

Acknowledgments

Many of the researchers and production staff at the Office of Archaeological Studies contributed directly and indirectly to the content of this chapter. Their collective knowledge of Southwest archaeology and their willingness to share that knowledge along with their thoughts and criticisms are encouraging. Thanks to Robert Dello-Russo, Bill Lipe, and one anonymous reviewer for offering discerning and constructive comments on an earlier draft of this paper. Special thanks to Desert Archaeology, Inc., particularly Catherine Gilman, for generating the regional base map used in this chapter. Any errors or omissions are the responsibility of the authors.

CHAPTER 8

The Hunter and the Hunted:

What Faunal Remains Reveal about Early Pueblo Village Cuisine, Ritual Organization, and Social Power

JAMES M. POTTER

THE PUEBLO I PERIOD (A.D. 750–900) SAW the formation of some of the earliest and largest village communities in the northern Southwest. This chapter explores the effect this major social organizational transition had on hunting behaviors, the ritual use of fauna, and, more generally, cuisine. Faunal resources, especially hunted game, were highly valuable to early Pueblo people as a source of food and protein, as a political and social power resource, and as important components of religious rituals. This highly valued and multifaceted, yet underrecognized resource thus played an important role not only in the subsistence and survival of early villagers, but also in how newly aggregated communities were organized and where on the landscape they were positioned.

Recently, Kohler and Reed (2011) noted that early villages in the Mesa Verde Region were situated at relatively high elevations and that large-game remains, especially mule deer, are inordinately represented in the faunal assemblages of these early villages. They argue that optimal climatic conditions in the early A.D. 700s allowed farmers to expand their range to higher elevations to facilitate access to deer populations. But, as population levels grew, overhunting and large-game depletion brought about what they term a crisis in the protein supply, especially the availability of mule deer. By A.D. 850, these conditions created advantages for groups in which hunters could reliably form larger parties for long-distance hunting. Thus, one effect of the large size of these villages and the form that they took—long rows of connected rooms and large communal pit structures—was to build trustworthy groups of hunters who could be relied on for increasingly long-distance deer hunting.

This chapter expands on the Kohler and Reed study—particularly the contention that hunting was important in the organization and placement of these early villages on the landscape—by exploring the Dolores Archaeology Program (DAP) faunal assemblages in greater detail and comparing these data with other Pueblo I assemblages from across the northern Southwest, including assemblages recovered from sites along the Animas River recently investigated as part of the Animas–La Plata (ALP) Project. This chapter begins with a comparison of faunal assemblages from three Pueblo I villages in the Dolores River Valley. It then expands the analysis to include other large communities from across the northern Southwest to explore both changes through time and variation across space during this dynamic time period.

Table 8.1. Pueblo I assemblages from the northern Southwest used in the study

Site Number	Site Name	Location	Modern Town	Reference
5MT3868	Duckfoot	West of Crow Canyon	Cortez, CO	Walker 1993
5MT2854	Aldea Sierritas	Sagehen Flats	Dolores, CO	Wilshusen et al. 1999
5MT4614	Prairie Dog Hamlet	Sagehen Flats	Dolores, CO	Wilshusen et al. 1999
5MT2193	Dos Casas Hamlet	Sagehen Flats	Dolores, CO	Wilshusen et al. 1999
5MT4644	Windy Wheat Hamlet	Sagehen Flats	Dolores, CO	Wilshusen et al. 1999
5MT23	Grass Mesa	Grass Mesa	Dolores, CO	Wilshusen et al. 1999
5MT4475	McPhee Pueblo	McPhee Village	Dolores, CO	Wilshusen et al. 1999
5MT4477	Masa Negra Pueblo	McPhee Village	Dolores, CO	Wilshusen et al. 1999
5MT4479	Aldea Alfareros	McPhee Village	Dolores, CO	Wilshusen et al. 1999
5MT5106	Weasel Pueblo	McPhee Village	Dolores, CO	Wilshusen et al. 1999
5MT5107	Pueblo de las Golondrinas	McPhee Village	Dolores, CO	Wilshusen et al. 1999
5MT5108	Golondrinas Oriental	McPhee Village	Dolores, CO	Wilshusen et al. 1999
5MT4480	Rabbitbrush Pueblo	McPhee Village	Dolores, CO	Wilshusen et al. 1999
Various	Ridges Basin Community	Ridges Basin	Durango, CO	Potter and Edwards 2008
Various	Blue Mesa Community	Blue Mesa	Durango, CO	Potter and Edwards 2008; Fritz and Honeycutt 2003
LA78533	n/a	Fruitland	Aztec, NM	Sesler 2002
LA79489	n/a	Fruitland	Aztec, NM	Hovezak and Gass 2002
LA81657	n/a	Fruitland	Aztec, NM	Hovezak and Dice 2002
LA82977	n/a	Fruitland	Aztec, NM	Hovezak 2002

Pueblo I Faunal Patterns

Faunal data from 59 Pueblo I sites are included in this study (Table 8.1; Ridges Basin is represented by 38 sites, Blue Mesa by four sites) (Figure 8.1). The assemblages derive from sites across the northern Southwest and were chosen for inclusion based on their chronometric placement in the Pueblo I period, association with particular communities or environments, and systematic recovery and reporting. Data from sites investigated by the DAP were gleaned from the massive project database compiled by that project and recently migrated into a modern database format by Richard Wilshusen and his students (Wilshusen et al. 1999). Data from three DAP communities are included here—McPhee Village, Grass Mesa, and Sagehen Flats. Potter (2009) provides these data in tabular form. The ALP project also provided copious data for this study from the Ridges Basin and Blue Mesa communities, south of Durango, Colorado (Potter and Edwards 2008).

While there is considerable overlap in the sites included in this study and those contained in Driver's (2002) synthesis of faunal data from the Mesa Verde region, there are substantial differences, too. First, obviously this study includes only Pueblo I assemblages, whereas Driver's comprised assemblages from all prehispanic time periods represented in the Mesa Verde region. Second, data from the ALP project were not available to Driver at the time of his study, so the inclusion of ALP data makes this study timely. Third, since this study uses the DAP database rather than the printed DAP faunal reports, a more refined breakdown of sites is possible, especially, for example, with the various sites (i.e., roomblocks) composing McPhee Village (Table 8.1). These are lumped as a single "McPhee Community Cluster" assemblage in the original faunal report (Neusius 1988) and subsequently by

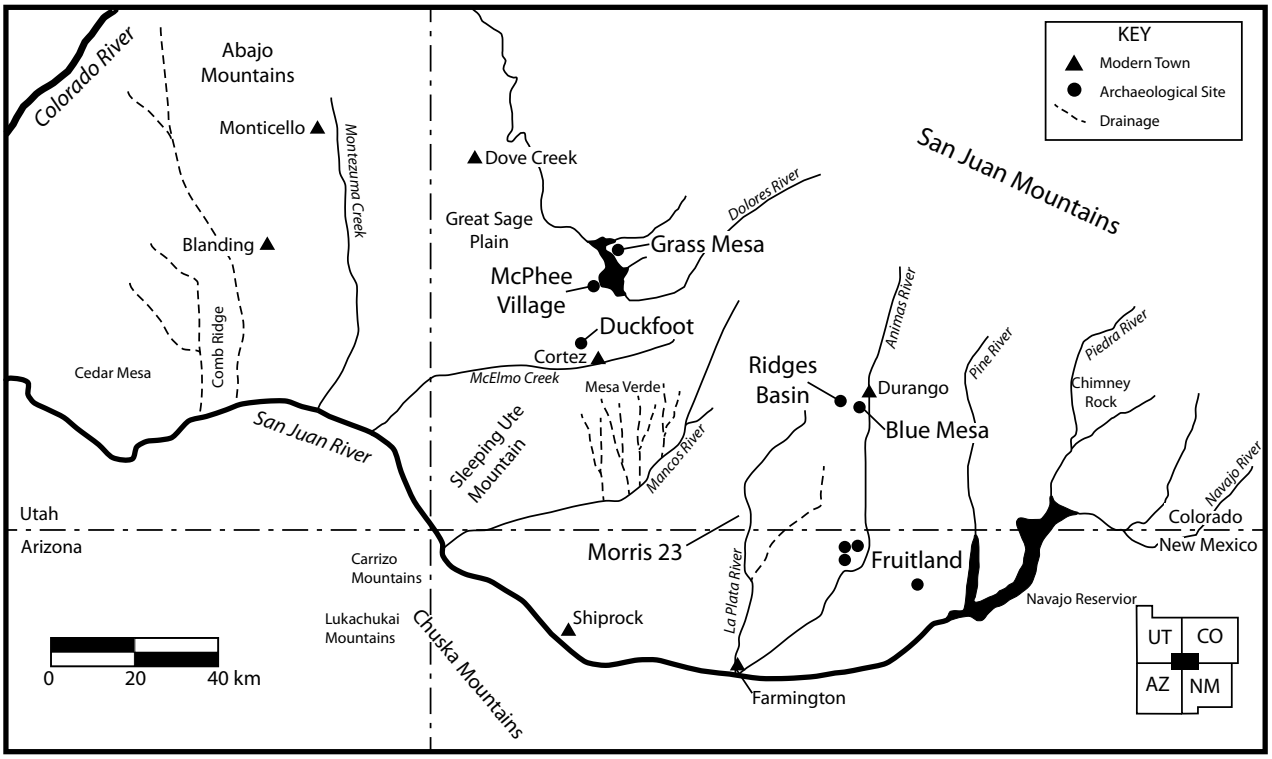


Figure 8.1. Map of Pueblo I locales included in the analysis.

Driver (2002: table 7.1). And finally, Driver's study focused on the Mesa Verde region specifically and did not include data from the Navajo Reservoir area in northern New Mexico. This study is not as restricted geographically and includes Pueblo I assemblages from sites investigated as part of the Fruitland project (Hovezak 2002; Hovezak and Dice 2002; Hovezak and Gass 2002; Sesler 2002).

Two Sides of the River: Comparing Grass Mesa and McPhee Village

In their 1999 *Kiva* article, Richard Wilshusen and Scott Ortman presented the argument that differences seen between two of the largest Pueblo I communities investigated by the DAP—McPhee Village and Grass Mesa Village (Figure 8.1)—were in part due to the cultural and historical backgrounds of the founding populations of each. Dissimilarities in architecture, settlement history, ceramics, and demographic patterns reflected "cultural differences that developed in the more distant past and were materialized when people from distinct cultural backgrounds were brought in close contact" (Wilshusen and Ortman 1999:391). They suggested that villages on the east side of the Dolores River (i.e., Grass Mesa Village) were organized in a manner similar to patterns found at later Mesa Verde communities, while those on the west side (i.e., McPhee Village) were precursors to early Bonito phase great houses of Chaco Canyon (Wilshusen and Ortman 1999:391).

Do the faunal assemblages of these communities support the argument for possible cultural differences between them? In many ways, the faunal assemblages from these communities are remarkably similar in their composition. This is not surprising, given that they occupied similar environments (they are only about 8 km apart) and had access to a similar range and abundance of species. Both communities, for instance, exhibit almost identical proportions of large game and various artiodactyl species, indicating the comparable importance of these resources in both communities. Similarly, small mammal and lagomorph proportions are roughly equal in their contribution to the diets of each community. Indeed, the basic hunting indices

Table 8.2. Counts of various taxonomic groupings from five Pueblo I locales

Taxa	Dolores River Basin	Duckfoot	Ridges Basin	Blue Mesa	Fruitlands
Aves	1,246	59	2,113	63	122
Carnivore	278	7	241	4	0
Canid	238	89	2,567	1	55
Lagomorph	5,500	1,802	1,985	311	281
Artiodactyl	2,802	326	995	102	36

for both communities are staggeringly similar. The Artiodactyl Index (Artiodactyl / [Artiodactyl + Lagomorph]) (Szuter and Bayham 1989) is 0.37 for McPhee and 0.39 for Grass Mesa; the Lagomorph Index (*Sylvilagus* / [*Sylvilagus* + *Lepus*]) (Driver and Woiderski 2008) is 0.50 for McPhee and 0.53 for Grass Mesa. These numbers suggest not only that a similar proportion of similar species of particular body sizes composed the cuisine of each community, but also that hunting techniques (such as the communal hunting of jackrabbits vs. the garden hunting of cottontails) were quite equivalent in their contribution to the diets of each community.

The main difference between the McPhee and Grass Mesa assemblages is the proportion and diversity of bird species represented. The McPhee Village assemblage is composed of 5.5 percent avian remains, representing at least 23 species; the Grass Mesa assemblage comprises only 3.8 percent birds, representing 11 species. The high diversity of species (i.e., richness) in the McPhee Village assemblage compared with the Grass Mesa assemblage is not due to sample size differences. Most of the avian remains recovered from McPhee Village (458 of a total of 666 avian bones and 22 of the 23 avian species represented) derive from McPhee Pueblo, one of the largest roomblocks in the community and the one that contained the largest and most complex, oversized pit structure. This site yielded a total sample size of 7,824 bones, 5.9 percent (n = 458) of which were avian remains. Grass Mesa's total assemblage was 9,656, 3.9 percent of which were avian remains (n = 372). Thus, even though the size of the total assemblage was 23 percent smaller than the Grass Mesa assemblage, the McPhee Pueblo assemblage had a higher frequency of avian remains and contained twice as many bird species.

These results are consistent with an earlier analysis of the distribution of avian remains within the McPhee community (Potter 1997), which argued that the high frequency and diversity of avian species associated with the McPhee Pueblo roomblock was due to the disproportionate amount and variety of ritual activity that occurred there. When Grass Mesa is added to the analysis, the uniqueness of this pattern among Pueblo I communities becomes apparent. Roler (1999) demonstrates a similar pattern of high avian abundance and diversity associated with Chacoan great houses and lesser quantities at surrounding roomblocks, both within Chaco Canyon and at outlier sites (Roler 1999:121–206).

In summary, faunal data lend some support to the Wilshusen and Ortman (1999) model for differences seen between Grass Mesa Village and McPhee Village. Although economically they operated very similarly to each other, with comparable proportions of large game contributing to their diet, for instance, their ritual organization appeared quite different, with McPhee Pueblo potentially serving a role similar to a Bonito-phase great house within a community of aggregated but dispersed roomblocks. The following section explores the genesis of this pattern by adding time depth to the analysis and comparing Pueblo I assemblages from nearby Sagehen Flats that date slightly earlier than the main occupations of McPhee Village and Grass Mesa.

Change through Time: Comparing Sagehen Flats with McPhee Village

Sagehen Flats was an open, flat, bottomlands area located west of the Dolores River. Prior to inundation by McPhee Reservoir, this area contained a substantial wetland known as the Sagehen Flats Marsh. McPhee Village, the main occupation of

which extended from A.D. 850 to 880, occupied the eastern edge of this area, near the west bank of the river. Prior to this (ca. 750–850) Sagehen Flats was occupied by a community of dispersed hamlets, several of which were excavated by the DAP. Four early Pueblo I hamlets on Sagehen Flats yielded faunal assemblages adequate for inclusion in this analysis (Table 8.1). That these two communities occupied the same area but were organized very differently provides an opportunity to address the effects of this reorganization, especially population increase and village aggregation, on faunal exploitation within the Pueblo I period.

Compared with McPhee Village (and Grass Mesa), Sagehen Flats hamlets consistently produced lower ratios of artiodactyls (Figure 8.2). The smaller relative proportion of artiodactyls composing the assemblages of these earlier, smaller sites may relate to the difficulty in organizing large groups of hunters in small, dispersed agrarian communities. In these contexts, hunters often must go it alone when hunting large game. Kohler and

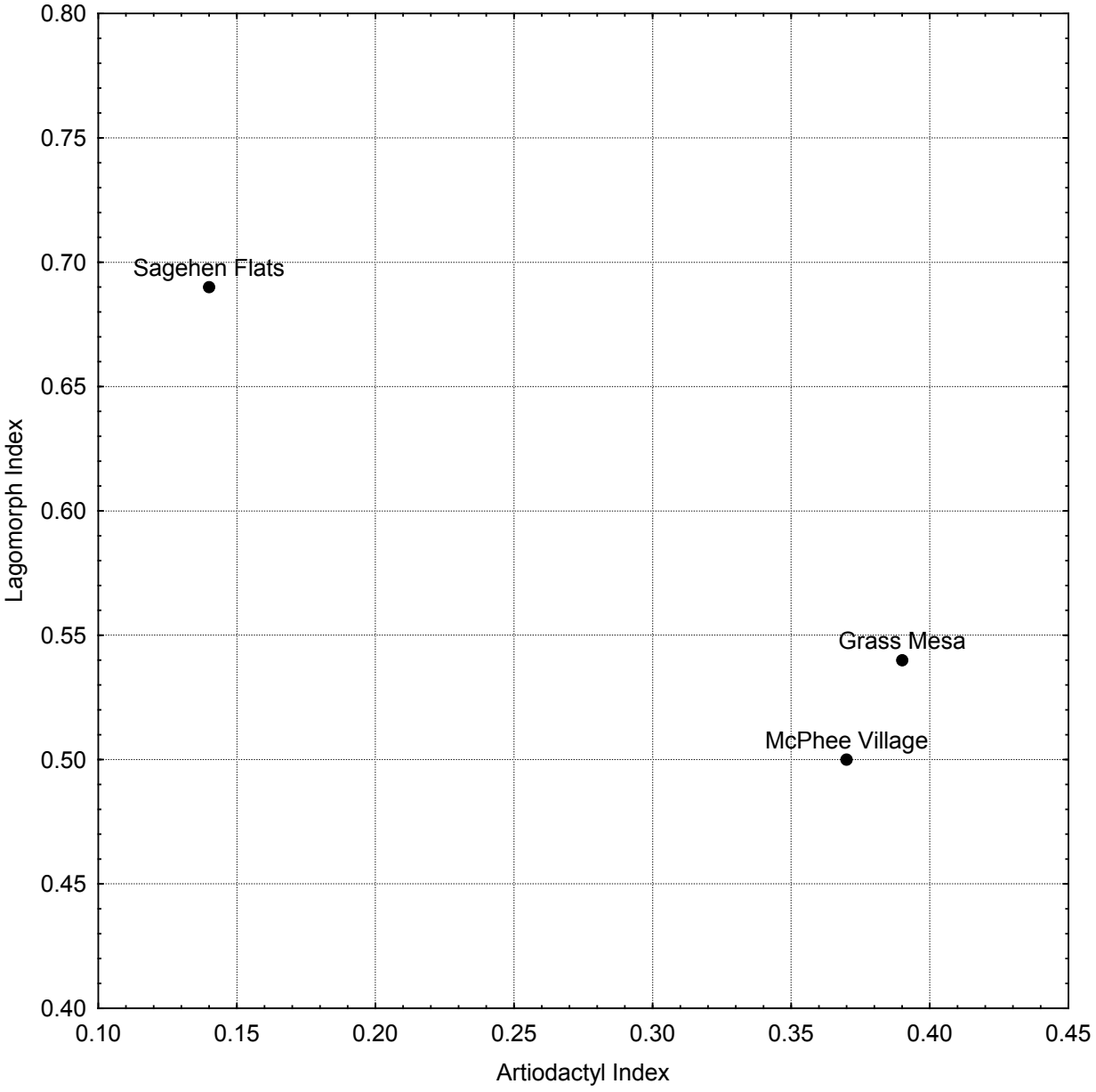


Figure 8.2. Plot of Artiodactyl and Lagomorph indices from Sagehen Flats, McPhee Village, and Grass Mesa.

Reed (2011) suggest that one of the reasons underlying village aggregation in the Pueblo I period, particularly in high-elevation settings like McPhee and Grass Mesa, is the increased opportunity that aggregated settings provide to form large, well-organized hunting parties, which can increase the overall success of large-game hunting. The patterns noted among these faunal assemblages appear to support this argument.

Sagehen Flats sites also produced much higher Lagomorph Index values (i.e., more cottontails relative to jackrabbits) than did the later, aggregated villages (Figure 8.2). There are two likely reasons for this pattern. The open spaces provided by agricultural landscapes favor jackrabbits and are not so well suited for cottontails, whose natural cover of brushy vegetation is necessarily removed for field clearing (Szuter and Bayham 1989). Large villages, then, would be expected to generate lower Lagomorph Index values than smaller sites occupied for a shorter time, due to the impact of a large agricultural population on the local environment. A shift in hunting techniques associated with aggregation can also play a role in lowering cottontail ratios. Communal drives heavily favor jackrabbits, because these animals run to escape predation whereas cottontails hide in underbrush. Compared with smaller communities composed of dispersed hamlets, aggregated villages can provide the larger numbers of people necessary for the successful organization of communal drives, and consequently higher proportions of jackrabbits are expected in larger archaeological sites.

Bird proportions at Sagehen Flats sites are comparable to the McPhee proportions and quite a bit higher than those from Grass Mesa (Figure 8.3; see Potter 2009: table 5.3). This is probably due both to the proximity of the Sagehen Flats marsh, which would have attracted waterfowl such as geese, and the open grassy environment around the sites, which grouse (e.g., sage hen) favor. Interestingly, like McPhee Village, one household within the earlier Sagehen Flats community seems to have used birds more intensively than other households. Aldea Sierritas contained a high quantity and diversity of birds compared with other households. The reason for this is unclear; this site does not contain an obvious ritual structure, but the diversity and types of birds represented suggest that they were procured as much for feathers as for food. This pattern of a single (central?) household or group of households within a larger community dominating the use of birds, potentially for ritual purposes, anticipates the pattern at McPhee Village and suggests that it is more than the proximity of these communities to the marshlands that is causing the high relative frequency of avian remains in these assemblages; if proximity to marshlands were the cause, then we would expect a roughly equal ratio of bird remains among all households rather than their concentration in one.

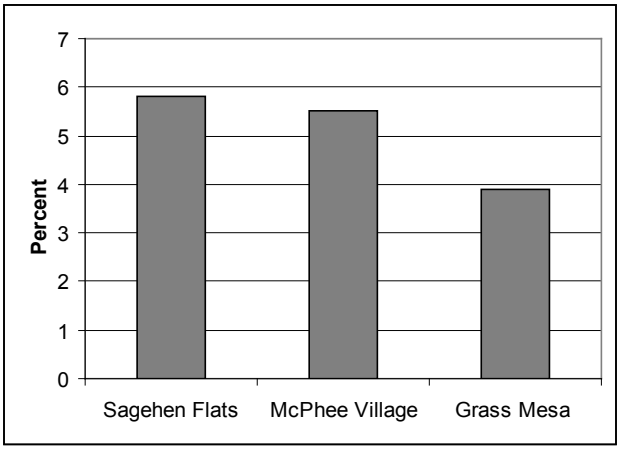


Figure 8.3. Avian percentages for Sagehen Flats hamlets, McPhee Village, and Grass Mesa Village.

THE BROADER REGION: COMPARING DUCKFOOT, DOLORES RIVER BASIN, RIDGES BASIN, BLUE MESA, AND FRUITLAND

To explore variation in Pueblo I faunal use across a broader region of the northern Southwest, this section compares frequencies of various taxa from the Dolores River Basin, the Duckfoot Site, Ridges Basin, Blue Mesa, and the Fruitland Project (Figure 8.1). The Dolores River Basin data include only faunal assemblages from McPhee Village, Grass Mesa Village, and the Sagehen Flats sites (Table 8.1). The Duckfoot data derive from the Duckfoot Site, a multiple-household Pueblo I

hamlet west of Crow Canyon. This site was included because it was contemporary with, and not very far from, the Dolores sites, yet was situated at a slightly lower elevation, occupied a more xeric environment, and was rather isolated from the larger Dolores community. Ridges Basin assemblages comprised all Pueblo I sites excavated in Ridges Basin by SWCA as part of the ALP Project (Potter and Edwards 2008). The Blue Mesa sample comprised three sites excavated by SWCA as part of the ALP project (Potter and Edwards 2008) and one site, 5LP379, excavated by Woods Canyon Archaeological Consultants (Fritz and Honeycutt 2003). The Fruitland data were recovered from four small Pueblo I sites near Navajo Reservoir in northern New Mexico as part of the Fruitland project (Table 8.1).

Artiodactyl and Lagomorph indices are highly variable among the different locales (Figure 8.4). Artiodactyl Index values are high for Dolores River Basin sites and Ridges Basin sites, moderate for Blue Mesa, and comparatively low for Duckfoot and Fruitland sites. Two factors are likely causing this variation. The first is that Ridges Basin, Blue Mesa, and Dolores River Basin communities were at high elevations, between 6,800 and 7,000 feet, and occupied relatively lush river basins—environments that were highly attractive to deer and elk. The Duckfoot and Fruitland sites, on the other hand, ranged from 6,020 to 6,380 feet and were in more xeric environments.

A second factor potentially contributing to higher Artiodactyl Index values at Dolores, Ridges Basin, and Blue Mesa sites is that they constituted very large Pueblo I communities. It appears that when it came to gaining and maintaining access to large game in the Pueblo I period, especially artiodactyls, size mattered. This may relate in part to the greater ease with which larger communities can draw on local populations to participate in communal hunts, which can increase returns per individual (Kohler and Reed 2011). Additional factors potentially causing elevated artiodactyl frequencies at larger sites include more and/or larger communal feasts occurring at big villages, or these communities, by virtue of their size, laying claim and controlling access to particular resource areas (Wilshusen and Potter 2010).

Lagomorph Index values varied widely among the locales as well. The Ridges Basin and Dolores River Valley communities produced the lowest values (Figure 8.4). Again, this may relate to the impact of larger populations in Ridges Basin and the Dolores River Basin on the local environment such that it favored jackrabbits over cottontails, or more effective communal hunting of jackrabbits by larger aggregated populations. Whatever the specific reason(s), in the Pueblo I period there appears to be a correlation between community size and not only elevated Artiodactyl Index values, but also jackrabbit ratios.

Aves percents are also variable among Pueblo I communities (Figure 8.5). The lowest values were produced by sites at the western extent of the sampled area, at the Duckfoot and Dolores sites. Ridges Basin yielded by far the highest proportion of bird bones, composing nearly 12 percent of the total assemblage. This inordinately high frequency of birds is probably due to two factors. The first is the presence of a sizable marsh or wetland in Ridges Basin in the A.D. 700s and 800s (Anderson 2008). Consequently, water fowl and shore/wading birds are well represented in the assemblage, including swans, cranes, wood stork, osprey, ducks, teal, and snipe (Potter and Edwards 2008). The second contributing factor is the high frequency of turkeys in the Ridges Basin assemblage, especially compared with other Pueblo I assemblages. A full 5.1 percent of the total Ridges Basin assemblage is made up of turkey, compared with 1.3 percent of the McPhee Village assemblage and 0.5 percent of the Grass Mesa assemblage.

To explore these patterns further and to add taxonomic variables to the search for patterning, counts of major taxonomic groupings—aves, wild mammalian carnivores, domesticated dogs, lagomorphs, and artiodactyls—for each locale are presented in Table 8.2 and analyzed using correspondence analysis (Figure 8.6).[1] The analysis indicates a close association of three locales—Blue Mesa, Fruitland, and Duckfoot—with lagomorphs; a correlation of Dolores sites with artiodactyls; and a strong

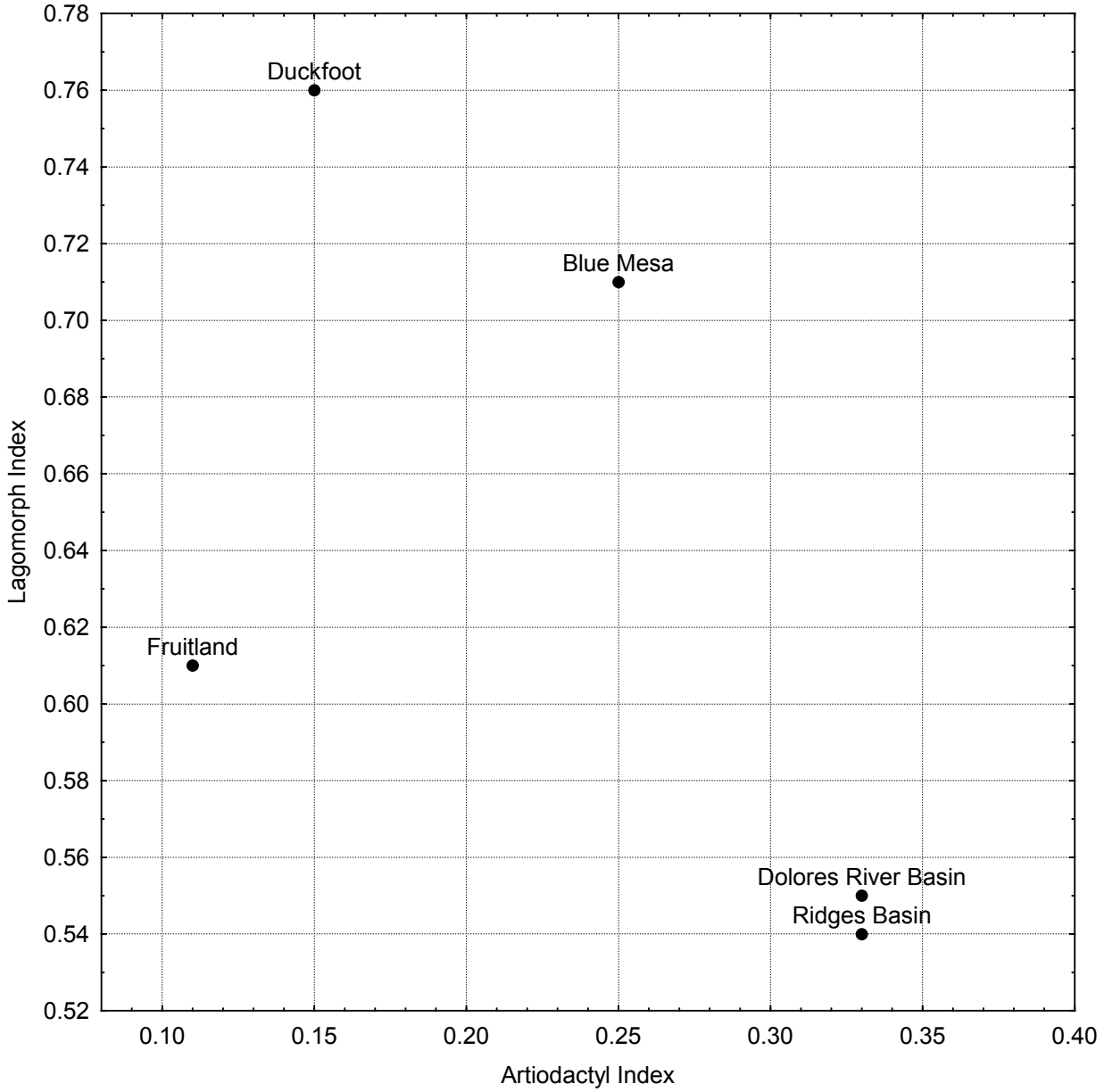


Figure 8.4. Plot of Artiodactyl and Lagomorph indices from five Pueblo I locales.

correlation of Ridges Basin sites with both birds and dogs. This analysis highlights some of the inherent problems with the Artiodactyl Index as the primary measure of the contribution of artiodactyls to the diet of various communities. While the Artiodactyl Index values of Ridges Basin and Dolores sites are nearly identical, the actual artiodactyl proportions are vastly different—the proportion of the total Ridges Basin assemblage composed of artiodactyls is only 2.9 percent while that of Grass Mesa is 10.2 percent. This discrepancy arises because of the relatively low frequency of lagomorphs in the Ridges Basin assemblage (which is what the Artiodactyl Index uses to standardize artiodactyl frequencies) as well as the high relative frequency of other taxa, such as birds and dogs, which the Artiodactyl Index does not take into account. A comparison of all taxonomic frequencies through the use of correspondence analysis illuminates this problem and identifies further patterning among the assemblages, particularly the uniqueness of the Ridges Basin assemblage among Pueblo I assemblages.

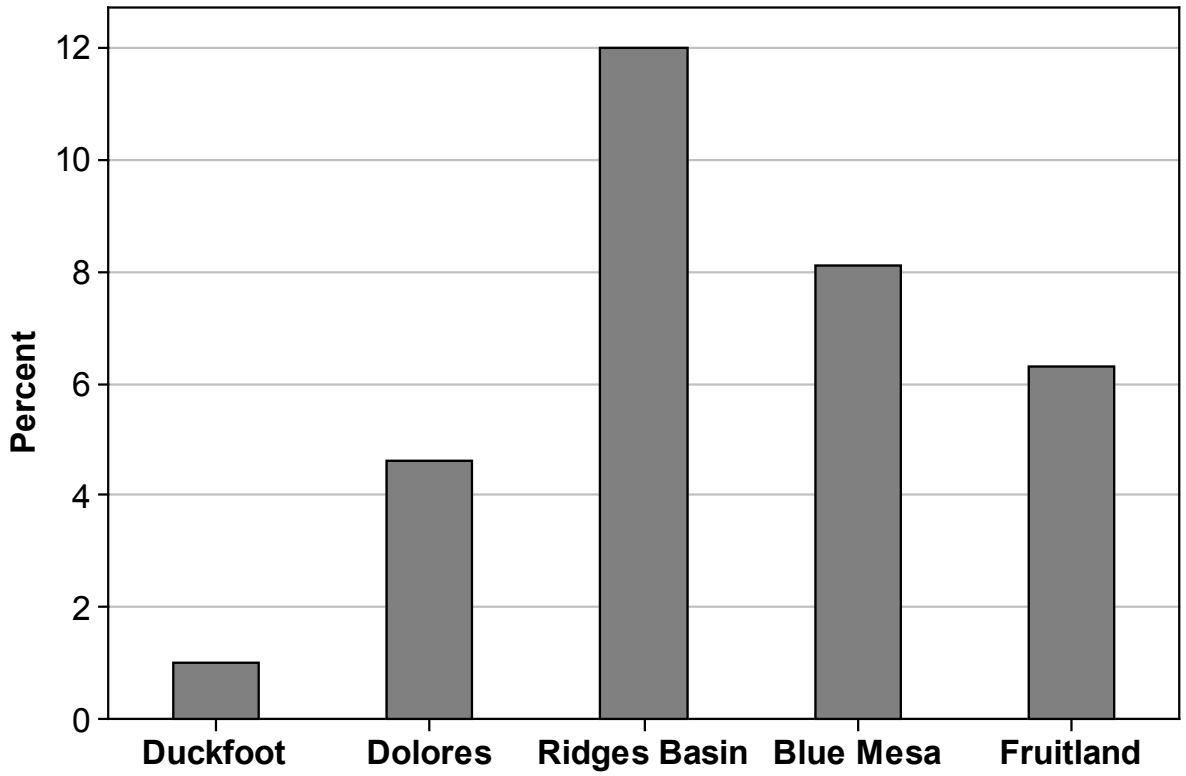


Figure 8.5. Avian percentages for assemblages from five Pueblo I locales across the northern Southwest.

In summary, larger Pueblo I communities situated at higher elevations and in more lush environments tend to have faunal assemblages with higher proportions of artiodactyls and jackrabbits. This is due to a combination of potential factors, including the attractiveness of these environments for deer and elk; environmental impacts of an aggregated population that tend to favor jackrabbits, such as brush clearing for fields; and the greater ease with which communal hunts can be organized in aggregated settings, which may increase returns for both artiodactyl and jackrabbit procurement. The analysis also identified the Ridges Basin community as unique in its inordinately high frequencies of birds and dogs. The following section explores the Ridges Basin community in greater detail.

Ridges Basin: An Early Pueblo I Community

Ridges Basin is a broad, triangular basin just south of Durango and just west of the Animas River. Basin Creek, which flows through the basin, empties directly into the Animas, approximately 5 km east of the eastern extent of the basin. In the early A.D. 700s, migrants began moving into Ridges Basin and organizing themselves into household clusters. By A.D. 750, several of these clusters had formed, consisting of 50 to 75 loosely aggregated single-household hamlets. One of these clusters was large and tightly aggregated enough to be considered a village—the Sacred Ridge site. Occupying a large knoll at the west end of Ridges Basin, the site covered about 12 acres and contained 22 pit houses, some of which were large enough to have been communal ritual structures. In addition, at the apex of the knoll of Sacred Ridge were several unique architectural features, including a large circular storage facility enclosed by a palisade and multistory wood and adobe tower (Potter and Chuipka 2007). By 820, Ridges Basin, including the Sacred Ridge site, was completely depopulated. The early Pueblo I community in Ridges Basin was thus a short-lived one. Yet, due to the spatial and temporal discreteness of houses and their associated artifacts and refuse, it presents an ideal data set for

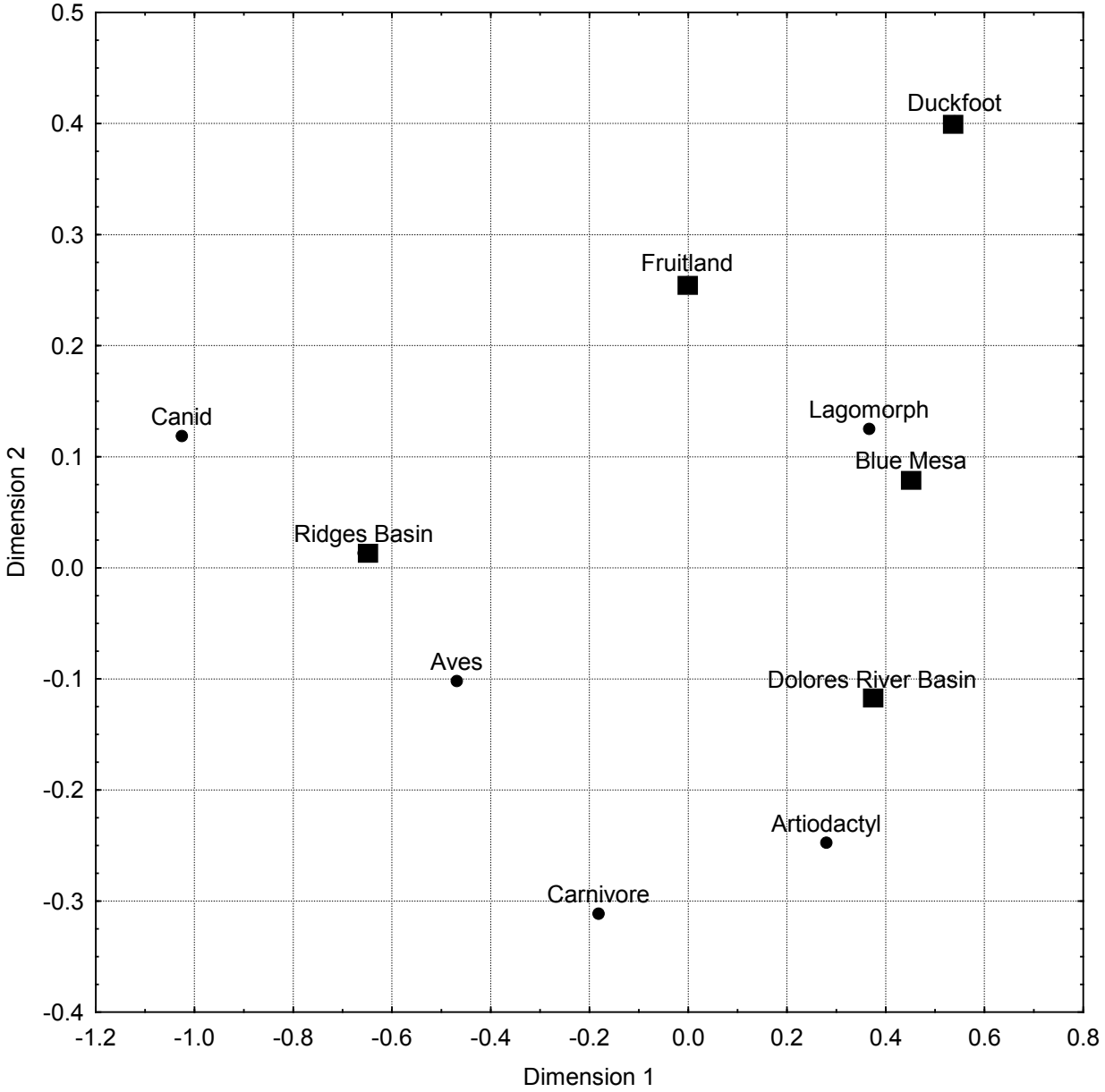


Figure 8.6. Plot of the first two dimensions of a correspondence analysis performed on counts in Table 8.2.

examining household variation within one of the earliest expressions of village aggregation in the northern Southwest.

From 2002 to 2005, as part of the ALP project, SWCA Environmental Consultants recovered 17,788 vertebrate faunal specimens from 38 Pueblo I sites in Ridges Basin and 735 bones from three Pueblo I sites on nearby Blue Mesa (Potter and Edwards 2008). For analytical purposes and to explore variation within the community, Ridges Basin sites were grouped into clusters (Potter and Edwards 2008). Several basic groupings by animal type were used to examine variation in species abundances among the clusters. These are (1) mammalian carnivores, which include all carnivores except dogs; (2) birds of prey; (3) waterfowl, which includes wading birds and shorebirds; (4) domestic dogs; (5) turkeys, both domesticated and wild; (6) game birds, primarily grouse; (7) ungulates (or artiodactyls), which includes deer, antelope, bison, and elk; and (8) lagomorphs, which comprise both cottontail rabbits and jackrabbits. Rodents are

Table 8.3. Taxonomic abundances by site cluster

Site Cluster	Mammalian Carnivore: Count (%)	Birds of Prey: Count (%)	Waterfowl: Count (%)	Dog: Count (%)	Turkey: Count (%)	Game Bird: Count (%)	Ungulate[a]: Count (%)	Lagomorph: Count (%)	Row Total: Count	Total Assemblage[b]
Sacred Ridge	17	11	5	996	254	27	297	723	2,330	5,608
	(0.3)[c]	(0.2)	(0.1)	(17.8)	(4.5)	(0.5)	(5.3)	(12.9)		
Eastern cluster	146	5	429	1,278	419	7	78	377	2,739	5,129
	(2.8)	(0.1)	(8.4)	(24.9)	(8.2)	(0.1)	(1.5)	(7.4)		
Blue Mesa	3	1	0	1	28	2	30	212	277	725
	(0.4)	(0.1)		(0.1)	(3.9)	(0.3)	(4.1)	(29.2)		
Western cluster	3	0	0	27	15	1	30	153	229	1,286
	(0.2)			(2.1)	(1.2)	(0.1)	(2.3)	(11.2)		
North-central cluster	96	5	2	263	242	23	97	726	1,454	5,451
	(1.8)	(0.1)	(0.0)	(4.8)	(4.4)	(0.4)	(1.8)	(13.3)		

Source: From Potter and Edwards 2008.

[a]Does not include antler.

[b]Includes all bones in the assemblage.

[c]Percents based on total assemblage number for each site cluster.

excluded from these comparisons due to the possibility that some or most arrived in site contexts after the site was in use.

Table 8.3 shows how the various site clusters differ with respect to the frequency of these taxonomic groupings. Several of the results of this analysis are worth considering here. The first is the distribution and context of turkey remains, which comparatively are highly abundant in Ridges Basin assemblages (see above). Turkeys are most abundant in the Eastern cluster and are represented there mostly as burials in structure fill. But they are also quite abundant in other clusters where they were recovered as disarticulated remains from midden and pit structure floor contexts. Indeed, a pit structure in the North-central cluster appears to have been used exclusively to process fauna, particularly turkey and rabbit carcasses. This same site produced pieces of eggshell—evidence of turkey-rearing. Turkeys, then, were an important food source for at least some households in Ridges Basin.

Dogs, wild birds, and nondomesticated carnivores, on the other hand, were almost exclusively recovered as burials, often associated with the closing of pit structures, or as items associated with human burials. This is in contrast to McPhee Village, where high concentrations of carnivore and bird remains were found in association with communal ritual structures at McPhee Pueblo (Potter 1997). ALP assemblages show no such associations; no large concentrations of remains of these animals were found that were not associated with structure closing assemblages or burials.

Waterfowl was also particularly prevalent in the Eastern cluster, as might be expected given its proximity to the prehistoric marsh that filled the eastern end of the basin (Anderson 2008). It seems clear that some Pueblo I communities, such as Sagehen Flats, McPhee, and Ridges Basin, were intentionally established in or near marshy environments. Marshes not only collect water but also attract game for nearby hunting and produce wetland ruderal foods such as cattail (Wilshusen et al. 1997:675). Moreover, marshes hold a special place for Pueblo groups for their religious or spiritual significance. Marshes and marsh reeds are prominent in creation stories of the Hopi and the Zuni people, for example (e.g., Cushing 1992). Indeed, Anderson (2008:55) suggests that "what started as a preference for naturally occurring marsh resources in the distant Puebloan

past, eventually became an integral part of their cultural landscape, evolving into the public architecture seen today as the remains of PIII reservoirs."[2]

Finally, Sacred Ridge occupants enjoyed better access to large game, especially deer, than did other households in Ridges Basin (Potter and Edwards 2008) (Table 8.3). Relative frequencies of artiodactyls such as deer and elk are significantly higher at this site than they are at other household clusters throughout the basin. This finding suggests at least three possible interpretations: (1) high status or powerful households at Sacred Ridge somehow controlling access to game or hunting grounds; (2) more effective cooperation among hunting groups at Sacred Ridge than at other house clusters, or (3) communal feasting involving large game occurring more often at Sacred Ridge. One or all could have been the case, but flaked stone data suggest that more effective hunting was a primary reason. Sacred Ridge contained by far the highest proportion of processing tools and projectile points among early Pueblo I habitations in the region, suggesting direct procurement of large game through hunting and processing (Railey 2008).

Conclusion

Several important patterns have emerged from this analysis. The first is that assemblages from larger Pueblo I sites tend have higher proportions of artiodactyls than those from smaller sites. It is clear that from a strictly dietary perspective, there were advantages to living in larger villages and that villages dominated the economic and ritual landscape in this time period. It has been suggested above that this is potentially due to several factors, including the greater ease with which larger communities can draw on local populations to participate in communal hunts; more and/or larger communal feasts occurring at big villages involving the consumption of large game; or these communities, by virtue of their size, laying claim and controlling access to particular resources areas. These are not mutually exclusive explanations, but one of the most important distinctions to emerge from this analysis is that settlement size, rather than community size, may be the most important factor. These patterns appear to be caused by more than simply the presence of large populations from which to enlist hunters for communal hunts. Within the Ridges Basin community, for example, it was the large site—the Sacred Ridge village—that exhibited the high proportions of deer and elk. Following Kohler and Reed (2011), I suggest that large settlements (i.e., villages) provided unique contexts for building cooperative groups based on particular social identities and that this facilitated the formation of effective hunting groups.

Taking the Ridges Basin community as an example, more than any other household cluster, Sacred Ridge provided a context that promoted a cohesive identity for its members. It did this in a number of ways. First, houses were much more tightly aggregated and much more consistent in appearance on Sacred Ridge than they were in other household clusters composing the community (Potter and Yoder 2008). Second, communal rituals at Sacred Ridge provided for the social integration of site residents. This site contained four oversized pit structures that appear to have operated at least part time as communal ritual facilities (Potter and Chuipka 2007). In addition to being very large and containing ritual floor features, each of these structures was associated with elevated bowl ratios, suggesting that food serving, possibly during communal feasts, occurred more frequently at these structures than elsewhere in the community (Allison 2008a). This supports the idea that Sacred Ridge provided unique contexts of social integration for its members, since oversized structures with ritual floor features do not occur on any other site in Ridges Basin. And finally, the unique and exclusionary architecture on top of the knoll would have provided a highly visible symbol of identity for the residents of Sacred Ridge (Potter and Chuipka 2007; Potter and Yoder 2008).

All of these elements may have worked to facilitate the formation of cohesive and effective cooperative groups and to develop sentiments of common membership, expressed and reinforced by ritual, similarities in material culture, and participation in collective exploits, such as communal hunting. Villagers at Grass Mesa and McPhee Village appear

to have been similarly compelled (Kohler and Reed 2011), and I suggest that the unique social cohesiveness and identities that these villages provided to their members played a role in this.

A second pattern noted in this study is the association of some early villages with marshes, a pattern that may portend later Pueblo peoples constructing and living near built reservoirs. Establishing early villages near marshes may have been a strategy to lay claim to the faunal and floral resources associated with these particular landscape features. More importantly perhaps, though, was the spiritual and mythic significance of marshes and lakes as places of origin, creation, and power, and the socially legitimizing aspects of associating a village with these meaningful places.

There appears to be a shift within the Pueblo I period in the use of wild bird and carnivore remains. Whereas in later Pueblo I villages, such as McPhee Village, birds and carnivores were found in association with communal ritual facilities (Potter 1997), in the eighth century these items were primarily associated with the closing rituals of individual houses and human burials. In other words, although these species appear in both time periods to have been valued and used primarily as ritual items, in the early Pueblo I period they were employed in personal or private ceremonial contexts, whereas in the later Pueblo I period their use was primarily in public ritual contexts. Allison (2008a) sees a parallel shift in the use of red ware pottery. He suggests that while by the late A.D. 800s in the Dolores area red ware had become important to communal feasts—events that created and reinforced social integration and group identities—100 years earlier in Ridges Basin, red ware pots were mostly burial items and were associated more strongly with the creation of individual identities, as some people were able to obtain more red ware vessels than others. The shift in the use of these items may signal a larger change to more effective institutions of social integration and may have played a role in establishing larger and more stable villages in the latter half of the ninth century. As suggested by the faunal distributions at McPhee Village, these institutional changes may have had a hand in many of the patterns evident in Chacoan great house communities 100 years later.

Finally, while large-game hunting undoubtedly was a sizable component of the cuisine in villages in the central Mesa Verde region, such as McPhee Village and Grass Mesa (Kohler and Reed 2011; Potter and Ortman 2004), in the eastern Mesa Verde region, turkey husbandry played an important dietary role, especially in Ridges Basin. This may relate to environmental differences between the two areas and may be an indication that large game was more plentiful in the Dolores River Valley than in the Animas. Turkeys apparently were adopted as an alternate protein source earlier in the east as a result. Over the next centuries, however, as deer populations became severely depleted across the northern Southwest, domesticated turkeys emerged as the most important source of protein in villages (Driver 2002), and this remained the case up through the historic period.

NOTES

1. Correspondence analysis (CA) is a multivariate analytic technique comparable to principal components analysis in that it can be used to describe and identify relationships among variables. CA is based on the chi-square distance between cell values in a contingency table and is most appropriate for discrete data such as counts and presence/absence data (Baxter 1994:100–101).

2. Additionally, there is a wetland area just below Morris 23 in the form of an old abandoned bend in the river. But it is not clear whether it would have been there in Pueblo I times.

CHAPTER 9

The Perishable Side of Early Pueblo Style and Identity:

Textiles, Sandals, and Baskets

LAURIE D. WEBSTER

In the late 1930s, A. V. Kidder lamented the relative scarcity of well-preserved Pueblo I perishables, declaring that the "dry rubbish of Pueblo I is as rare as the proverbial hen's teeth" (Baldwin 1939a:239). A similar sentiment was echoed by Earl Morris (1939:32), who noted, "So few objects of perishable nature of Pueblo I have been recovered that there is not much to be said about them." By that time, rich assemblages of Basketmaker and late Pueblo period perishable artifacts had been removed from the dry caves of northeastern Arizona, southeastern Utah, and several other regions of the Colorado Plateau, but unburned examples of Pueblo I baskets, textiles, or other perishable materials were rarely encountered. As Samuel Guernsey (1931:92) explained, it appeared that "the people of this time period lived less in caves than did the Basket-maker III people, and buried their dead in them hardly at all."

Seventy years later, the Pueblo I record of well-preserved perishables is still surprisingly scant. Only a few unburned Pueblo I perishable assemblages have been identified since Kidder's, Guernsey's, and Morris's work (e.g., Adovasio and Gunn 1986; Janetski and Wilde 1989; Magers 1986). Fortunately, several recent mitigation projects, including the Dolores Archaeological Project (DAP), the Rocky Mountain Expansion Loop Pipeline Data Recovery Project, and the Animas–La Plata Project (ALP), have expanded the Pueblo I perishables database considerably through their recovery of well-dated carbonized perishables from burned pit structures (Blinman 1986; Webster 2003, 2009). Most of these carbonized collections are poorly preserved and fragmentary, but when studied in conjunction with the dry cave data, they greatly expand our understanding of Pueblo I perishables production during the period A.D. 700–950.

Despite these recent data, our geographical picture of Pueblo I perishables in the northern Southwest is still extremely skewed (Table 9.1). We have a considerable amount of information for some regions, and little to none from others (Figure 9.1). For example, no assemblages of Pueblo I perishables have been recovered from the Rio Grande Valley or the Little Colorado region, to my knowledge, although the gray literature may contain a few examples. Our best-preserved collections come from dry alcoves in the Tsegi and Chinle drainages of northeastern Arizona, including Cave 1 in Tsegi Canyon, Water Fall Ruin (also known as Ruin 9, Floating House Ruin, and Nockito or Nokito Ruin) in the lower Chinle, and Antelope House in Canyon del Muerto, all of which produced relatively diverse assemblages of Pueblo I textiles, sandals, baskets, or mats. Given the presence of Pueblo I perishables

Table 9.1. Sites on the Colorado Plateau with evidence of Pueblo I textiles and basketry

Site	Location	Figure 9.1 Map Reference	Date range of Pueblo I artifacts	Artifact type	Reference
Southwestern Utah					
Unnamed cave in Cottonwood Canyon	Kanab area	1	Undated Pueblo I or Pueblo II context	Unburned pointed-toe plain-weave sandal; additional perishables might also date to this period	Judd 1926: pl. 57d
ZNP-21, Zion National Park	Parunuweap Canyon, East Fork Virgin River	2	Undated Pueblo I context	Unburned pointed-toe plain-weave sandal; additional perishables might also date to this period	Schroeder 1955:156, fig. 25, pl. 21b
Northwestern Arizona					
Antelope Cave	Arizona Strip	3	A.D. 900–1000	Unburned cordage, unburned pointed-toe plain-weave sandals	Janetski and Hall 1983; Janetski and Wilde 1989:101, fig. 8b; Yoder 2009, 2010
Northeastern Arizona					
Cave 1 (Grave 1, Burial 2)	Tsegi Canyon	4	A.D. 850–1000, based on presence of Kana-a and Wepo Black-on-white, Bluff or Deadman's Black-on-red, and Kana-a Gray neck-banded ceramics in grave	Unburned decorated coiled carrying basket, plaited ring basket with concentric diamond design, open-twined rush mat with braided edge, sleevelike cotton textile, painted cotton textile, undecorated cotton textiles, twined fur blanket, tapestry-woven tumpband of cotton and hair, undecorated yucca tumpband (weave unidentified), 2/2 twill-plaited sandal, possible 3/3 twill-plaited mat (see endnote 1); also a yucca-leaf ring, fire drill, broken bow and part of a second bow, pieces of dressed skin, wads of yucca fiber	Guernsey 1931:8–9, 92–99, fig. 28, pls. 10h, i; 13, right; 16, upper left; 54a; 58a; see also Peabody Museum Online Collections, http://www.peabody.harvard.edu/col/advanced.cfm; Peabody Museum ID# 20-5-10/A5040 through A5066, including A5058.2, A5058.3
Cave 1 (Burial 3)	Tsegi Canyon	4	A.D. 850–1000, based on presence of Kana-a or Wepo Black-on-white, and probable San Juan Red Ware	Unburned twined feather blanket, two twined fur blankets, coiled basket bowl	Guernsey 1931:9, 93, 96, pls. 16, upper left, lower basket, 54c; see also http://www.peabody.harvard.edu/col/advanced.cfm; Peabody Museum ID# 20-5-10/A5067 through A5071 (misattributed in ledger to Burial 2)
Cave 1, general digging	Tsegi Canyon	4	Undated Pueblo I context	Unburned fragment of base of large coiled carrying basket, pointed-toe plain-weave sandal, possible round-toe twined sandal with jog (see comments in text re: twined sandal)	Guernsey 1931:94, 96, pl. 57a, f ; see also http://www.peabody.harvard.edu/col/advanced.cfm; Peabody Museum ID# 20-5-10/A4978 (carrying basket fragment?), A5009 (jogged-toe twined sandal)
Water Fall Ruin (aka Floating House Ruin, Ruin 9, Nokito or Nockito Ruin)	Lower Chinle Valley	5	Undated Pueblo I context	Unburned feather ornament, handle-like cord loop, tapestry weave tumpband, twined tumpband, twined feather blanket, pointed-toe plain-weave sandals, possible open-twined reed mat (see comments in text re: mat)	Guernsey 1931:92–99, pls. 10a, c, f; 49e; 57c, d; 58b; Kidder and Guernsey 1919: pl. 39a (provenience of sandal A-1657 is identified as Ruin 9 in Appendix I); see also http://www.peabody.harvard.edu/col/advanced.cfm; Peabody Museum ID# 22-13-10/A5494, A5536, A5546, A5546.1, A5549, A5554, A5555, A5563

Table 9.1. (*cont.*)

Site	Location	Figure 9.1 Map Reference	Date range of Pueblo I artifacts	Artifact type	Reference
Site 10 (cave)	Middle Chinle Valley	6	Undated Pueblo I context	Unburned 2/2 twill-plaited sandal with elements turned up at heel	Morss 1927:13, pl. VIIa; see also http://www.peabody.harvard.edu/col/advanced.cfm; Peabody Museum ID# 25-4-10/A5944, site identified by its field number (Site 4) in ledger)
Site 11 (cave)	Middle Chinle Valley	7	Undated Pueblo I context	Unburned looped human hair sock or legging	Morss 1927:39; see also http://www.peabody.harvard.edu/col/advanced.cfm; Peabody Museum ID# 25-4-10/A5961
Antelope House	Canyon del Muerto	8	A.D. 825-early 900s	Unburned coiled baskets, 2/2 twill-plaited ring baskets, 2/2 twill-plaited mats, open-twined cattail mat, looped artifacts, including three human-hair socks, cotton plain-weave cloth, twined sandals, plain-weave sandal, 2/2 twill-plaited sandals	Adovasio and Gunn 1986:396, tables 136–138; Magers 1986:226, 238–239
Tseahatso Cave	Canyon del Muerto	9	A.D. 800s (corn bundle), undated Pueblo I context (basket)	Unburned decorated coiled basket, bundle of corn tied with yucca string (dated)	Morris and Burgh 1941: figs. 20, 24c; Smiley 1997:30
Cave 1, North Trail Canyon (also known as Twin Trails Canyon)	Canyon del Muerto	10	Undated Pueblo I context	Unburned coiled basket (see Morris and Burgh reference); unpublished collections include a twined sandal, braided band, woven tumpband, and knotted mat	Morris and Burgh 1941: figs. 20, 24a; Webster collections research at the American Museum of Natural History
Obelisk Cave	Prayer Rock District	11	Late A.D. 700s	Unburned braided sashes of dog hair, human hair, and cotton	E. A. Morris 1980:93–96, fig. 52; Freer and Jacobs, personal communication (revised date)
Chuska Valley					
LA 107466 (NM-H-50-112)	northern Chuska Valley	12	A.D. 775– early 800s	Carbonized cordage, twined sandals, coiled baskets, possible plaited ring basket	Webster 2000
San Juan Basin					
5SJ1679, LA 41679	Chaco Canyon	13	A.D. 875– 900	Pair of carbonized twined sandals, coiled basket	Judd 1924:411; Windes 2006 (revised date)
BC-50 (Tseh So)	Chaco Canyon	14	undated Pueblo I context	Carbonized 2/2 twill-plaited mats	Brand et al. 1937:146
Rio Puerco Valley					
White Mound Village	Rio Puerco Valley	15	A.D. 750–800	Carbonized twined sandals, probable plain-weave sandal	Gladwin 1945: pl. XX
Central Mesa Verde Region					
5MT8938	Montezuma Valley	16	A.D. 650–725	Carbonized twined sandals	Webster 1990
5MT23 Grass Mesa Village	Dolores River Valley	17	A.D. 860–880s	Carbonized cordage, 2/2 twill-plaited sandals, possible twined sandals, knotted mats, twined mat, coiled baskets, 2/2 twill-plaited ring basket with possible band design, looped bag	Blinman 1986; Lightfoot et al. 1988:580, fig. 7.8, table 7.2; Webster 2006a, 2009

Table 9.1. (*cont.*)

Site	Location	Figure 9.1 Map Reference	Date range of Pueblo I artifacts	Artifact type	Reference
5MT2151 LeMoc Shelter	Dolores River Valley	18	A.D. 700–925	Unburned cordage, 2/2 twill-plaited sandals, possible twined blanket, possible looped legging	Blinman 1986; Webster 2006a, 2009
5MT2182 Rio Vista Village	Dolores River Valley	19	A.D. 790–900	Carbonized cordage, possible twined sandal, knotted mat, coiled baskets, twined blanket	Blinman 1986; Webster 2006a, 2009
5MT2193 Dos Casas Hamlet	Dolores River Valley	20	A.D. 760–770	Carbonized coiled baskets	Blinman 1986; Webster 2006a, 2009
5MT4475 McPhee Pueblo	Dolores River Valley	21	A.D. 880–910	Carbonized cordage, twined sandals, coiled baskets	Blinman 1986; Webster 2006a, 2009
5MT4477 Masa Negro Pueblo	Dolores River Valley	22	A.D. 860–925	Carbonized cordage, coiled baskets	Blinman 1986; Webster 2006a, 2009
5MT4613 Pozo Hamlet	Dolores River Valley	23	A.D. 700–720	Carbonized twined sandal	Blinman 1986; Webster 2006a, 2009
5MT4644 Windy Wheat Hamlet	Dolores River Valley	24	A.D. 775–830	Carbonized cordage, twined sandals, coiled baskets	Blinman 1986; Webster 2006a, 2009
5MT5106 Weasel Pueblo	Dolores River Valley	25	A.D. 865–900	Carbonized coiled baskets	Blinman 1986; Webster 2006a, 2009
5MT5107 Pueblo de las Golondrinas	Dolores River Valley	26	A.D. 830–870	Carbonized possible 2/2 twill-plaited mat, coiled baskets	Blinman 1986; Webster 2006a, 2009
5MT5108 Golondrinas Oriental	Dolores River Valley	27	A.D. 850–900	Carbonized coiled baskets	Blinman 1986; Webster 2006a, 2009
Morris 23	La Plata River Valley	28	late A.D. 700s	Carbonized coiled basket	E. H. Morris 1939:117; Morris and Burgh 1941:18, figs. 6c–e, 20
Morris 33	La Plata River Valley	29	A.D. 800s	Carbonized coiled basket	E. H. Morris 1939:117–118, Morris and Burgh 1941: fig. 20
Eastern Mesa Verde Region					
5LP187	Animas River Valley	30	A.D. 750–820	Carbonized cordage, coiled baskets, 2/2 twill-plaited sandals, possible 2/2 twill-plaited mat, 2/2 twill-plaited ring baskets, looped bag	Webster 2009
5LP237	Animas River Valley	31	A.D. 750–820	Carbonized coiled basket, twined feather blanket	Webster 2009
5LP246	Animas River Valley	32	A.D. 750–820	Carbonized possible 2/2 twill-plaited mat, coiled baskets	Webster 2009
5LP2026	Animas River Valley	33	A.D. 750-820	Carbonized coiled basket, possible 2/2 twill-plaited ring basket	Webster 2009
5LP110	Animas River Valley	34	A.D. 775–800	Carbonized 2/2 twill-plaited sandal or mat, coiled basket	Gooding 1980; Larralde 1980
5LP379	Animas River Valley	35	A.D. 800–850	Carbonized 2/2 twill-plaited sandals, twined sandal, coiled basket, possible twined blanket	Silverman et al. 2003; Webster 2003, 2009
LA 27092	Animas River Valley	36	A.D. 800–825	Carbonized cordage, 2/2 twill-plaited sandal, coiled baskets, looped bag	Silverman et al. 2003; Webster 2003, 2009
LA 4055	Pine River drainage	37	A.D. 750–850	Unburned cordage, possible 2/2 twill-plaited sandal (originally identified as Navajo)	Eddy 1966:148; Webster 2006b, 2009
LA 4065 Prayer Stick Shelter	San Juan River drainage	38	A.D. 850–900	Unburned cordage, 2/2 twill-plaited sandals (originally identified as Navajo)	Eddy 1966:145–160; Hester 1962:122, fig. 44; Webster 2006b, 2009

Table 9.1. (*cont.*)

Site	Location	Figure 9.1 Map Reference	Date range of Pueblo I artifacts	Artifact type	Reference
LA 4086 Sanchez Site	between Piedra and San Juan river drainages	39	A.D. 900–950	Carbonized cordage, coiled baskets	Eddy 1966:168, 177; Webster 2006b, 2009
LA 4298 Todosio Rock Shelter	Pine River drainage	40	A.D. 850–950	Unburned 2/2 twill-plaited sandals (originally identified as Navajo)	Hester and Shiner 1963:63; Webster 2006b, 2009
LA 4380 Bancos Village	San Juan River drainage	41	A.D. 875–900	Carbonized cordage, coiled baskets, possible looped bag	Eddy 1966:427; Webster 2006b, 2009
LA 4408 Serrano Site	Piedra River drainage	42	A.D. 800–900	Carbonized 2/2 twill-plaited sandal, coiled basket	Dittert and Eddy 1963:75; Webster 2006b, 2009
LA 4411	San Juan River drainage	43	Pueblo I?	Unburned 2/2 twill-plaited sandal (originally identified as Navajo)	Hester and Shiner 1963:27-29; Webster 2006b, 2009
LA 82643 La Manga Rockshelter	Pine River drainage	44	Pueblo I– Pueblo II?	Unburned 2/2 twill-plaited sandals	Cornelius 1938; discussed in Webster 2009
LA 127740	Pine River drainage	45	Pueblo I– Pueblo II?	Unburned 2/2 twill-plaited sandals	Unpublished; discussed in Webster 2009

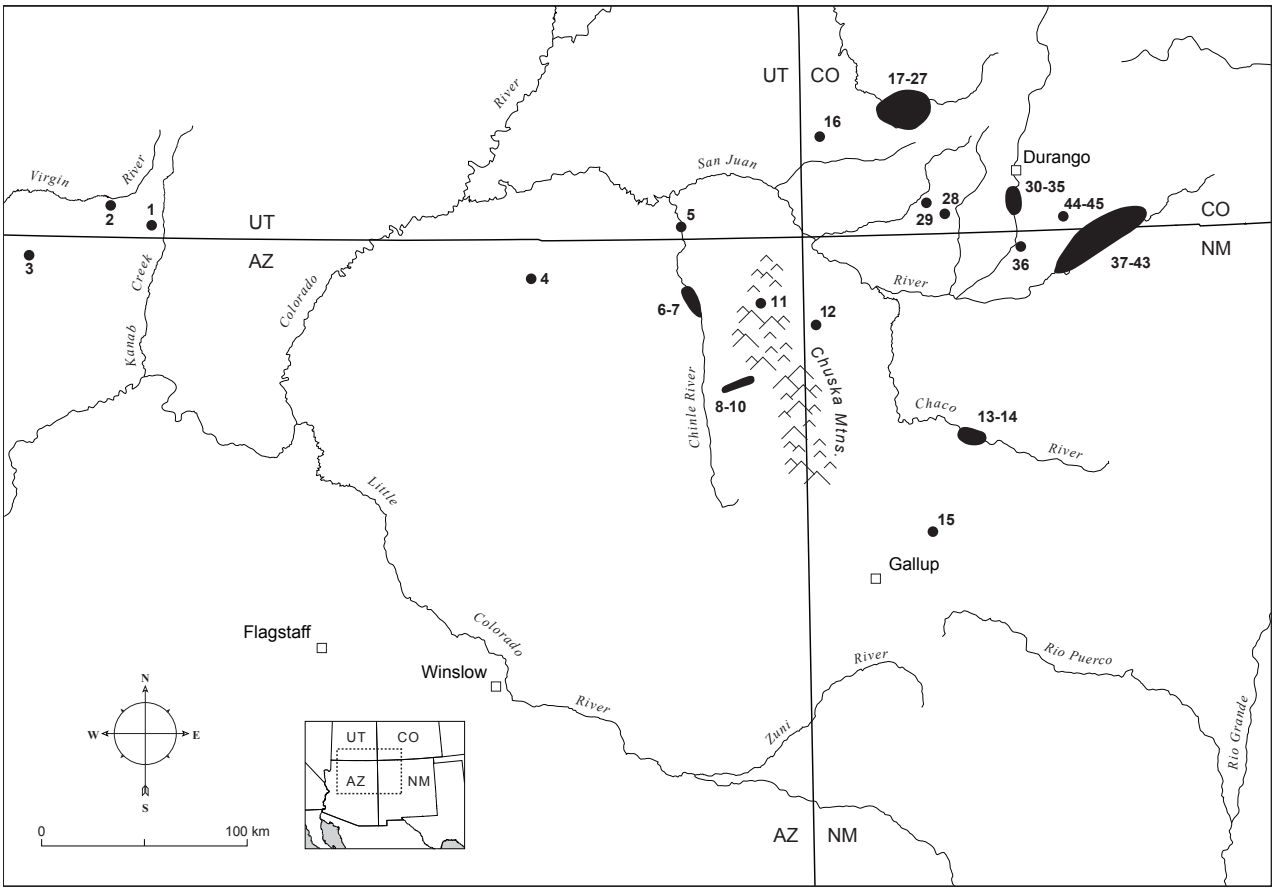


Figure 9.1. Location of Pueblo I sites with evidence of textiles and basketry. Numbers are keyed to Table 9.1.

at Antelope House, it is likely that that the large, unstudied perishable collections from Tseahatso Cave, Mummy Cave, and other caves in Canyon del Muerto also contain considerable quantities of perishables dating to this period. Morris and Burgh (1941) attributed a few of these artifacts to the Pueblo I period (see Table 9.1). Although the early collections from the Tsegi and Chinle drainages are some of the best preserved, they are also poorly dated. Recently, Smiley (1997:30) reported an A.D. 800s accelerator mass spectrometer (AMS) date from a bundle of corn with yucca cordage from Tseahatso Cave, but additional AMS dating is required to identify a broader sample.

The most important Pueblo I perishable assemblage on the Colorado Plateau from a chronological, informational, and preservation standpoint is that associated with a late Pueblo I female burial in Cave 1, Tsegi Canyon (Guernsey 1931:8–9, pls. 7, lower, 12). As it was in Guernsey's time, this is still the only Pueblo I interment that has been found with significant quantities of well-preserved perishables. The individual, identified as a young woman about 18 years of age with her hair bound up in two bobs or whorls, was interred between two large rocks in a cavity that was roofed over with poles covered with reeds and bark. A large decorated coiled carrying basket (Figure 9.2c, see color plates) was inverted over the body. Additional textile and basketry accompaniments attributed to this burial in the Peabody Museum ledger (not all discussed in Guernsey 1931)[1] are a plaited ring basket, two rush mats, a plaited mat,[2] a twined fur robe, two woven tumpbands, a plaited sandal, and several cotton textiles (see Figures 9.4b, 9.5b, 9.10b, 9.11a-c, 9.12a-b, see colors plates). Other perishable accompaniments include a broken bow and a piece of another, part of a fire drill, pieces of tanned hide, a yucca leaf ring, wads of yucca fiber, and various food offerings. Ceramics associated with the burial include a Kana-a gray neck-banded pitcher, a Bluff or Deadmans Black-on-red decorated red ware pitcher, and Kana-a and Wepo black-on-white vessels, consisting of three bowls and a jar (Guernsey 1931: pls. 14b, j, k, o, 15a, d).[3] The ceramics suggest a date range of A.D. 850–1000, most likely A.D. 900–1000, for the burial. The burial and its associated perishables appear to date to the late Marsh Pass phase (Kana-a ceramic period) or Wepo phase in the Kayenta region, a time of transition between Pueblo I and Pueblo II (Phil Geib, personal communication). Therefore, the assemblage is not representative of the Pueblo I period as a whole.

Well-preserved assemblages of Pueblo I sandals were also recovered from rock shelters in the eastern Mesa Verde region of southwestern Colorado. Although attributed to the Navajo occupation in the published literature (Hester and Shiner 1963:63, 65, fig. 56), several sandals were recently AMS-dated to the Pueblo I period (Webster 2009:114–115, figs. 4.28b, d, f). Another large assemblage of unburned late Pueblo I sandals is known from Antelope Cave on the Arizona Strip of northwestern Arizona (Janetski and Wilde 1989; Yoder 2009, 2010). Four of those sandals were also AMS-dated (Yoder 2010: table 1). Little is known about other kinds of Pueblo I perishables from the eastern Mesa Verde region or west of the Colorado River.

Sizable assemblages of carbonized sandals, mats, baskets, and bags have been recovered from burned Pueblo I pit structures in the Chuska Valley of northwestern Arizona and the Dolores and Animas River drainages of southwestern Colorado, but the condition of these artifacts is poor (Table 9.1). Only sketchy information is available from Chaco Canyon and the Rio Puerco of western New Mexico. Even less is presently known about Pueblo I perishables in southeastern Utah and other parts of the Colorado Plateau. Pueblo I perishables are certainly present in some of the early cave collections from southeastern Utah, but direct AMS dating is required to identify them. Unfortunately, no carbonized perishables were reported from the important Pueblo I village of Alkali Ridge.

In the following sections I draw from these unevenly distributed and incomplete data to summarize what is presently known about the production of baskets, mats, sandals, and woven textiles during the Pueblo I period on the Colorado Plateau. At the end of the chapter, I offer some preliminary observations about stylistic and technological variability across the region and the implications of these

patterns for understanding Pueblo I social group boundaries and cultural identities. A more detailed study of perishables in the central and eastern Mesa Verde regions is provided in Webster (2009).

Baskets and Mats

Coiled Baskets

Coiling was the most common technique for the manufacture of basketry containers during Pueblo I, continuing a tradition established on the Colorado Plateau thousands of years earlier (Geib and Jolie 2008). As in the preceding Basketmaker III period, the dominant coiled basketry foundation structure during Pueblo I was a two-rod-and-bundle (or welt) bunched foundation with noninterlocking stitches (Morris and Burgh 1941:12) (Figure 9.2a, see color plates). Pueblo I examples are reported from Tsegi Canyon (Guernsey 1931:95–96), Canyon del Muerto (Adovasio and Gunn 1986: table 137; Morris and Burgh 1941: figs. 20, 24c), the Chuska Valley (Webster 2000:936), the Dolores River Valley (Blinman 1986:55–58), the Animas River Valley (Webster 2003:2–6, figs. 3–9; 2009:99–102, table 4.9, figs. 4.17–4.20), the upper San Juan drainage (Eddy 1966:168, 177; Webster 2006b; Weltfish 1932:21), and Chaco Canyon (Judd 1924:410).

During the Basketmaker II period, this two-rod-and-bundle (or welt) foundation structure was most closely associated with the central and western Basketmaker regions (e.g., Guernsey and Kidder 1921; Kidder and Guernsey 1919; Morris and Burgh 1941; see also Matson 1991). In contrast, a half-rod-and-bundle stacked foundation with noninterlocking stitches dominated the coiled basket assemblage from the Basketmaker II Falls Creek rock shelters near Durango (Morris and Burgh 1954:68; see also Morris and Burgh 1941: fig. 3h). This basket structure is present on the Colorado Plateau by the Early Archaic period and is of greater antiquity than two-rod-and-bundle coiling (Geib and Jolie 2008:94–95). Interestingly, the half-rod-and-bundle foundation has yet to be identified in Pueblo I coiled basket assemblages from the Animas River Valley and the eastern Mesa Verde region (Webster 2009:102, table 4.10), even though it is present in small quantities in later assemblages from Mesa Verde and Aztec Ruins (Morris and Burgh 1941:11; Edward Jolie, personal communication). Present evidence suggests that the half-rod-and-bundle foundation was largely replaced by the more common two-rod-and-bundle (or welt) foundation in the Durango area sometime prior to the mid-eighth century.

The principal forms of Pueblo I coiled basketry made with this two-rod-and-bundle (or welt) foundation were trays, bowls, globular baskets, and carrying baskets, the same basic forms made during Basketmaker times (Morris and Burgh 1941: figs. 11, 19–20; Webster 2009:106). Well-preserved Pueblo I examples include an intricately decorated basket bowl with a red and black geometric design from Tseahatso Cave (Morris and Burgh 1941: figs. 20, 24c) (Figure 9.2b, see color plates), a large decorated carrying basket, oval in cross section, with a red and black banded design (Figure 9.2c, see color plates) from the aforementioned female burial in Cave 1, Tsegi Canyon, and an undecorated basket bowl from a child's burial at the same site (Figure 9.2d, see color plates) (Guernsey 1931:95–96, fig. 28, pl. 13, right, pl. 16, upper grouping, lower left). Part of another possible carrying basket was also found at the site (Guernsey 1931:96). Parching trays are also reported from Pueblo I contexts at Antelope House, but carrying baskets are not (Adovasio and Gunn 1986:384).

Although virtually all Pueblo I baskets from sites east of the Chuska Mountains are carbonized and fragmentary, it was sometimes possible to identify the original form from the shape of the object in the ground. Most of these baskets also appear to represent the remains of trays, bowls, and globular baskets (Figure 9.2e, see color plates). In addition, two large baskets, one with an oval base, from a pit structure at site LA 27092 in the lower Animas Valley (Webster 2003:4–6, figs. 4–8), are possible candidates for carrying baskets.[4] Carrying baskets are prevalent at classic Western Basketmaker sites, but were not found in the Falls Creek assemblage, nor are they present in Basketmaker rock art in the eastern Mesa Verde region (Sally Cole, personal communication). Their identification from LA 27092 is tentative. Morris and Burgh (1941:54)

speculated that carrying baskets acquired a ritual significance by Pueblo I.

A few coiled baskets with one-rod foundations (Figure 9.3a) are also reported from Pueblo I contexts on the Colorado Plateau. Examples are known from Cave 1, North Trail Canyon (now Twin Trails Canyon) in Canyon del Muerto (Morris and Burgh 1941: figs. 20, 24a) (Figure 9.3b), Grass Mesa Village in the Dolores River Valley (Blinman 1986:55–59; Lightfoot et al. 1988:580, fig. 7.8, table 7.2), and sites Morris 23 and Morris 33 in the La Plata Valley (Morris and Burgh 1941:18, fig. 20; E. H. Morris 1939:117–118, fig. 36). A fragmentary basket with a possible one-rod-and-bundle foundation is also reported from the late Pueblo I site of Bancos Village in the Navajo Reservoir District (Eddy 1966:427). All of these examples appear to be basket bowls. The one from North Trail Canyon has an oval center. All are close coiled with interlocking stitches except the example from Morris 23, which is woven in spaced coiling with an elaborate intricate stitch (Figure 9.3c, d). Morris and Burgh (1941:18) attributed all Southwestern examples of spaced coiling to the Basketmaker period, but the Morris 23 example extends this technology into early-to-mid Pueblo I (late A.D. 700s–early 800s), based on Chuipka's (2008a) revised dates for the site.

In summary, during the Pueblo I period, close coiling with a two-rod-and-bundle (or welt) foundation was the dominant construction technique in all

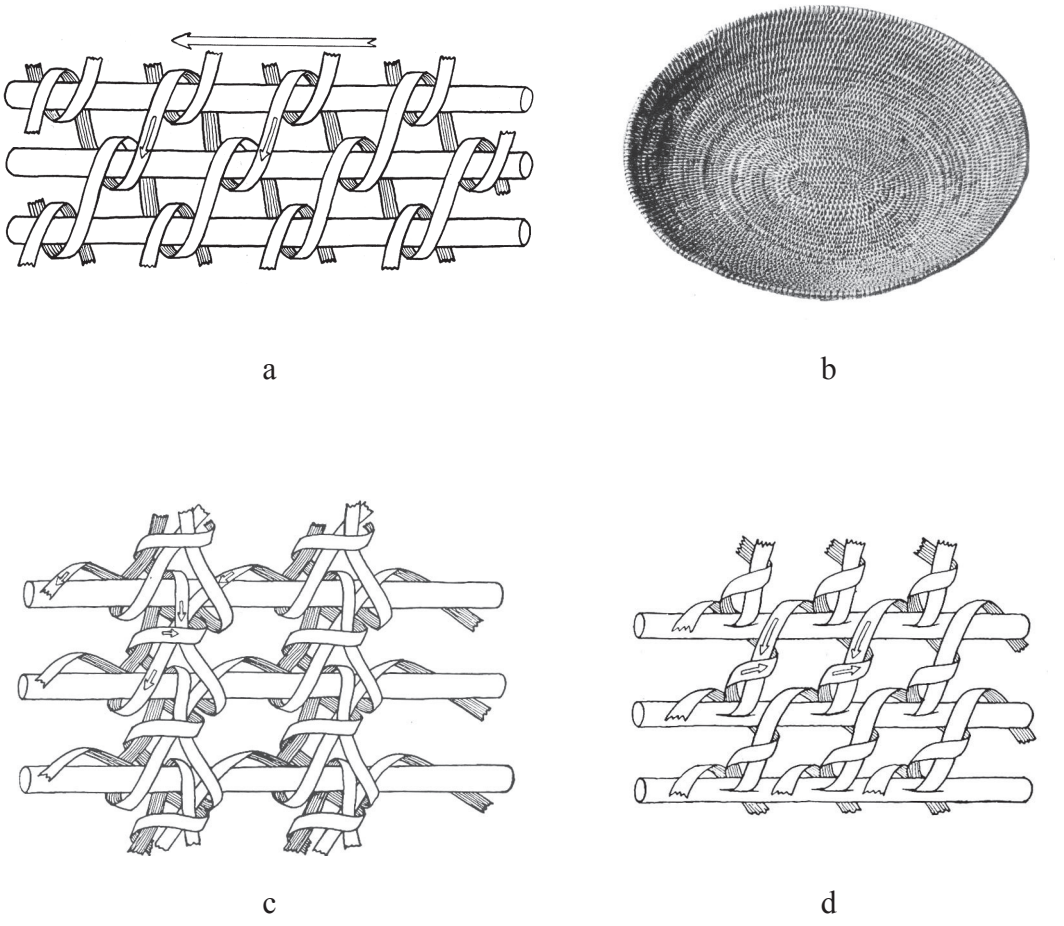


Figure 9.3. Coiled baskets with a one-rod foundation. (a) Schematic drawing of one-rod foundation with interlocking stitches; (b) basket bowl, Cave 1, North Trail Canyon, Canyon del Muerto (AMNH 29.1/3617); (c–d) schematic drawings of two variations of spaced coiling with an intricate stitch used in a basket bowl from Morris 23, La Plata Valley; (c) has interlocking stitches and was used for most of the basket; (d) has noninterlocking stitches and was used on the base (CU 3406) (adapted from Morris and Burgh 1941: figs. 3a, 24a, 6c, and 6e, respectively).

regions of the Colorado Plateau for which we have data. Closely associated with the central and western Basketmaker region during the Basketmaker II period, this foundation structure appears to have largely replaced earlier coiled basket structures in the Animas Valley and the Navajo Reservoir Project area sometime prior to the mid-eighth century. At least one basket form—the carrying basket—previously associated with Western Basketmaker groups, also appears to be present in the Animas Valley during the Pueblo I period, suggesting the eastward spread of some western-based ceremonial practices into the region.

Plaited Baskets

The earliest plaited baskets on the Colorado Plateau are small, baglike containers made of narrowleaf yucca plants with their leaves interlaced or braided together (e.g., Guernsey and Kidder 1921:63, pl. 23b). Ring baskets (also known as sifter baskets), composed of small mats folded and secured over a sturdy ring, made their appearance on the Colorado Plateau sometime during Basketmaker III. The earliest reported ring baskets, woven in 2/2 (over 2, under 2) and 3/3 (over 3, under 3) twill plaiting, are from the Prayer Rock District on the divide between the Carrizo and Lukachukai mountains (Morris and Burgh 1941:20, figs. 8, 22, 34; E. A. Morris 1980:138). In twill plaiting, the weaving elements in one direction pass over two or more elements in the other direction at staggered intervals, producing a diagonal pattern (see Adovasio 1977:99) (Figure 9.4a, see color plates).

Ring baskets are known from five Pueblo I sites on the Colorado Plateau. All but one of these baskets are woven predominantly in 2/2 twill plaiting. The exception, a small, unburned ring basket with a concentric diamond design, was associated with the aforementioned female burial in Cave 1, Tsegi Canyon, which appears to date to the interval A.D. 850–1000 (Guernsey 1931:97, pl. 16) (Figure 9.4b, see color plates). Adovasio and Gunn (1986:396) report 2/2 twill-plaited ring baskets from Pueblo I contexts at Antelope House in Canyon del Muerto. A probable carbonized example is also known from LA 107466 (NM-H-50–112) in the northern Chuska Valley (Webster 2000:938).[5] Farther east, a 2/2 twill-plaited ring basket with a possible band design was recovered from Grass Mesa Village in the Dolores River Valley (Blinman 1986:55, fig. 2.3). The Animas–La Plata Project recovered at least one, and possibly two, 2/2 twill-plaited ring baskets from 5LP187 in Ridges Basin and another possible example from 5LP2026 on Blue Mesa (Webster 2009:116–117, table 4.12, figs. 4.29–4.31). The best-preserved basket from 5LP187 (Figure 9.4c, see color plates) shares its relatively large size and a similar rim-selvage construction with Basketmaker III baskets from the Prayer Rock District and the Pueblo I basket from Grass Mesa Village.

No definite examples of Pueblo I ring baskets are reported from southeastern Utah, but some large plaited trays in the unpublished Grand Gulch collections at the American Museum of Natural History closely resemble the Prayer Rock examples and could easily date to the Basketmaker III or Pueblo I period. To my knowledge, no Basketmaker or Pueblo I plaited ring baskets have been recovered from sites east of the Animas Valley (e.g., alcoves in the Navajo Reservoir area) or west of the Colorado River (e.g., Antelope Cave), nor are any reported in the sparse Pueblo I perishables literature from Chaco Canyon. Ring baskets may have been in use at Chaco by this time, however, given their substantial presence in Pueblo II contexts there (Brand et al. 1937:98; Judd 1954:160). Present evidence suggests that plaited ring baskets were not a significant artifact form on the eastern and western fringes of the Colorado Plateau during the Pueblo I period.

Twined, Knotted, and Plaited Mats

Most Basketmaker mats on the Colorado Plateau are open-twined constructions of parallel bundles of grass, juniper bark, or other soft plant material held in place by spaced rows of leaf or cordage elements worked in two-strand twining (Figure 9.5a) or tied in overhand knots, the latter technique also referred to as tied twining (E. A. Morris 1980:122–123; Morris and Burgh 1954:66, fig. 99b; Nusbaum 1922:98–101, figs. 13–15, pls. L, LII). Twill-plaited mats seem to make their appearance on the Colorado Plateau during the late Basketmaker III

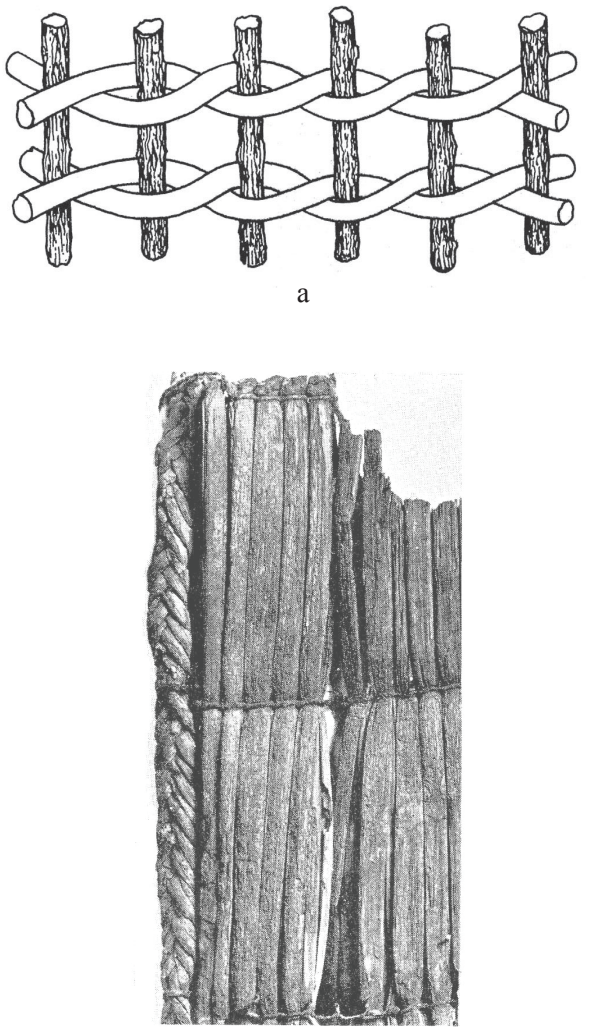


Figure 9.5. Twined matting. (a) Schematic drawing of open simple twining with S-twist wefts (from Adovasio 1977: fig. 7b); (b) open-twined rush mat with S-twist wefts, Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5048 (from Guernsey 1931: pl. 58a).

period. Adovasio and Gunn (1986:390–391) report 2/2 twill-plaited mats from Basketmaker III contexts at Antelope House, including at least one with an intricate selvage, a common feature of later Pueblo period plaited mats. The late Basketmaker III site of LA 61955 in the southern Chuska Valley also produced a large carbonized piece of a probable 2/2 twill-plaited mat (Webster 1999a:200; fig. 4.5b). Plaited mats are reported as mortuary wrappings at two Basketmaker III Sambrito phase sites in the Navajo Reservoir District, LA 4169 (the Oven Site) and LA 4298 (Todosio Rock Shelter) (Eddy 1966:225, 481; Hester and Shiner 1963:53–65, table 1). Although poorly preserved, both mats appear to be woven in a 2/2-twill weave (Webster 2006b).

The Pueblo I period appears to be the time when plaited mats began to surpass open-twined and knotted mats in popularity. All three types of mats are reported from Pueblo I sites on the Colorado Plateau. Guernsey (1931: pls. 54d, 58a) reported an open-twined rush mat with a plaited (braided) border from the female Pueblo I burial at Cave 1, Tsegi Canyon (Figure 9.5b); the Peabody Museum ledger also attributes a 3/3 twill-plaited mat to this burial (but see note 2). Guernsey (1931: pl. 58b) also reported an open-twined reed mat from Water Fall Ruin in the lower Chinle Valley, but there are questions about its dating.[6] Adovasio and Gunn (1986:311, 378, 396, table 136) report 2/2 twill-plaited mats, some with intricate selvages, from Pueblo I contexts at Antelope House, but only one example of an open-twined mat and no knotted ones. A knotted mat (AMNH 29.1/3615) that may date to Pueblo I is present in Earl Morris's unpublished collections from Cave 1, Trail Canyon in Canyon del Muerto at AMNH, based on Morris and Burgh's (1941: fig. 20) attribution of a coiled basket from this cave to this period.

In the Dolores River Valley, Pueblo de las Golondrinas in the McPhee Village cluster produced the possible remains of twill-plaited matting, but no knotted or twined examples. Conversely, nearby Grass Mesa Village on the east side of the river produced the remains of at least one knotted mat and a probable open-twined mat, but no definite twill-plaited examples (Blinman 1986; Webster 2006a). Pueblo I sites in the Animas River Valley yielded several twill-plaited baskets and sandals, but no definite plaited mats or any twined or knotted ones (Webster 2009). Farther south, twill-plaited mats were reported in association with late Pueblo I burials at Tseh So (Bc 50) in Chaco Canyon (Brand et al. 1937:146).

The scarcity of reported plaited mats from Pueblo I sites east of the Chuskas may be more apparent than real, given the difficulty of identifying the original

form of a plaited object from small, carbonized fragments when the selvages are missing. During the Pueblo II period, plaited rush mats were the dominant form of matting throughout the San Juan region (Adovasio and Gunn 1986; Judd 1954; E. H. Morris 1919a). Thereafter, twined and knotted matting techniques were retained primarily for specialized forms, such as reed containers and rush panniers (e.g., Judd 1954:49–50, pl. 9; E. H. Morris 1919a:59, fig. 37; cf. Osborne 2004:277–280, fig. 189).

Sandals

Three main types of sandals are reported from Pueblo I sites on the Colorado Plateau: twill-plaited sandals, twined sandals, and a distinctive style of plain-weave sandal with a rounded or pointed toe (Figures 9.6–9.8). During the Pueblo I period, these sandal styles were differentially distributed on the Colorado Plateau, with twill-plaited sandals more common in the east and twined and plain-weave sandals more common in the west. Because sandals appear to have served as important markers of social group identity in the Southwest (Haury 1950:439; Hays-Gilpin et al. 1998; Webster 2009:129–131; Webster and Hays-Gilpin 1994), their distribution provides important clues for understanding cultural identities and social group boundaries during the Pueblo I period.

Twill-Plaited or Braided Sandals

The earliest reported examples of twill-plaited, or braided, sandals in the Northern Southwest are from the Basketmaker II Falls Creek rock shelters near Durango (Morris and Burgh 1954:64, figs. 33, 99e).[7] These coarse yucca sandals are woven in 2/2 twill plaiting (Figure 9.4a, see color plates) and have square toes and a distinctive heel finish made by gathering the elements into a bundle and wrapping them crosswise. Large assemblages of twill-plaited sandals are also attributed to Basketmaker III sites in the Prayer Rock District (E. A. Morris 1980), where they co-occurred with twined and plain-weave sandals. Elizabeth Morris identified four styles of plaited or braided sandals in the Prayer Rock assemblage: Type 1, consisting of coarse yucca elements worked in 1/1 diagonal plaiting with the elements turned up at the heel (E. A. Morris 1980: fig. 78a); Type 2, woven in 2/2 twill plaiting with a square toe and cross-wrapped heel (E. A. Morris 1980: figs. 79a, c); Type 3, woven in 2/2 twill plaiting with fine yucca elements, a cupped heel, and a pointed toe (E. A. Morris 1980: fig. 79b); and Type 4, similar to Type 3 but with a rounded toe. Morris attributed these sandals to the Basketmaker III occupation of the caves, but none have been directly dated. Morris's Type 1 style resembles 1/1 diagonally plaited sandals from the Mogollon region (e.g., Martin et al. 1952:237, figs. 91–94), and her Type 2 sandals closely resemble the Falls Creek examples (compare E. A. Morris 1980: fig. 79a, and Morris and Burgh 1954: fig. 33; see also Baldwin 1939a for Earl Morris's suggestion that this style could date to the late Basketmaker or Pueblo I period). A few unpublished examples of these Type 2 sandals are also present in the collections of the Edge of the Cedars Museum and the University of Pennsylvania Museum. The sandals are unprovenienced, but are most likely from southeastern Utah. Morris's more finely woven Type 3 and Type 4 sandals resemble Pueblo II sandals on the Colorado Plateau and may postdate the Basketmaker occupation of the caves. These Type 3 and Type 4 sandals are the forerunners of the jog-toed style that became prominent throughout the Four Corners region during late Pueblo II (e.g., Pepper 1920: fig. 34).

Although twill-plaited sandals are attributed to Basketmaker II contexts at the Falls Creek rock shelters, none have been identified at Basketmaker III sites in the Montezuma Valley, Dolores River Valley, or at Mesa Verde. Instead, twined sandals seem to predominate at these sites during late Basketmaker III. The earliest reported twill-plaited sandals from the central Mesa Verde region are from the late Pueblo I site of Grass Mesa Village in the Dolores River Valley (Lightfoot et al. 1988: figs. 7.9, 7.11; Webster 2006a). These coarse sandals are woven in 2/2 diagonal twill, some have cupped heels, and several exhibit a distinctive double 90-degree self-selvage in which the elements turn alternately toward the upper and lower faces before reentering the weave (Adovasio 1977:112; Webster 2006a,

2009:111, table 4.13, figs. 4.21e, 4.26) (Figure 9.6a, see color plates). Despite the apparent prevalence of 2/2 twill-plaited sandals at Grass Mesa Village, only one small fragment of 2/2 twill plaiting was identified at the contemporaneous Pueblo I site of McPhee Pueblo on the west side of the Dolores River (Webster 2006a, 2009:131).

No twill-plaited sandals are reported from Pueblo I sites in the La Plata drainage, but the remains of eight probable coarse 2/2 plaited sandals were recovered from early Pueblo I sites in Ridges Basin near Durango during the ALP Project (Webster 2009:107–109, table 4.12, figs. 4.21–4.23) (Figure 9.6b, see color plates). Three other coarse examples were recovered from nearby site 5LP379 on Blue Mesa during the Rocky Mountain Expansion Loop Pipeline Project (Silverman et al. 2003:4-34 through 4-36, fig. 4–30; Webster 2003:15–17, figs. 25–28; 2009:114, table 4.13, fig. 4.27a) (Figure 9.6c, see color plates). This same project recovered a finer 2/2 twill-plaited sandal from LA 27092 north of Aztec, New Mexico (Webster 2003:17, fig. 29; 2009:114, table 4.13, fig. 4.27b). Like the DAP examples, several of these sandals have cupped heels and double 90-degree self-selvages.

The Navajo Reservoir Project recovered more than 30 unburned 2/2 twill-plaited sandals from four rock shelters in the Navajo Reservoir District: LA 4055, LA 4065 (Prayer Stick Shelter), LA 4298 (Todosio Rock Shelter), and LA 4411 (Eddy 1966:156; Webster 2006b, 2009:114, table 4.13, fig. 4.28). Two distinct sandal styles are represented: a finely plaited sandal with a tapered toe and cupped heel, and a coarse plaited sandal with a square or rounded toe and a cupped heel, the latter typically exhibiting a double 90-degree self-selvage (Figure 9.6d). Excavators attributed these sandals to the Navajo occupation (Eddy 1966:156, 159; Hester and Shiner 1963:63, 65, fig. 56). Similarities between these sandals and Pueblo I examples from the Dolores and Animas River valleys, bolstered by the known presence of a carbonized 2/2 twill-plaited sandal from the Pueblo I Serrano Site (LA 4408) in the Piedra River section (Dittert and Eddy 1963:75; Webster 2009: fig. 4.28g), led me and Bureau of Land Management archaeologist James Copeland to submit samples of five Navajo Reservoir Project sandals for AMS dating.[8] Three sandals with square toes, cupped heels, and double 90-degree self-selvages produced calibrated dates of A.D. 660–870, A.D. 770–940, and A.D. 770–950 at 2 sigma, placing them in the Pueblo I period (Webster 2009: fig. 4.28b, d, f), whereas two sandals with tapered toes, cupped heels, and no double selvages produced dates indicative of the Pueblo II period (e.g., Webster 2009: fig. 4.28a).

Additional collections of unburned plaited sandals were recovered by amateurs from two rock shelters in the Pine River drainage, La Manga Rockshelter (LA 82643) in Pump Canyon, and LA 127740, in a tributary of Little Pump Canyon. One hundred seventeen plaited sandals, now in the collections of the San Diego Museum of Man, were reportedly removed from La Manga Rockshelter during the 1930s (Cornelius 1938). More recently, smaller collections of sandals from these rock shelters were seized as part of an Archaeological Resources Protection Act (ARPA) investigation. Five of the ARPA-collection sandals were also AMS-dated, producing late Basketmaker III, Pueblo II, and Pueblo III periods dates. Interestingly, none of these sandals exhibit the double selvage feature observed in the Pueblo I sandals from the DAP, ALP, Navajo Reservoir Project, and the Rocky Mountain Expansion Loop Pipeline Project.

Pueblo I plaited sandals recovered by the DAP, ALP, Navajo Reservoir Project, and Rocky Mountain Expansion Loop Pipeline Project share a number of distinctive technological and stylistic features. Many have a square toe, a rounded or cupped heel, and a double 90-degree self-selvage (e.g., Figure 9.6d, see color plates). These features characterize a distinctive Pueblo I style of sandal that appears to have extended from portions of the central Mesa Verde region into the eastern Mesa Verde region. Their distribution suggests a cultural relationship among Pueblo I groups in the Animas and upper San Juan drainages and some groups in the Dolores River Valley, especially the inhabitants of Grass Mesa Village. Based on tree-ring dates, this style appears to be earlier in the Animas drainage (A.D. 750–820 for the ALP

sandals and A.D. 800–850 for the Rocky Mountain Expansion Loop Pipeline Project sandals) than in the Dolores River Valley (A.D. 860–890 for the Grass Mesa Village sandals). The less precise AMS dates (A.D. 660–950 cal at 2 sigma) suggest that this style could have spanned the entire Pueblo I period in the eastern Mesa Verde region. For a more detailed discussion of twill-plaited sandals from the Dolores, Animas, and eastern Mesa Verde regions, see Webster (2009:109–116, 129–131).

Morss (1927:13, 39, pl. VIIa) reported a different style of 2/2 twill-plaited sandal from the Pueblo I site of Cave 10 in Chinle Wash (Figure 9.6e, see color plates). That sandal is more coarsely woven than the central and eastern Mesa Verde examples, and the elements are turned up at the heel, rather than cupped. This is a more expedient type of sandal than those just discussed. Guernsey attributed a similar sandal to the Pueblo I female burial from Cave 1, Tsegi Canyon.[9] Elizabeth Morris's (1980: fig. 98a) Type 1 plaited sandals from the Prayer Rock District have a similar heel finish, but these sandals are woven in 1/1 diagonal plaiting rather than 2/2 twill-plaiting. Plaited sandals with a turned-up heel are also reported from the eastern Mesa Verde region (Cornelius 1938: Type I, 76, pl. I, figs. 1–12) and the Mogollon region (Martin et al. 1952:237, figs. 91–94). The chronology of these 2/2 twill-plaited sandals with a turned-up heel is not well understood. At this point, they seem to make their appearance during Basketmaker III or Pueblo I and continue into the later Pueblo periods (Kankainen 1995:105, 111, 112, 120; Kidder and Guernsey 1919:101, pl. 35, Type 1a1; Magers 1986: table 112; Osborne 2004: figs. 98d–f, 100, 101).

In summary, present data suggest that twill-plaited sandals are earlier in the eastern Mesa Verde region than they are in the west. This observation rests on data from just one site, however, and those sandals have yet to be directly dated.[10] Moreover, none of the twill-plaited sandals from the large cave collections from southeastern Utah, the Prayer Rock District, or Canyon del Muerto have been directly dated. If and when they are, this interpretation may change. The western extent of twill-plaited sandals on the Colorado Plateau during the Pueblo I period is presently unknown. No examples are reported from Antelope Cave on the Arizona Strip (Janetski and Wilde 1989) or from Lost City in southern Nevada (Shutler 1962). Judd (1926: pl. 57c) illustrates a possible example from the vicinity of Kanab, Utah, but it most likely dates to the Pueblo II period. At this point, twill-plaited sandals appear not to have been a significant sandal form on the western Colorado Plateau during Pueblo I.

Twined Sandals

Just as twill-plaited sandals appear to be more closely associated with the eastern regions of the Colorado Plateau during the Basketmaker periods, twined sandals are more closely linked to western groups. Twined sandals appear on the Colorado Plateau sometime during the Basketmaker II period, with square-toe examples reported as far west as the Moapa Valley and as far east as Canyon del Muerto (Kankainen 1995; Nusbaum 1922; Winslow 2003). The most elaborate examples have a thick fringe of buckskin or colored cords at the toe or an intricate lacing system (Guernsey 1931: pl. 47d; Nusbaum 1922: pl. XXXVI). By mid-to-late Basketmaker III, twined sandals are documented as far east as the Chuska Valley, the Montezuma Valley, the Dolores River Valley, and Mesa Verde (E. A. Morris 1980; Nordenskiöld 1893; Webster 1999a, 1999b, 2004a, 2004b, 2004c, 2006a). Highly simplified versions of Basketmaker-style scallop-toed sandals were also worn in parts of the Mogollon Highlands (Martin et al. 1952: fig. 97).

Incorporating twining (Figure 9.7a, see color plates), plain-weave, and weft-wrapping structures, Basketmaker III twined sandals are arguably the most technologically complex and labor intensive textiles ever made in the Southwest and among the most highly ornate. The most elaborate examples have a colored geometric design on the upper face and a raised geometric design on the sole (Hays-Gilpin et al. 1998; Webster and Hays-Gilpin 1994). Clay tablets impressed with raised sandal-sole designs have been recovered from a number of Basketmaker III sites in the Four Corners region (e.g., Baldwin 1939b; Benham 1966; Davis and Cassells 1985; Gerwitz 1982; Hurst 2004; J. N.

Morris 1991a; Webster 1999b; see Hurst 2004 for an excellent summary). Described in the early literature as "sandal lasts" (e.g., Snyder 1899), these tablets may have been used to record sandal patterns or might have served a ceremonial function related to their iconography. The presence of sandal-shaped objects of wood and stone at many Pueblo II and Pueblo III sites (e.g., Judd 1954: pl. 81; 1959: fig. 29, pl. 42h; Osborne 2004:477–481) suggests that sandals, or at least certain styles of sandals, were of symbolic, if not ritual, importance. The degree of labor investment and specialized technical knowledge required to produce twined sandals, together with their elaborate designs, implies a significance beyond that of ordinary footwear.

Pueblo I examples of twined sandals are reported from the Tsegi and Chinle drainages (Guernsey 1931: pl. 57f; Magers 1986:262) (Figure 9.7b, see color plates), the eastern slope of the Chuska Mountains (Webster 2000:931–936) (Figure 9.7c, see color plates), the Dolores River Valley (Webster 2006a, 2009:131), Chaco Canyon (Judd 1924:411), and as far south as the Rio Puerco of the West (Gladwin 1945: pl. XXa, c, d). Only one example is reported from the Animas Valley (Silverman et al. 2003; Webster 2003) (Figure 9.7d),[11] and no twined sandals were identified in the sizable ALP assemblage. Significantly, none are reported for any time period in the Navajo Reservoir Project area. Present evidence suggests they were extremely rare in the eastern Mesa Verde region.

The only nearly complete twined sandal attributed to a Pueblo I context is that illustrated by Guernsey (1931: pl. 57f) from Cave 1, Tsegi Canyon (Figure 9.7b, see color plates). This sandal has a rounded toe, the remains of double toe loops, the hint of a toe jog, and is contoured for the right foot. If this sandal indeed dates to Pueblo I, then it is the earliest known jogged-toe sandal identified from the Southwest.[12] Unfortunately, there are questions about its dating. Earl Morris identified a relatively complete twined sandal with a rounded toe (AMNH 29.1/3621) from Cave 1, Trail Canyon, as "pre-Pueblo" in the museum catalog, but because the outer edge of the toe is missing, it is not known if that sandal had a jogged toe. A similar situation applies to the sandal from the Animas Valley, which also has a rounded toe (Figure 9.7d, see color plates). Magers (1986:264, table 114) reported that 33 percent of the Pueblo I through early Pueblo III twined sandals from Antelope House have a jogged toe, but she did not specify whether this feature was present on any of the Pueblo I sandals, nor did she illustrate any Pueblo I examples. Only one of the Pueblo I carbonized sandals recovered from the Chuska Valley had an intact toe, and that toe, from LA 107466 (NM-H-50-112), was scalloped (Webster 2000:934, fig. 20.1d) (Figure 9.7c, see color plates).[13] With its scalloped toe and zoned layout, this latter sandal is virtually indistinguishable from Basketmaker III scalloped-toe sandals. The pit structures that produced this and the other twined sandals from LA 107466 were occupied between A.D. 775 and the early A.D. 800s (Waseta and Ruppé 2000:418–419). The Animas Valley sandal dates to the period A.D. 800–850 (Silverman et al. 2003).

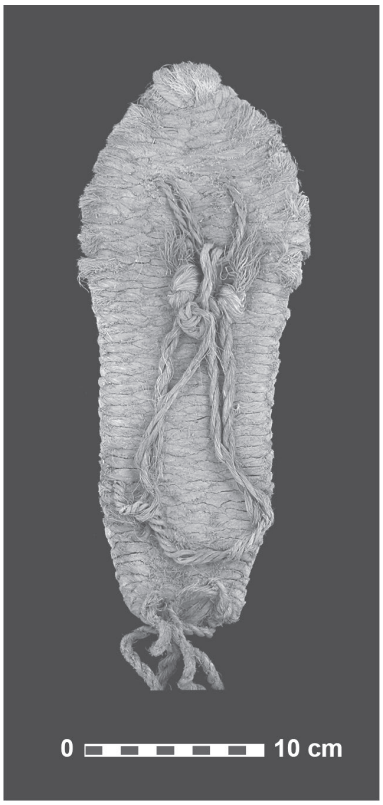
In addition to these documented Pueblo I examples, numerous twined sandals with a deeply notched (V-shaped) toe have been recovered from several poorly dated caves in southeastern Utah and northeastern Arizona. Some of these sandals may also date to the Pueblo I period. Earl Morris speculated that "notched-toed" sandals with a deeply concave toe developed during the late Basketmaker III period and reached their highest development during Pueblo I (Baldwin 1939a:224–225). Among the many examples of notch-toed sandals from southeastern Utah are six pairs of pristine, exquisitely woven, unfinished twined sandals with deeply notched toes, attributed in the literature to the Basketmaker III period (e.g., Allen and Baker 2000:156, nos. 47, 48; Frost 1994: fig. 6; see also Hurst 2004: fig. 136; Janetski 1993: fig. 10.1; H. Montgomery 1894:228; Traughber 1894). These Utah sandals have intricate raised geometric designs on the sole, but lack the colored designs on the upper face that characterize Basketmaker III twined sandals from Canyon del Muerto and the Prayer Rock District (Hays-Gilpin et al. 1998). Numerous undated notch-toed sandals are also present in the unpublished collections from Canyon del Muerto at AMNH (Figure 9.7e, see color plates). These Utah and Arizona notch-toed sandals are excellent

candidates for AMS dating to determine if this style persisted into the Pueblo I period.

To summarize, present evidence suggests that twined sandals were worn in southeastern Utah, extreme southwestern Colorado, northeastern Arizona, and northwestern New Mexico during the Pueblo I period, perpetuating a tradition established during Basketmaker times. Toe forms include scalloped, rounded, and possibly notched (V-shaped). All of these styles were present during the preceding Basketmaker III period and appear to persist into the A.D. 700s. In the northern Chuska Valley, the scalloped-toe form evidently persisted until the late eighth century. The carbonized twined sandals from Chaco Canyon and the Dolores River Valley are too fragmentary to determine their original form. Twined sandals with jogged toes may be present in the Chinle drainage by the end of the Pueblo I period, but the evidence is inconclusive. The recovery of hundreds of twined sandals, most with jogged toes, from late eleventh- and twelfth-century contexts at Chaco Canyon, the West Ruin of Aztec, and the western and central Mesa Verde region demonstrates the persistence of this sandal style in the Four Corners region during the Pueblo II and early Pueblo III periods (Osborne 2004; Webster 2008). In contrast, twined sandals appear not to have been a significant form of footwear west of the Colorado River after Basketmaker times or in the upper reaches of the San Juan drainage during any period.

Plain-weave Sandals with Rounded or Pointed Toes

Plain-weave yucca sandals are one of the earliest forms of footwear on the Colorado Plateau. One popular style of plain-weave sandal during the Pueblo I period was a coarsely woven weft-faced sandal with a rounded or pointed toe (Figure 9.8).



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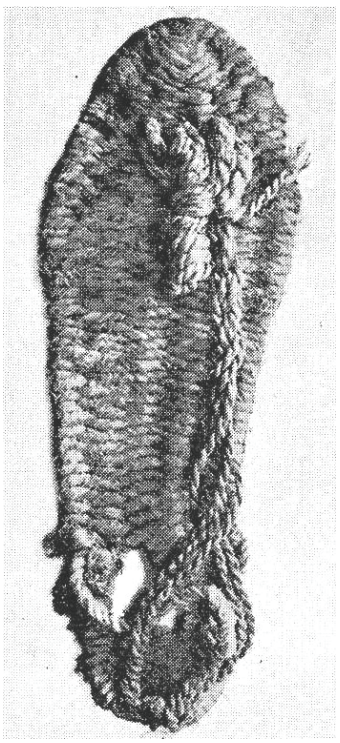


b

Figure 9.8. Plain-weave sandals. (a) Sandal with pointed toe, Antelope Cave, Arizona Strip (MNA NA5507.M.102; courtesy of Museum of Northern Arizona, David Yoder, photographer); (b) sandal with slightly pointed toe, Water Fall Ruin, Chinle Wash (PM 22-13-10/A5555) (from Guernsey 1931: pl. 57d).

Most consist of yucca-leaf or fiber wefts, plied cordage warps, and four to six warp elements. In many cases, the twist of the weft alternates direction in each successive row (e.g., Osborne 2004:121; Yoder 2009). This sandal style appeared during the late Basketmaker III or Pueblo I period and continued in use through Pueblo II (Yoder 2009, 2010). The style is found from southern Nevada (Shutler 1962:59, 85, pl. 102b), southwestern Utah (Judd 1926:148, pl. 57d, e; Kankainen 1995:118; Schroeder 1955: fig. 25, pl. 21b), and northwestern Arizona (Janetski and Wilde 1989: fig. 8; Yoder 2009, 2010) on the west to northeastern Arizona (Guernsey 1931:94, fig. 24e, pl. 57a, c, d; Kankainen 1995:150–154) and southeastern Utah (Kankainen 1995:66; the AMNH and Edge of the Cedars Museum also contain several unpublished examples) on the east. No examples are reported from east of the modern Colorado–New Mexico line (Yoder 2009).

Pueblo I examples include a large assemblage from Antelope Cave on the Arizona Strip (Yoder 2009, 2010) (Figure 9.8a), and Guernsey's (1931: pl. 57a, c, d) examples from Cave 1, Tsegi Canyon (Figure 9.8b). Surprisingly, Magers (1986) did not report any examples from the rich perishable assemblage from Antelope House in Canyon del Muerto. Yoder (2010) provides an analysis of the Antelope Cave assemblage and summarizes present knowledge about this sandal style. His recent dissertation presents new chronometric data and explores their spatial and temporal variability (Yoder 2009).

Sandal Summary

Differences are seen in the distribution of twill-plaited sandals, twined sandals, and pointed- or rounded-toed plain-weave sandals on the Colorado Plateau during the Pueblo I period. If the use of different sandal styles correlates with people of different cultural backgrounds or settlement histories, then sandals offer one way to explore the presence of culturally diverse populations on the Colorado Plateau during the Pueblo I period. Of the twined, twill-plaited, and plain-weave sandals in use during this period, only twined sandals convey a complex visual iconography and represent a major investment of labor. These sandals may have served social, ideological, and ceremonial roles not shared by more expedient forms of footwear.

During the Pueblo I period, twined sandals and the pointed- or rounded-toed plain-weave sandals have more of a western focus on the Colorado Plateau, whereas twill-plaited sandals were the principal form of woven footwear for people in the eastern Mesa Verde region. This east–west division between twined and plaited sandals dates back to Basketmaker times. Twined sandals, but no or few twill-plaited ones, are present in nearly every Western Basketmaker II assemblage, whereas twill-plaited sandals, but no twined ones, were found at the Basketmaker II Falls Creek rock shelters. One area of overlap was the Chuska Mountains. Both styles are present in the extensive perishable assemblages from the Prayer Rock District attributed to the Basketmaker III period. Direct AMS dating is needed to determine if twill-plaited sandals had a greater Basketmaker II presence in southeastern Utah and northeastern Arizona than presently recognized. Clearly, however, twined sandals never gained much popularity in the eastern Mesa Verde region.

By late Basketmaker III and Pueblo I, twined sandals are known to be present as far east as the Chuska Valley, the Montezuma Valley, Mesa Verde, the Dolores River Valley, and Chaco Canyon. Only one twined sandal is reported east of the La Plata Valley for this or any other period. Significantly, the site that produced this sandal, 5LP379 in the Animas drainage, is described as having affinities to the west (Silverman et al. 2003). No twined sandals were identified in the sizable perishable assemblages from the ALP and the Navajo Reservoir Project. If this structurally complex, iconographically rich style of footwear was one component of a Western Basketmaker–derived ideological or ritual system, then Pueblo I populations in the eastern Mesa Verde region seem not to have participated in this tradition to a significant extent.

By late Pueblo I, if not earlier, twined sandals are also found at Chaco Canyon. No perishables survived at the Basketmaker III site of Shabik'eschee

Village, but if they had, it seems likely that twined sandals would have been present. Numerous examples have been recovered from Pueblo II great houses in Chaco Canyon (e.g., Judd 1954: fig. 10; Pepper 1920: fig. 34b), and from various communities in the Four Corners region, including Salmon, Aztec, Mesa Verde, and Antelope House (Magers 1986; Osborne 2004; Webster 2008).

Both twined and twill-plaited sandals are present in the Dolores River Valley during late Pueblo I, but some interesting differences are seen in their distribution. The presence of 2/2 twill-plaited sandals at Grass Mesa Village, and their apparent absence from other Pueblo I villages investigated by the DAP, supports Wilshusen and Ortman's (1999:380) hypothesis that the people of Grass Mesa Village had a cultural connection to the eastern Mesa Verde region not shared by the villages on the west side of the Dolores River. At Grass Mesa Village, the remains of five 2/2 twill-plaited sandals were found along with one or two twined sandals. Several of these twill-plaited sandals share technological features (cupped heels, double 90-degree self-selvages) with sandals from the Animas Valley and the Navajo Reservoir area. Present evidence, which is admittedly thin, suggests this style of sandal was earlier in the eastern Mesa Verde region than in the Dolores River Valley.

The inverse pattern is seen at McPhee Pueblo on the west side of the river, where the remains of several twined sandals and only one possible twill-plaited sandal were found (Webster 2006a). Several Basketmaker III and early Pueblo I sites on the west side of the river also produced the remains of twined sandals (5MT4613, Pozo Hamlet; 5MT4644, Windy Wheat Hamlet; 5MT4684, Chindi Hamlet; see Webster 2009: table 4.2). These sandal distributions lend support to Wilshusen and Ortman's (1999) argument that the people of McPhee Pueblo were derived from a western background (see also Webster 2009:131).

By Pueblo I, if not earlier, coarse twill-plaited sandals appear to be present in northeastern Arizona and southeastern Utah. Most of these sandals have their elements turned up at the heel (Figure 9.6e). This style was also used in the central and eastern Mesa Verde regions (Osborne 2004:125–135; Cornelius 1938: Type I). A different style of twill-plaited sandal with a distinctive cupped heel (Figure 9.6c, d) is reported thus far from only the eastern Mesa Verde region (Webster 2009:114–115). Therefore, although a similar 2/2 twill-plaiting technology was practiced throughout the Four Corners region during the Pueblo I period, regional differences were evidently present in the distribution of different styles. Much larger samples of twill-plaited sandals must be directly AMS-dated before we can understand the regional variability of this particular sandal form.

Finally, plain-weave sandals with rounded or pointed toes show yet another distributional pattern during Pueblo I. Like twined sandals, they seem to be largely confined to the western and central regions of the San Juan drainage and the Colorado Plateau. Based on their significant presence in the Pueblo I assemblage from Antelope Cave on the Arizona Strip, and their presence in Pueblo I–Pueblo II collections from the Kanab, Utah, area and southern Nevada, this style seems to have been especially popular on the western Colorado Plateau. Although many examples are also known from northeastern Arizona and southeastern Utah, evidence of this style has yet to be found east of the present Colorado–New Mexico state line.

Woven Textiles

Looped Fabrics

Looping is a single-element construction, somewhat akin to the European technique of crochet (Figure 9.9, see color plates). Also referred to in the literature as "coil without foundation" or "knotless netting," looping was used on the Colorado Plateau from at least the Basketmaker II period into early postcontact times for the production of leggings and small bags (Kent 1983a:47–51). Small looped yucca and cotton bags were frequently used as medicine pouches (e.g., Kent 1983a: fig. 16), and leggings and shoe-socks of human hair were worn as cold-weather gear or possibly ceremonial attire (cf. Kent 1983b:83–85, figs. 71, 72). Looped bags and leggings are reported from several Basketmaker

II and Basketmaker III caves in the Four Corners region (Guernsey and Kidder 1921:77; Kidder and Guernsey 1919:173; E. A. Morris 1980:97–98, 114, figs. 58, 73). Several looped bags are also present in the unpublished Basketmaker collections from Grand Gulch and Canyon del Muerto at AMNH. A probable looped bag was also recovered from a late Basketmaker III pit structure at the south end of the Chuska Mountains (Webster 1999a:220, fig. 4.11a).

Only a few examples of Pueblo I looped textiles are known, all from the greater San Juan drainage. The yucca examples appear to be the remains of small bags, and the unburned hair artifacts appear to be the remains of socks or leggings. All but one is worked in the technique of simple looping (Kent 1983a: fig. 14c) (Figure 9.9a). Morss (1927:39) collected part of a looped sock or legging of human hair from "Pre-Pueblo" Site 11 on the Chinle Wash in northeastern Arizona (Figure 9.9b, see color plates).[14] Five Pueblo I examples, three of them socks or leggings and the other two unidentified, were recovered from Antelope House in Canyon del Muerto (Magers 1986:238–239).

Two examples of looping are known from the Dolores River Valley. One, a fragment of carbonized yucca looping from the late Pueblo I site of Grass Mesa Village, is probably the remains of a bag (Blinman 1986:60, fig. 2.8; Webster 2006a; 2009:122, table 4.17, fig. 4.33c) (Figure 9.9c, see color plates). The other, an undated fragment of unburned human (?) hair looping from LeMoc Shelter, may be the remains of a legging (Blinman 1986:60, fig. 2.7). The Grass Mesa example is worked in simple looping, the LeMoc Shelter one in loop-and-twist (Webster 2006a). This latter technique is rare on the Colorado Plateau, but relatively common in the Mogollon region, the Trans-Pecos region, and northeastern Mexico (Andrews and Adovasio 1980:161–163; Kent 1983a:51, fig. 14b). Another artifact from Grass Mesa Village, identified by Blinman (1986:60) as the possible start of a looped bag, could be part of a twined sandal (Webster 2006a).

In the upper Animas Valley, a carbonized looped yucca object, probably the remains of a bag, was recovered from a Pueblo I pit structure at 5LP187 (Webster 2009:120, table 4.16, fig. 4.32). A similar object is reported from the Pueblo I component of site LA 27092 in the lower Animas Valley near Aztec (Figure 9.9d, see color plates). This latter object appears to be the remains of a looped yucca bag filled with gaming pieces that had been hanging from the ceiling when the structure burned (Silverman et al. 2003:4-35 through 4-36, fig. 4.30; Webster 2003:24, figs. 40, 41; 2009:122, table 4.17, fig. 4.33e). Both artifacts are worked in simple looping.

Another possible example of looping is reported from the Navajo Reservoir District. Described in the report as "a flexible coiled-hair bag," this item was recovered from a pit structure at the late Pueblo I site of Bancos Village (LA 4380) (Eddy 1966:426, 605; see also Webster 2009:122). Although Eddy described the raw material as charred S-spun hair, yucca is a more likely identification, because hair normally does not survive the burning process and carbonized yucca fiber strongly resembles black hair. I have not examined the object.

Twined Blankets

Twined fur and feather blankets were principal articles of warm clothing for people on the Colorado Plateau, as in many other parts of the Americas (Kent 1983a:112–115). Most archaeological examples have been recovered as mortuary shrouds, but these garments also served the living as shoulder blankets and bedding. Variability in twined blanket manufacture has been documented for different regions. On the Colorado Plateau, Late Archaic and early Basketmaker blankets primarily consisted of rabbit fur, whereas most Basketmaker III and later blankets utilized the feathers of domesticated turkeys, alone or in combination with fur. The blankets were made by winding or suspending feather- or fur-wrapped yucca cordage between two bars to create a foundation of parallel warps, then crossing these warps with yucca wefts worked in two-strand twining (Kent 1983a: fig. 56).

The only relatively well-dated Pueblo I twined blankets from sites west of the present Colorado–New Mexico state line are those reported by Guernsey (1931:92–93, pl. 54a, c) from two burials in Cave 1, Tsegi Canyon, and another from Water

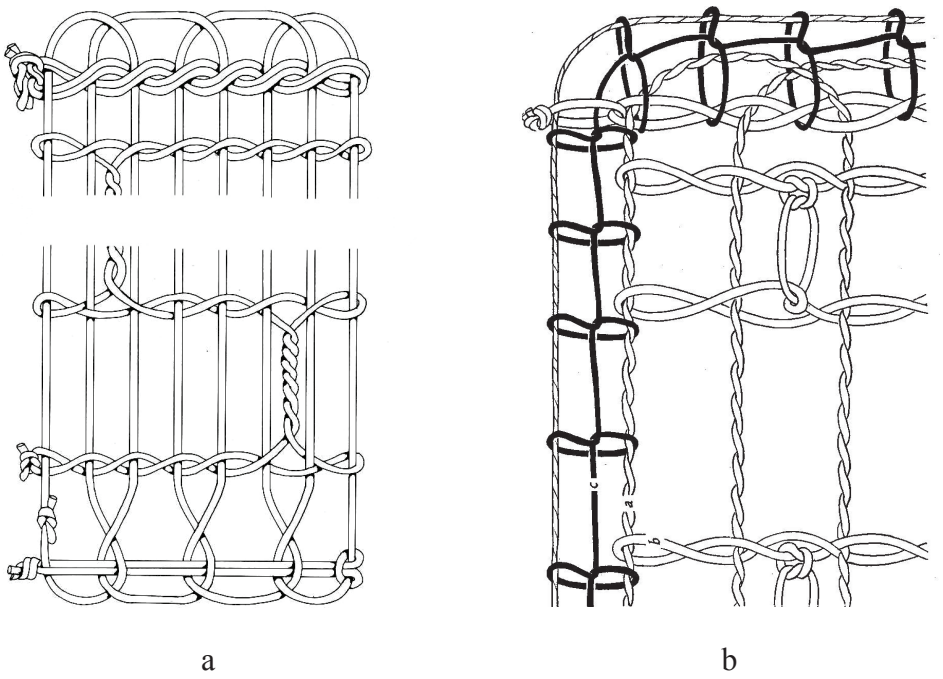


Figure 9.10. Twined blankets. (a) Schematic drawing of twined blanket framework with thick header cord at upper end, plain weave with paired wefts at lower end, from Burial 3, Cave 1, Tsegi Canyon (PM 20-5-10/A5067) (adapted from Kent 1983a, which is an adaptation of Guernsey 1931: pl. 54c); (b) schematic drawing of twined blanket framework with pair of cords around perimeter, from Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5054) (from Guernsey 1931: pl. 54a; illustration rotated to show correct orientation).

Fall (Floating House) Ruin. Interestingly, the two burials from Cave 1 contained blankets made in different techniques. The infant burial (Grave 3) contained three small blankets of similar construction, one of feather, two of fur. The upper end of these blankets was reinforced with a thick header cord, and the lower end was finished with a row of wefts worked in 1/1 plain (over-under) weave (Figure 9.10a). The body of the blanket was worked back and forth in two-strand twining, the twining cords twisted together vertically between rows (Guernsey 1931: pl. 54c; cf. Kent 1983a: fig. 56d). The fur- or feather-wrapped yucca warp elements and the yucca weft elements have a final Z-twist. The twined feather blanket from a burial in Water Fall (Floating House) Ruin was made in the same manner (Guernsey 1931:93). This foundation structure and the yarn-twist direction are typical of most Pueblo period twined blankets from the Four Corners region (e.g., Magers 1986: fig. 75, lower left; Osborne 2004: figs. 36, 41, table 3; Webster 2006:990–992, figs. 46.76–46.77). Guernsey and Kidder (1921:65, 74–75, fig. 11a) illustrate a similar foundation structure for a Basketmaker II twined fur blanket from the Marsh Pass area of Arizona.

The large fur blanket associated with the adult female (Burial 2, Grave 1) in Cave 1, Tsegi Canyon, differs from the above-described blankets in its foundation structure and the final-twist direction of its yarns. In lieu of a header cord at the upper end and a row of plain weave at the lower end, this blanket has a pair of cords running around the perimeter, one looping around the other cord and the outermost warp (Figure 9.10b). Instead of twisting around each other between rows, the twining cords in this blanket are joined with square knots. Rather than thick warp elements with a final Z-twist, the warps of this blanket are fine and were doubled to make a cord with a final S-twist[15] (Guernsey 1931:92–93, pl. 54a; note that the warps are depicted horizontally rather than vertically in the figure; Figure 9.10b shows the proper alignment). A small fur and feather blanket with a similar selvage of perimeter cords, but with final Z-twist

elements, is in the collections at the Edge of the Cedars Museum (ECPR 5048). Its provenience is unknown, but it is probably from southeastern Utah. This perimeter feature is also shared with a blanket from Mule Creek Cave in the Upper Gila (Cosgrove 1947: fig. 23a; Kent 1983a: fig. 56a), but other construction details differ. A hint into the purpose of this feature is provided by a Basketmaker II example from the Falls Creek rock shelters, where similar perimeter cords were used to secure a decorative fur border (personal observation by the author).

Farther east, carbonized examples of Pueblo I feather blankets were tentatively identified from a pit structure at Rio Vista Village (5MT2182) in the Dolores River Valley (Webster 2006a) and from pit structures at 5LP237 and 5LP379 in the upper Animas Valley (Webster 2003:25; 2009:122–124, tables 4.18, 4.19, figs. 4.11, 4.34a). The 5LP237 blanket was associated with a male burial on the floor. Traces of the foundation structure were preserved on the floor, but were insufficient to determine the selvage arrangement. The other Dolores and Animas examples lacked evidence of a twining structure. Unburned feather-wrapped cordage was also recovered from LeMoc Shelter in the Dolores River Valley (Blinman 1986:59). All of these examples appear to incorporate turkey feathers rather than fur.

The Pueblo I component of LA 4298 (Todosio Rock Shelter) in the Navajo Reservoir District yielded a relatively well-preserved turkey-feather blanket in association with a Piedra phase (A.D. 850–950) child burial (Burial 3) that also contained a Bluff Black-on-red jar (Hester and Shiner 1963:57, table 21). The upper selvage of the blanket is missing, but the lower selvage is worked in the same manner as the feather- and fur-cloth blankets from infant Burial 3, Cave 1, Tsegi Canyon, and the blanket from Water Fall Ruin. This was also the customary way of making twined blankets at Mesa Verde (Osborne 2004:49–63). Therefore, Pueblo I populations in the eastern Mesa Verde region evidently shared the primary method of twined blanket manufacture with their neighbors in the Four Corners area during this time.

Cotton Fabrics

All known examples of Pueblo I cotton cloth were recovered from the Chinle and Tsegi drainages of northeastern Arizona. No evidence of cotton cloth has been recovered from the central or eastern Mesa Verde regions for this period. If cotton fabrics had been in use, one would expect some trace to have survived in carbonized form in the DAP, ALP, or Rocky Mountain Expansion Loop Pipeline Project assemblages or as unburned cloth in the alcoves investigated by the Navajo Reservoir Project.[16] Cotton cloth was present at the multicomponent site of ZNP-21 along the East Fork of the Virgin River in southwestern Utah, but its dating is uncertain (Schroeder 1955:154).

From the Pueblo I female burial (Burial 2, Grave 1) in Cave 1, Tsegi Canyon, Guernsey (1931:8–9, 97) reported a sleeve-like piece of cotton cloth and the remains of several cotton blankets or other articles (Figure 9.11, see color plates), He did not describe or illustrate the textiles in his report. They were later examined by Kate Peck Kent in the late 1930s or 1940s and are discussed in her monograph on prehistoric cotton textiles (Kent 1957; see also 1983a). It is regrettable that Guernsey did not discuss the fabrics in greater detail, because discrepancies exist among his report and field notes, the Peabody Museum ledger, and Kent's analysis which question the association of some of the fabrics with the burial.[17]

At least three, and possibly four, different cotton textiles appear to have been associated. Guernsey (1931:97) described one solid-colored piece, approximately 2 by 3 feet in size, as very dark, "the result possibly of dyeing." Based on the photograph of this fabric on the Peabody Museum website (A5058), the fabric is woven in plain weave. A second piece of cloth, "much lighter in color and coarser in weave" (Guernsey 1931:97), was identified by Kent (1957:493, 692, fig. 11d; 1983a:129–133, fig. 64d) as the remains of a brown and white check fabric, also plain weave (A5058.2) (Figure 9.11a, see color plates). This latter textile was recently reexamined by textile conservator T. Rose Holdcraft of the Peabody Museum, who described the warp and weft elements as alternating groups of thick,

light-colored yarns and thin, dark brown yarns (Holdcraft, personal communication). This is the only checked or plaid fabric reported from the northern Southwest. Kent (1983a:133) suggested it might have been "traded north from a Hohokam community like Los Guanacos, where plaid fabrics were apparently being woven on the loom by A.D. 700–900."

The third cotton textile is a sleeve-like object fabricated from a torn piece of plain-weave cloth (A5057) (Guernsey 1931:97; Kent 1957:491, 576, 607, 625, 723, fig. 126c) (Figure 9.11b, see color plates). The edges were finished by twisting groups of warp and weft ends together and twining the resulting yarns along the edge to make a selvage; then the opposite sides of the cloth were sewn together with a running stitch to create a tube (see Kent 1957:576, fig. 126c). Holdcraft's recent analysis describes the object as 28.5 cm long and 11 cm wide and identifies some of the stitching cord as two-ply Z-twist leaf fiber (Holdcraft, personal communication). The object somewhat resembles a 10.5-inch-long cotton sleeve or quiver from Mule Creek Cave in the Upper Gila (Cosgrove 1947:69, fig. 79a; Kent 1957:607, 625, 627, figs. 114g, 126b). Interestingly, a broken bow and part of another were also associated with the burial (Guernsey 1931: fig. 29a).[18] At this point, the sleeve does not appear to have been part of a garment.

Finally, the museum ledger attributes a large piece of plain-weave cotton cloth with a gridlike band of brown diamonds, each with a small dot at the center, to this burial (Figure 9.11c, see color plates). Unfortunately, neither Guernsey nor Kent reports any decorated cloth from this burial, which raises questions about its association.[19] In her analysis, Holdcraft describes the fabric as 55 cm long and 15 cm wide and suggests that the design was applied by means of a paste-resist, dark brown dye, or stain (Holdcraft, personal communication). The decoration has penetrated unevenly to the underside of the fabric, indicating that it was applied to only one face. An alternate method of producing the dot-in-a-diamond design, tie dye, which involves immersing a fabric in dye, was apparently not used in this case. The dot-in-a-diamond motif was an important element of ritual iconography in Mesoamerica, from where it spread to the U.S. Southwest (Webster et al. 2006). If this decorated fabric really was associated with this burial, then it appears to be the earliest known Southwestern example of a cotton textile decorated with this design system.[20] The only way to clarify its provenience would be to directly date the textile to see if the date range corresponds to the ceramics associated with the burial.

Magers (1986:226) also reports plain-weave cotton cloth from Pueblo I contexts at Antelope House in Canyon del Muerto. The Antelope House examples appear to date to the ninth century (D. P. Morris 1986:44). Magers (1986:252, table 108; see also D. P. Morris 1986:136–137, fig. 51) also reports small quantities of cotton seeds and bolls, as well as a weaving batten and a shed rod, from Pueblo I contexts at Antelope House. On the basis of this evidence, it appears that limited amounts of cotton were being grown and woven in northeastern Arizona by the ninth century. Much of the cotton cloth used on the Colorado Plateau during this time was probably acquired in trade from the Salt-Gila drainage and other southern desert environments, where the cultivation and weaving of cotton was a flourishing enterprise (Magers 1986:272; see also Teague 1998). The plaid fabric with the female burial in Cave 1, Tsegi Canyon, is a possible southern import. The resist or painted fabric, if Pueblo I in age, could conceivably be another. A Pueblo I tumpband with cotton fiber and a braided sash with cotton fiber, both almost certainly locally made, are discussed below.

Woven Tumpbands

Finely woven tumpbands or carrying bands, some decorated with intricate polychrome designs similar to those used on twined sandals, coiled baskets, and aprons, have been recovered from Basketmaker III sites in Tsegi Canyon, Canyon del Muerto, the Prayer Rock District, and the southern Chuska Valley (Guernsey 1931: pl. 10d, e, g, k; Hays-Gilpin et al. 1998: fig. 6.50; Kent 1983a: pl. 1; Webster 1999b:9.21, fig. 9.8). The production and use of

these items continued in these areas during the Pueblo I period.

All known examples of Pueblo I tumpbands come from the Tsegi and Chinle drainages. One possible early Pueblo I example is an unpublished yucca tapestry-weave tumpband with a tan, red, and yellow geometric design (AMNH 29.1/3602) from Cave 1, North Trail Canyon in Canyon del Muerto, a site from which Morris recovered a Pueblo I coiled basket (Morris and Burgh 1941: figs. 20, 24a).

Guernsey (1931:97–98, pl. 10h, i) reported two Pueblo I tumpbands from Burial 2, Grave 1, in Cave 1, Tsegi Canyon. The first, an undecorated yucca band with a loop at both ends, had been used to secure the fur blanket around the body. Guernsey did not identify the weave structure, but it appears to be a tight plain-weave, according to Holdcraft (Figure 9.12a, see color plates) (Holdcraft, personal communication).

The second band from this burial is woven in a slit-tapestry weave and patterned with a white, brown, and yellow zigzag design (Figure 9.12b, see color plates). The complete end of the band has the remains of a loop. The Peabody Museum ledger identifies it as among the cloth wrappings associated with the interment. Guernsey did not describe the raw materials, but Kent (1957:525–526, 700, fn. 74) later identified the weft elements and half of the warp elements as cotton and the remainder of the warp elements as hair or wool. This identification was recently confirmed by Holdcraft (Holdcraft, personal communication).

Guernsey (1931: pl. 10c, f) also illustrated two Pueblo I tumpbands from Water Fall Ruin. One is undecorated and has a loop at one end; the other end is missing. He described the weave structure as twined and the raw material as apocynum fiber (Guernsey 1931:99, pl. 10c).[21] Given that Kidder and Guernsey frequently mistook finely processed yucca for apocynum, the raw material is more likely yucca. Guernsey (1931: pl. 10f) also illustrated a second tumpband from Water Fall Ruin, which he attributed to the Pueblo I period in the caption but did not describe in the report. This band has a bold brown and tan stepped design and is woven in tapestry weave (Figure 9.12c, see color plates). The raw material is not specified in the report, but Holdcraft recently identified it as yucca (Holdcraft, personal communication). According to the Peabody Museum ledger, the band was recovered during general digging in the cave.

Flat Braided Bands or Sashes

Flat bands of animal hair or yucca fiber worked in 2/2 oblique interlacing (braiding) were relatively common during the Basketmaker II and Basketmaker III periods. Basketmaker II examples have been found from Kanab on the west (Judd 1926: pl. 54b) to Durango on the east (Morris and Burgh 1954:67, fig. 100b). During the Pueblo II and Pueblo III periods, flat cotton braided bands were relatively numerous in the Kayenta region, but they are not reported from Chaco Canyon or Mesa Verde, and only two are known from Aztec.[22] They persist into modern times in the form of the Pueblo braided rain sash, an integral part of the wedding trousseau and *katsina* ritual clothing (Kent 1983b:82–83).

An unpublished braided band fragment from Antelope Cave seen by the author could date to either the Basketmaker II or Pueblo I occupation. All definite Pueblo I examples of braided bands or sashes come from the vicinity of the Chuska Mountains. A possible Pueblo I example was recovered from Cave 1 in North Trail Canyon, Canyon del Muerto. This poorly preserved band is brick red and brown or tan in color and is made of yucca fiber (AMNH 29.1/3606). Its dating is tenuous, based solely on the fact that it was collected from the same cave that produced a Pueblo I coiled basket (Morris and Burgh 1941: figs. 20, 24a). The braided band, and the decorated twined sandal and tapestry-woven tumpband with which it was found, closely resemble late Basketmaker III examples from Canyon del Muerto (unpublished) and the Prayer Rock District (E. A. Morris 1980: fig. 71). If these objects date to the Pueblo I period, they most likely date to the A.D. 700s.

Of greater significance is a group of six pristine, braided sashes found tied in a bundle in Obelisk Cave in the Prayer Rock District. In the literature, the sashes are described as made of dog hair and are

attributed to the Basketmaker period (E. A. Morris 1980:93, figs. 52–55; see also Webster 2007:293, fn. 5). E. A. Morris (1980:20) noted problems with the dating of Obelisk Cave, however. Recently, a sample from one sash (Figure 9.12d, upper, see color plates) produced an AMS date in the late A.D. 700s. Even more surprising, microscopic fiber analysis of this sash confirmed that half the strands are cotton, the other half white dog hair (Rachel Freer and G. Michael Jacobs, personal communication, 2010).

This discovery is significant for several reasons. First, it demonstrates that flat braided bands were produced during the Pueblo I period. Second, it illustrates the transition from animal-hair braided sashes to cotton ones. Third, it provides our only direct date on a Pueblo I cotton textile. If these beautiful braided sashes served as ritual regalia, which I believe to be the case, then they also provide one of our few glimpses of ritual costuming during the Pueblo I period.

Conclusions

Despite more than a century of archaeological investigations in the northern Southwest, the Pueblo I period remains one of the least understood periods of perishables production and use. Mitigation work since the 1960s has helped round out the Pueblo I perishables database, but our most detailed information about Pueblo I perishables still comes from the Chinle and Tsegi drainages. Here, conditions are well suited for the preservation of perishables, but most of these collections are poorly dated. Conversely, the collections from the Chuska, Dolores River, and Animas River valleys are relatively well dated but poorly preserved. With the exception of Antelope Cave on the Arizona Strip, significant quantities of Pueblo I perishables from other areas of the Colorado Plateau are nonexistent, sparse, or yet to be identified.

Despite the unevenness of these data, several patterns emerge. First, the data suggest that early Pueblo I perishables essentially represent a continuation of late Basketmaker III traditions. Despite the emphasis on Pueblo I early village formation in the archaeological literature, I see no major innovations in perishables production during the A.D. 700s. Most of these developments occurred during the preceding Basketmaker III period, such as the growing importance of twill-plaiting for mats and sandals and the production of intricately decorated, technologically complex twined sandals, tumpbands, aprons, and carrying baskets, possibly related to an elaboration of ritual performance (Hays-Gilpin et al. 1998; Washburn and Webster 2006). Although the data are scarce, present information from Canyon del Muerto and the Chuska Valley suggests the continuation of Basketmaker perishable traditions well into the A.D. 700s in these areas. Site LA 107466 in the northern Chuska Valley confirms the persistence of Basketmaker III–style twined sandals with scalloped toes and zoned layouts into the A.D. 800s, and evidence from Canyon del Muerto and southeastern Utah suggests the continuation of twined sandals with rounded and deeply notched (V-shaped) toes from late Basketmaker III into Pueblo I.

Guernsey's early explorations in the Tsegi and Chinle drainages produced some remarkable collections, but most of the objects he identified as Pueblo I appear to date to the interval A.D. 850–1000, the time of the Pueblo I–Pueblo II transition. Indeed, the twined sandal with jogged toe, the plaited ring basket with a concentric diamond design, the cotton-and-hair tumpband, and the painted cotton textile from Tsegi Canyon are our earliest examples of these styles and resemble known examples of Pueblo II perishables (e.g., Pepper 1920).

The major textile innovation of the late Pueblo I period was the growing use of cotton. Based on the Kana-a and Wepo ceramics associated with Burial 2, Cave 1, in Tsegi Canyon (A.D. 850–1000) and the reported dates of the Pueblo occupation at Antelope House in Canyon del Muerto (A.D. 825–850 to 950; D. P. Morris 1986:44), we can say with relative certainty that cotton fabrics were made and used in limited quantities in the Tsegi and Chinle drainages (including Canyon del Muerto and the western slope of the Chuska Mountains) and probably other well-watered tributaries of the lower San Juan River by the early A.D. 900s, if not earlier. The recovery of cotton seeds, bolls, and weaving implements from Pueblo I contexts

at Antelope House indicates the limited cultivation and weaving of cotton by this time, although Magers (1986:272) suggests that much of this cotton was acquired in trade from the south. And what of cotton production outside this region? At this point, the evidence is nil. If cotton cultivation or weaving was occurring, or if cotton textiles were being used to any extent east of the present Colorado–New Mexico line during the Pueblo I period, one would expect the carbonized remains of such activities to be preserved in the substantial DAP, ALP, Rocky Mountain Expansion Loop Pipeline Project, or Navajo Reservoir Project collections. What we seem to be seeing is the inception of a cotton-growing and cotton-weaving industry in the well-watered tributaries of the lower San Juan River by the late Pueblo I period, one that continued into the later Pueblo periods but was never developed to a significant extent in the Mesa Verde, Aztec, or Chaco regions (Webster 2008:186).

Two artifacts, the decorated tumpband from Burial 2, Cave 1, Tsegi Canyon (Figure 9.12b, see color plates) and the braided sash from Obelisk Cave (Figure 9.12d, see color plates), incorporate both cotton fiber and animal hair and thus illustrate the transition from a Basketmaker-based textile industry dominated by the use of yucca and hair to a Pueblo II–Pueblo III textile industry focused on the loom-weaving of cotton. Although much of the cotton fiber and many of the cotton textiles used in the Four Corners region prior to A.D. 1100 were probably imported from the south (Kent 1983a:44; Magers 1986:272; Teague 1998:21), the tumpband and braided sash were almost certainly made locally, based on comparisons with similar artifacts in Basketmaker collections. The braided animal-hair sashes are the clear antecedents of the cotton braided sashes of later Pueblo times. By late Pueblo II and Pueblo III, animal-hair yarn was no longer being used to any extent in Pueblo weaving.

One of the most promising avenues for exploring cultural identity during the Pueblo I period is provided by the sandal data. During the Basketmaker II period, twined sandals appear to be associated with people from a more western background. Basketmaker III examples occur as far east as the central Mesa Verde region, yet this style of footwear never achieved popularity in the eastern Mesa Verde region, despite the later importance of twined sandals at Chaco Canyon by Pueblo II. Earlier in this chapter, I suggested that twined sandals may have held a symbolic importance reflected in their iconography and the amount of labor required for their production. If so, people in the eastern Mesa Verde region appear not to have participated in this belief system. Other styles of footwear further reinforce this east–west division. Pointed- or rounded-toe plain-weave sandals were worn from the Arizona Strip to southeastern Utah and northeastern Arizona during the Pueblo I period, but never became popular farther east. Conversely, the plaited sandal with a square toe and cupped heel of the eastern Mesa Verde region never became popular in the west. Although certain western-based traditions did spread into the eastern Mesa Verde region (two-rod-and-bundle coiled basketry, for instance) by the Pueblo I period, footwear styles seem to have remained more localized, at least until the Pueblo II period, when a finely woven style of plaited sandal was worn throughout the San Juan region.

Present evidence suggests that people living in the Tsegi and Chinle drainages, the slopes of the Chuska Mountains, and probably southeastern Utah (if we had more data) were the most accomplished weavers on the Colorado Plateau during the Pueblo I period. It is here that textiles and baskets reached their highest degree of design complexity and technical virtuosity during the Basketmaker periods. The lower San Juan River and its tributaries were also the focus of cotton cultivation and weaving on the Colorado Plateau during the later Pueblo periods. Had we larger collections of textiles from Virgin River, Chaco Canyon, and Rio Puerco sites, we might see a more highly developed weaving tradition there as well, but for now it appears that the fanciest clothing, the finest footwear, and the most elaborate ritual regalia in use during the Pueblo I period were worn by the descendants of the western San Juan Basketmakers, perpetuating a textile tradition established in the region hundreds of years before.

Acknowledgments

I owe a huge debt of gratitude to Susan Haskell and T. Rose Holdcraft of the Peabody Museum for their extensive help with the documentation and identification of perishable artifacts from Samuel Guernsey's and Noel Morss's early work in the Tsegi and Chinle drainages. Phil Geib, Kelley Hays-Gilpin, and Dennis Gilpin provided much-needed assistance with the identification and dating of the ceramic vessels from Burial 2, Cave 1, Tsegi Canyon. I also wish to express my appreciation to G. Mike Jacobs for sharing information about the braided cotton and animal-hair sash from Obelisk Cave; David Yoder for sharing his photograph of a sandal from Antelope Cave; David Hurst Thomas for granting me permission to reproduce photographs of a basket and sandal from Canyon del Muerto; and Jim Allison and Scott Ure for their assistance with the Figure 9.1 map.

Notes

1. Unfortunately, there are a number of discrepancies between the Peabody Museum ledger, Guernsey's field notes, and his 1931 report which suggest that not all objects assigned to the burial in the ledger were actually associated with the burial or date to the Pueblo I period. The only clearly associated artifacts are the ones discussed by Guernsey in his field notes or published report. My primary reason for mentioning the other artifacts in this chapter is that it might be possible to directly date them in the future.

2. The Peabody Museum ledger lists a 3/3 twill-plaited mat fragment (20-5-10/A5047) with the artifacts from Grave 1, Burial 2, but Guernsey does not discuss it in relation to the burial in his published report or unpublished field notes. Nor does he mention it in his summary of Pueblo I matting. He also fails to note the presence of Pueblo I twill-plaited (twilled) mats in his summary table of Basketmaker and Pueblo material culture at the end of the volume. As a result, it cannot be confirmed that this plaited mat fragment was associated with the burial.

3. Ceramic identifications were provided by Phil Geib, Kelley Hays-Gilpin, and Dennis Gilpin. In addition to the aforementioned vessels, the museum ledger also attributes a Sosi black-on-white bowl (20-5-10/A5042) and a corrugated sherd (20-5-10/A5060) to this burial. According to Phil Geib, it is highly unlikely that the bowl was associated with a burial that produced so many late Pueblo I vessels. See note 1 above.

4. Two large coiled baskets were found at the site. PD/bag 221.28 was at least 70 coils (28 cm) tall and 35 cm wide. PD/bag 249.4 was at least 60 coils (24 cm) tall and 24 cm wide. Both probably represent the remains of globular or carrying baskets. PD/bag 249.4, with an oval base, is the better candidate for a carrying basket. Both were fragmentary when I analyzed them, and the in-situ photographs are inadequate for a positive identification, so it is impossible to know for certain their original forms.

5. In my 2000 report, my identification of this object as a ring basket was tentative. I have since identified another ring basket with a double rod at the rim from Salmon Pueblo (Webster 2006c:964, fig. 46.63c).

6. In the figure caption for the twined reed mat (PM 22-13-10/A5546), Guernsey (1931: pl. 58b) attributed it to the Pueblo I period. In his "Table of Differences" in the back of the volume, he noted the presence of twined reed mats during Pueblo I, referring the reader to Plate 58a, b. On page 108, however, he identified the mat in Plate 58b as an example of Pueblo II–Pueblo III matting. Thus, his discussion is too contradictory to definitely ascribe this mat to the Pueblo I period. If it does date to Pueblo I, it is the only known twined reed mat from this period. The presence of numerous twined reed artifacts at Pueblo Bonito, Salmon Ruins, Aztec Ruins, and Johnson Canyon confirm that such objects were present in the Four Corners region by the early A.D. 1100s (Webster 2008:181).

7. Although Morris and Burgh attributed these sandals to the Basketmaker II occupation, none were found in direct association with any of the Basketmaker II burials. The sandals have yet to be directly dated.

8. James Copeland of the Farmington Office of the Bureau of Land Management secured the funding for AMS testing and submitted the samples in 2008 in collaboration with the author.

9. Guernsey (1931:9) mentioned "fragments of a sandal" with this burial, but did not describe the type. His field notes do not mention the sandal. The Peabody Museum ledger attributes 20-5-10/A5049, a 2/2 twill-plaited sandal, to the burial. Guernsey (1931:94) did not mention this plaited sandal in his discussion of Pueblo I sandals, nor did he attribute twill-plaited sandals to the Pueblo I period in his summary table at the end of the volume. For these reasons, the twill-plaited sandal cannot be positively associated with the burial.

10. I am currently involved in a project to reanalyze the artifacts from the Falls Creek rock shelters. It is hoped that at least one of these sandals can be AMS-dated in a future phase of the project.

11. The sandal from the Animas Valley illustrated in Figure 9.7d has 1/1 simple twining in the forward zone, 1/1 twining and weft-wrap in the midsole, and raised geometric patterning on the underside of the heel.

12. According to the Peabody Museum ledger, this sandal (20-5-10/A5009) was recovered from masonry Room F. This room is not identified on the plan map of the site (Guernsey 1931: fig.2), but appears to be part of the roomblock at the eastern end of the cave, which Guernsey (1931:5) attributed to the Pueblo period (probably Pueblo III). He indicated that no Pueblo I house structures were found in the cave. Although Guernsey attributed this sandal to the Pueblo I period in his caption to Plate 57f and in his summary table at the end of the volume, he did not mention it in his discussion of Pueblo I sandals. If the sandal dates to the Pueblo I period, then it most likely dates to the end of this period, like Burial 2 from this cave.

13. The sandal from the Chuska Valley illustrated in Figure 9.7c (FS 1350) has 2/2 alternate pair twining in the forward zone and 1/1 twining and weft-wrap in the midsole. The heel section is missing.

14. Morss did not describe the technique as looping, but the fabric structure is clearly visible in Figure 9.9b. Morss identified the object as part of a sock or sleeve. It is probably part of a sock or legging, most likely the latter.

15. Guernsey mentions the fineness of the warp elements in his field notes.

16. Lightfoot et al. (1988:563) noted possible cotton fiber in the roof fall of Pit Structure 10 at Grass Mesa Village in the Dolores River Valley. In 2006, I reexamined the specimen microscopically and identified the cotton-like fibers as highly processed yucca. When the vascular bundles of yucca are broken down into their constituent fibrils, spiral-like strands are released that somewhat resemble cotton. The latter fibers are flatter and more ribbonlike, however.

17. The Peabody Museum ledger contains three entries of woven cotton cloth for this burial: 20-5-10/A5056, A5057, and A5058. It identifies A5056 as cotton cloth wrappings, A5057 as cotton cloth sewed in sleeve-like form, and A5058 as fragments of woven fabric. In the Peabody Museum catalog, the number A5056 is assigned to the decorated fabric with the gridlike diamond design (Figure 9.11c), A5057 is assigned to the sleeve-like object (Figure 9.11b), A5058 is assigned to the black plain-weave cloth (not illustrated), A5058.2 is assigned to the plaid fabric (Figure 9.11a), and A5058.3 is assigned to the decorated slit-tapestry tumpband (Figure 9.12b). In her analysis, Kate Peck Kent (1957:690, 692, 700) described the black plain-weave fabric as A5056, the sleeve-like object as A5057, and both the plaid fabric and the decorated slit-tapestry tumpband as A5058. She did not describe a decorated fabric with a gridlike design with the number A5058. Specimens A5056, A5057, A5058, A5058.2, and A5058.3 were recently reexamined by textile conservator T. Rose Holdcraft. Copies of her analyses are on file at the Peabody Museum. I have not personally examined these textiles.

18. The Peabody Museum catalog numbers for the bows are A5063 and A5064.

19. Susan Haskell, collections manager at the Peabody Museum, has checked the museum documentation and believes the textile could be from this burial. It seems surprising, however, that Guernsey would have failed to mention such a remarkable textile in his field notes or report unless the decoration escaped his notice. This seems unlikely, given Guernsey's attention to detail.

20. I was unaware of this textile when I wrote my section of the Webster et al. 2006 article. I was also unaware of another cotton textile with a dot-in-a-square design recently discovered in the collections from Pueblo Bonito (AMNH H/15752, probably part of H/4605). That fabric appears to be decorated by a combination of negative painting or resist and tie dye. It was recovered from Room 32 and could date to the early-to-mid-A.D. 1000s, although it has not been directly dated (see Pepper 1920:138). The Pueblo Bonito textile could be roughly contemporaneous with the one from Burial 2, Cave 1, Tsegi Canyon.

21. I have not identified the catalog number of this band or located it on the Peabody Museum website.

22. The AMNH catalog numbers for these braided bands are AMNH 29.0/8397 and 29.0/9977.

CHAPTER 10

Women's Central Role in Early Pueblo Change:

Ground Stone, Archaeobotanical, Ceramic, Architectural, and Skeletal Evidence

RICHARD H. WILSHUSEN AND ELIZABETH M. PERRY

Skeletal evidence from early Pueblo cemeteries, changes in storage architecture, greater investment in ground stone and ceramic tools, changes in cradleboards, and archaeobotanical remains all contribute to our understanding of how women's roles in daily Pueblo life changed between A.D. 650 and 850. Birth rates and population increased dramatically over this period. Female labor and coordination of tasks contributed to and enabled more intensive annual agricultural production, greater diversity of agricultural foods, their storage, and their preparation. We argue that shifts and changes in gendered categories of labor occurred at this time, influenced by and influencing the creation of early villages and eventually great houses.

We have organized our discussion into three topics: food production and the division of subsistence tasks, human reproduction and population growth, and gender relations in exchange and social power. Changes in production and reproduction, combined with a major shift in settlement patterning, resulted in the aggregation of at least half of the Mesa Verde regional population into at minimum 40 different large villages by A.D. 850. These changes also coincided with a reconception of how communities and ritual gatherings were organized, so that appreciable ritual power was increasingly focused in male-controlled ritual societies by early Pueblo times. The power of these male-dominated sodalities was balanced by the more subtle, but fundamental, economic power that women held at the household, and, possibly, at the lineal, level. This is the focus of this chapter.

The Central Role of Women in the Intensification of Maize Production and Storage in the Early Pueblo Period (Production)

Although the symbolic and practical division of male and female roles in domestic production activities and ritual organization for the late prehistoric period pueblos has been demonstrated in studies drawing upon multiple lines of archaeological evidence (i.e., chapters in Crown, ed. 2000; Perry 2004; Potter 2002), scholarly investigations of gendered roles and the concept of prestige in the late Basketmaker and early Pueblo periods have been relatively limited (although see Rautman 1997). The material record of early Pueblo communities is not as robust or well preserved as in later sites. However, it is likely that the strong gender divisions in food production labor in evidence during the protohistoric period have roots in the time of early agricultural intensification. We suspect that there

was increasing gender-based differentiation in many productive activities as the agricultural economy and the social interactions necessary to its execution were established.

The support and maintenance of a typical household in A.D. 800 would require the skills and tool kits to perform numerous tasks, including hunting small and large game; farming fields and cultivating kitchen gardens; gathering wild foods; preparing meals; caring for domestic turkeys; obtaining and carrying water and firewood; producing ceramic vessels, wooden implements, and bone and lithic tools; house-building; clothing manufacture; caring for young children and the elderly; and maintaining the special equipment and training needed for ritual performances within the community. It is unlikely that a single adult would be equally skilled, trained, or able to allocate the time necessary to perform all these tasks. As the tasks necessary for household and village life increased in number and complexity with changes in social and economic organization, it is likely that adult members of a household divided these responsibilities along gender lines, resulting in divided areas of expertise in particular domains. Because of the central role of maize in the diet and domestic economy of this period, we focus particularly on the intensification of maize production over time and the gendered roles that we suggest emerged at the same time—possibly in response to growing needs for its production, preparation, and storage.

The Shift to a Maize-Based Economy

The shift to a fully agricultural economy took quite some time. The chronometric, archaeobotanical, and skeletal chemistry evidence all point to a relatively early introduction for maize between 2000 and 500 B.C. in the Four Corners area (Coltrain et al. 2007; Kohler et al. 2008), but it was only sometime between 300 B.C. (western Basketmaker II) and A.D. 300 (eastern Basketmaker II) that maize became widespread in the subsistence systems of this area. It is important to recognize that early maize agriculture was very successful only in a limited number of environmental settings in the Four Corners (Matson 1991). The settlement patterning, tool kits, and subsistence remains in some areas suggest that hunting and wild food-collecting continued to play a very important role in many Basketmaker II settings (Hovezak and Sesler 2006). So, although archaeologists are fascinated with multi-household settlements such as Talus Village (Morris and Burgh 1954) or the hundreds of storage cists in the Marsh Pass rock shelters (Kidder and Guernsey 1919), we need to remember the majority of Basketmaker II residential sites were far more humble. Some of these smaller sites appear to have housed semisedentary populations who depended on both farming and broad-spectrum foraging (Hovezak and Sesler 2002b; Potter 2008), and others are interpreted as fairly sedentary farmers who depended on maize for considerably more than 50 percent of their annual diet (Coltrain et al. 2007; Matson 1991; Matson and Chisholm 2007). Although maize was a fundamental part of the late Basketmaker II diet, it may be that the variation in subsistence represents two different populations in the region. One may have been foragers who increasingly were incorporating maize farming into their subsistence, and the other group may represent full-time farmers who were the descendants of settlers from the south who brought a fully developed farming lifeway with them (Matson 2003).

Kohler and others (2008) have considered the relatively slow acceptance of a maize-based lifeway and tried to explain why this process was slower and less systematic than the Neolithic wave of advance seen in early European agriculture. Since the homeland for maize was far to the south in the Mexican tropics, moving this crop thousands of kilometers to the north entailed considerable time to breed and select varieties that would thrive in ever drier, colder, and less sunny regions. The original maize that arrived in the northern Southwest had a smaller cob than the maize of two millennia later, but even this early maize would have seemed immense and very sweet-tasting to someone used to gathering amaranth or rice grass seeds. In contrast, the "Neolithic package" in Europe consisted of three to four different kinds of domesticated animals, three to four cereal grains and legumes, a sophisticated tool kit, and a lateral migration

that moved agricultural systems across to similar latitudes. The Neolithic "revolution" that arrived in the northern Southwest between 2000 and 500 B.C. was not as "revolutionary" and not such a complete package. It consisted primarily of a smaller-eared flint/pop variety of maize, with squash (*C. pepo*) soon thereafter.

Although it is challenging to render the female and male economic roles of hunter-gatherers, there are cross-cultural data (see Crown 2000a:223 for summary) that support the interpretation that women were much more likely engaged in plant collection than men, and that men were almost certainly more engaged in hunting than women. The potentially central role of women in the selection and harvest of early maize is reinforced by their likely role in the production of early ceramic vessels (Crown and Wills 1995a, 1995b; Mills and Crown 1995). These early vessels would have ensured the safe winter storage of special seed-corn kernels for spring planting and would have also allowed the easy soaking and cooking of dried, stored foodstuffs (Skibo and Blinman 1999). This would have buffered the risky winter season and made households less dependent on the random luck of winter hunting. These innovations set the stage for the rapid expansion of agricultural societies we observe in the northern half of the Colorado Plateau.

With the introduction of common beans, the ceramic containers needed to soak them and cook them (Ortman 2006; Skibo and Blinman 1999), and the probable appearance of a larger-eared, more productive variety of corn known as Harinosa de Ocho (K. R. Adams 1994, 2006) between A.D. 300 and 600, the basic Neolithic package was in place for the northern Southwest. The increasing use of domesticated turkey for meat (Potter, Chapter 8) and feathers for insulated garments and ritual performance (Rawlings and Driver 2008, 2010), in combination with the significantly greater investment in food storage and processing facilities, completed the "Neolithic package" for the Southwest. As is witnessed in the regional overview chapters in this volume (e.g., Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4), the rapid multiplication and spread of agricultural populations appear to be enabled by this multifaceted intensification of a maize-driven economy. So, the changes between Basketmaker II and III seem to have been occasioned more by the increasing opportunities to intensify this economy than by a dramatic change in the overall contribution of maize to the diet.

Changes in Food Storage

The rapid rise in maize's importance in late Basketmaker and early Pueblo annual subsistence almost directly mirrors evidence of increasing attention to security and the size of food storage facilities between A.D. 650 and 875. Several studies document this escalating dependence on stored staple crops. Below, we revisit one older study that has received relatively little attention, yet which shows this change very clearly. Gross (1986) compared changes in the storage room size, security (construction labor inputs and location), and agricultural dependence for structures investigated by the Dolores Project.

The earliest Dolores storage structures (A.D. 600–720) were small (mean floor area 4.35 m^2), rounded pit rooms with vegetal and mud roofs (Wilshusen 1988b). These pit rooms were isolated from one another and separate from the main household residence. They would not have been particularly secure from rodent, insect, or fungus problems, and human theft would have been relatively easy. It is also possible that storage bins and the antechambers in some pit structures may have provided important space for storage, but again these spaces would have been problematic for other than short-term storage. By the mid-eighth century, food storage had been moved to rectangular surface rooms with more secure walls incorporating masonry, or slab lining lower walls. These rooms typically were built in pairs and placed behind and accessed through an entry to a household's larger surface living room. By A.D. 860–880, storage rooms may have had floor-to-ceiling masonry walls and were even more protected by the fact that they were the back rooms in large, well-secured pueblos. They were larger, with mean floor areas of 5.85 m^2, and continued to occur often as two storage rooms

per household. Some researchers have suggested that each room may represent a separate year's harvest to allow for two years' worth of food storage.

THE IMPORTANCE OF GROUND STONE TOOLS AND THE INTENSIFICATION OF THE EARLY PUEBLO ECONOMY

The grinding surfaces on ground stone tools also increased in size as the basin metates and one-hand manos of the late Archaic and early Basketmaker period sites were replaced by the trough metates and two-hand manos of the mid- to late Basketmaker and early Pueblo periods. Trough metates are far more efficient and produce a potentially finer grind for the meal, which would increase the digestibility and nutritional value of the food (see Crown 2000a:246 for an excellent summary). Summary data from ground stone assemblages associated with sites from these periods (Hovezak and Sesler 2002c; Phagan 1988; Wesson 2009) reveal increasing numbers and specialization of grinding tools per household from A.D. 500 to 875. More ground stone tools, greater grinding area on the tools, and wider variety in the tool types all support a proposal that mealing activities were increasingly important in the domestic sphere in the early Pueblo period. The marked increase in the efficiency and specialization of the ground stone tool kit would have been a reasonable investment as the production, storage, and consumption of maize was intensified and its uses in cuisine became more varied.

The shifts in overall economic strategy and related changes in material culture at this time likely also signal the juncture in ancestral Puebloan history when a woman's economic, social, and domestic priorities changed forever. In the historic Pueblos, harvesting or picking of corn appears to have been performed primarily by men, while women husked communally in "husking bees" as the corn was brought in from the fields (Cushing 1920:211). This notion that harvesting constitutes "men's work" while women take over for husking, shelling, drying, and storing is reported in the Rio Grande pueblos as well (Goldfrank 1927; Lange 1959). Roscoe (1991:18) further stresses the strength of the division of male and female responsibilities with respect to corn production at Zuni, noting that "while men were responsible for growing corn, women were responsible for storing and distributing it. Men were not even allowed to enter the granaries." Commenting specifically on the roles of women in food production, Cushing (1897) emphasizes women's marked responsibilities for gardens, the gathering of wild foods, and the storage of corn.

Women assume responsibility for agricultural products as soon as they come in from the field. Husking is a communally performed, repetitive task that occurs seasonally. Cushing (1920:211) describes the scale of this activity, noting that "all over the terraces were women, some busy in the alleys or at the corners below, husking great heaps of many-colored corn, while . . . children romp in, out, over, and under the flaky piles." Hewett and Dutton (1945) also confirm that in the Eastern Pueblos, men pick the corn by hand and bring it back to the village for husking. Interestingly, a division of labor within the process of husking is noted at San Ildefonso, where women gather in the plaza to husk corn by hand, while "the men and boys chop the stalks with axes; within living memory, sharp stones were used for this purpose"(Hewett and Dutton 1945:80). The labor of shelling corn generally follows husking. As Lange (1959:101) describes at Cochiti, "the corn is generally shelled by rubbing one ear against another . . . this work is done by women, old men, and children."

Corn grinding by women is often cited in Pueblo ethnographic literature, as ground corn at various stages plays a central role in both subsistence and ritual life. While habitual grinding of corn is necessary for everyday food consumption needs as well as ceremonial feasts, corn grinding is also an activity performed intensively by young Pueblo women during female initiation rites—a practice that ties the conception and construction of femaleness to the physical act of grinding (Beaglehole 1937; Cushing 1920; Eggan 1950; Stevenson 1904).

Thus, while such trends in material culture and food storage architecture are typically of interest to anthropologists because of the significance of the

emergence of large-scale agricultural production and the concept of the North American Neolithic, it is important to recognize that these changes had profound implications for the role of women in society in general, and the quality and experience of women's daily lives in particular. The quotidian experience of women—which included both economic labors and personal relationships in the community—likely changed within a matter of generations in these village communities. The divisions of labor that emerge and become entrenched at this time are a key element of social reproduction, and community members learned and repeated sexually distinct habitual labor patterns early in life. Eggan (1950:33) suggested that the strong sense of "sex solidarity" he observed in Hopi culture was related to a rigid division of labor, where "the mother is responsible for both the economic and the ritual training of her daughters. She teaches them to grind corn, to cook, to take care of babies, to plaster and repair houses, and to make baskets, plaques, and pottery." In his work on Western Pueblo social organization, Eggan often suggests that the strict division of male and female activity spheres substantially influences the nature of social and kin relations, such that spouses and opposite-sex siblings have weaker interpersonal bonds.

The increasing specialization of women's domestic tasks such corn grinding are likely matched by an amplified role for men as the planters and caretakers of fields. It is a reasonable suggestion, given that the early village aggregation of the early Pueblo period would necessarily increase the distance (Kohler 1992) to fields and the attendant risks of raiding and violence to individuals tending these fields. Both Wilshusen and Potter (2010) and Kohler and Varien (2010) use archaeological data to argue that the threat of violence accelerated population aggregation and likely strengthened the solidarity of newly formed Pueblo I villages. So the very nature and requirements of villages may have reinforced some of these economic changes and the greater separation of male and female tasks.

The sexual division of labor likely began in the northern Southwest as a practical response to changing economic priorities, but it eventually grew to encompass much of social life. Bunzel (1932:501) has pointed out that at Zuni, ritual responsibilities mirrored economic divisions; women feed the gods, while men clothe the gods.

Early Pottery and Meal Preparation

Changing ceramic technology, such as the rapid adoption of pottery after A.D. 300 and an increasing number and type of ceramic vessels after A.D. 600, also offers indirect evidence of the use of progressively greater amounts and possibly new varieties of maize, beans, and squash in the cuisine of this period. Use analysis of early brown ware vessels by Skibo and Blinman (1999) shows that many were used for heating water, cooking thick gruels, or heating food with little water. Some apparently were not used for cooking and would have made excellent vessels for storing critical seed-corn for successive crops. Cooking foods by boiling them in a pots helps to make them far more digestible and safe for consumption (by sterilizing the water). Activities involved in meal preparation within the village appear to be primarily the domain of women, whether cooking for large-scale feasts or domestic consumption. In addition to the grinding-related processing indicated above, Cushing's (1920) descriptions of Zuni cooking at the end of the nineteenth century suggest that women spent a significant amount of time in repetitive movements such as the kneading of dough, mixing, and stirring with wooden utensils.

The economy we are describing would require the continual production of a substantial number of ceramic vessels. By the mid-ninth century, each domestic unit in a small northern Southwest hamlet (R. R. Lightfoot 1994) had two to seven small cooking jars, one to four medium cooking jars, zero to two large cooking jars, zero to three water ollas, a single bowl, and two to three other ceramic vessels with other forms (e.g., animal effigy forms, miniatures, and seed jars). In addition, each household had a remarkable number of sherd containers or tools, with an average of 10 to 20 of these kinds of items per household. Given pottery life spans of one to six years, depending on vessel form and use, a

hidden or inherent cost of maintaining a household was the regular replacement of pots. So, the labor costs of gathering clays and tempering materials, processing these materials, forming vessels and decorating them, and firing them must be added into the regular, and increasing, domestic labor costs of production in these early agricultural societies.

Pottery production is typically a female task in nonindustrial societies, except when there is increasing specialization associated with market-driven economies (see Mills 2000:305 for a summary of sources). Pottery making as a habitual female task is universally recognized by ethnographers of the Greater Southwest. Introducing his study of Pueblo pottery manufacture, Guthe (1925:18) points out that "to the Pueblo woman pottery making is simply one of the mechanical household tasks, just as dishwashing is among us . . . each potter of today watched her mother make innumerable pots while she was growing up, and now with a family of her own, she makes pottery just as did her mother." The multiple stages that characterize pottery production in Pueblo villages appear to have been primarily performed by women, including quarrying, transporting raw materials, processing clay by winnowing and crumbling, pulverizing potsherds for temper, mixing and kneading the clay. At San Juan Pueblo, Jacobs (1995) suggests that women performed all tasks—including those that involved heavy labor—associated with pottery production, including gathering large loads of manure or wood for firing materials, digging and transporting clay and sand from sources to the village, and collecting firewood for multiple purposes.

Although it is problematic and probably misleading to associate all culinary activities solely with women, there is considerable cross-cultural, ethnological, mortuary, musculoskeletal, and metaphorical evidence (Crown 2000a:222–225) that women were primarily responsible for food processing, especially the processing and cooking of agricultural and gathered foodstuffs. Musculoskeletal studies performed by Perry (2004) using a skeletal collection from a late prehistoric site in the northern Southwest found statistically significant degrees of muscular symmetry and robusticity among females (as compared with males) in the muscles and ligaments that stabilize the chest and shoulder girdle. Biomechanically, these muscles and ligaments are differentially activated in the positions associated with grinding at a metate with a two-handed mano. Another interesting trend found in this study implicated women's role in pottery production. Women at this pueblo exhibited significantly more asymmetry than men in the development of the insertion site for the adductor pollicis. This muscle originates from the palmar surface of the third metacarpal and inserts at the base of the proximal phalanx of the first metacarpal, and acts to pull the thumb toward the center of the hand. Ethnographic observers noted that a potter clasps shaping and scraping implements between the thumb and fingers of the dominant hand: "The women hold the kajepe with fingers either slightly bent, or nearly fully flexed; in the latter position the tool is grasped between the thumb and bent forefinger"(Guthe 1925:39). This movement activates the adductor pollicis. Since the non-dominant hand is used to steady the pot, this repetitive activity would potentially result in asymmetrical development of this muscle.

At present, the most direct evidence for women's association with particular labor tasks comes from the late prehistoric and historic periods in the Southwest. However, pairing these data with the archaeological trends in material culture available to us from early Pueblo villages, we suggest that gendered divisions of labor were developed and became a significant structuring force in social life by at least the early Pueblo period. The remainder of this section, along with the next major section on reproduction, demonstrates how women physically became tied to the domestic sphere as their labor and their reproduction became the linchpin of an early Pueblo period household's success or failure.

Cradleboards and Child Rearing

Given women's obvious role in the nursing and care of very young infants, it is striking that one of the most fundamental changes marking the transition from Basketmaker to the early Pueblo period—the cranial deformation that in part defined the

Pueblo I period (Kidder 1927)—has not been more widely considered in attempts to understand the suspected subsistence and labor changes for this period. Although Kidder's original hypothesis that this shift might represent the immigration of a new people and culture into the Colorado Plateau was rejected in the 1940s (Seltzer 1944; Stewart 1940), there has been little serious research on the subject until Piper's (2002) recent analysis of prehistoric cradleboards. Her research suggests that the reorganization of female labor with the intensification of the agricultural complex (i.e., planting, cultivating, harvesting, storage, food preparation, and serving) in the early Pueblo period precipitated a major change in child care. As she notes "[t]his shift is reflected in the appearance of cranial deformation and in changes in the use and morphology of cradleboards" (Piper 2002:41).

Piper examined almost 50 prehistoric and historic cradleboards, as well as ethnographies on Pueblo use of cradleboards, and modern medical evidence of the factors that would result in cranial deformation. Two critical conclusions can be drawn from Piper's research. One is that cranial deformation is primarily a result of infants being placed in a recumbent position and laid on their backs for the first four months of their lives. The second is that there were both soft and hard cradleboards in Basketmaker as well as Pueblo times, so that the supposed shift from soft to hard cradleboards in Pueblo I is actually not evident in her sample. At the end of her research, Piper (2002:67) realized that "the appearance of cranial deformation at the Basketmaker III–Pueblo I transition occurred not because cradleboards were harder but because they were used in a different way." Three striking changes in the Pueblo period bolster this conclusion: foot rests on cradleboards all but disappear in Pueblo times, protective hoods to shade or shelter the infant become more common later, and cradleboards are increasingly of more expedient construction in Pueblo times. These are all features that suggest a less mobile lifeway, less travel with an infant strapped to someone's back or chest, and probably more need of cradleboards, and possibly more infants per household.

The flattening of the back of an infant's skull indicates a major change in how children were cared for at the end of Basketmaker III. Rather than a change of people and their cradleboards, the change in skull shape in the early Pueblo period indicates a change in the organization and locus of activity in women's lives. It suggests that women were more tied to the domestic sphere by tasks associated with an intensified agricultural regime. Some of the changes associated with cradleboards might even hint at the fact that women, on average, were bearing more children in their lives and investing less in the cradleboards used to protect them in their infancy.

The Increasing Importance of the Household

Although we have argued for women's increasing control of agricultural production, storage, and food processing during the period between A.D. 650 and 900, we also must temper our conclusions with Szuter's (2000) caution that access to knowledge of various productive activities may not have been limited to women, but that the exercise of that knowledge may have been restricted. Depending on circumstances, men probably could grind corn and women could hunt and butcher animals. However, the overwhelming evidence so far is that by the ninth century, women exercised new knowledge of more highly productive cultivars, technologies, and labor strategies in order to reconceive household productive tasks in a way that laid the foundations for modern Pueblo life.

The next section presents the evidence that this domestic sphere had more children associated with it, and that part of the intensification was simply associated with feeding more people per household. As lifeways became more sedentary and the annual harvest of domesticated crops became more predictable, the selective forces that favored farming populations over hunting and gathering societies may have shifted to a larger arena and favored groups that were better adapted to exploiting the advantages offered by agriculture. One of those advantages was a higher fertility rate for women and a potentially higher population growth rate for these groups.

EVIDENCE FOR A NEOLITHIC DEMOGRAPHIC TRANSITION BETWEEN A.D. 500 AND 800 (REPRODUCTION)

Wilshusen and others (Chapter 2) estimate that population in the central Mesa Verde region grew from immeasurably low in A.D. 600 to almost 8,500 people in A.D. 850. A similar record of high population growth, albeit at a slightly lower level, is evident for the Durango area of the eastern Mesa Verde region between A.D. 725 and A.D. 825 (Potter, Chuipka, and Fetterman, Chapter 4). In both cases, the authors argue that immigration, primarily from areas to the south of the San Juan River, accounted for the initial surges in the regional populations. Thereafter, it appears that the net reproductive rate (NRR) would have been sufficient to account for at least a large proportion of the population increase. In the simplest terms, by the early eighth century—if not earlier—women were having more children in their lifetime, and more of those children were surviving and growing to be adults who also had more children who lived to reproductive ages.

Evidence for estimating the NRR has been limited until recently. Ann Lucy Stodder (1987) estimated the growth rate for the Mesa Verde region between A.D. 600 to 1150 as being between 2.11 and 2.56 percent per year, and Sarah Schlanger (1987) estimated the rate as being between 1.5 to 2.4 percent per year for A.D. 600 to 1175 for a smaller area of the same region. Neither estimate could untangle the contribution of migration and reproduction to the overall growth rate. Schlanger (1987, 1988) clearly thought that immigration had to fuel at least part of the growth, but cemetery data were insufficient to actually understand what percentage of growth was internal to the region and what came from outside it.

Since the time of Stodder's and Schlanger's estimates, our understanding of the demographic history of this area has changed considerably. First, many researchers (Wilshusen and Ortman 1999; Wilshusen and Wilson 1995; Varien et al. 2007) now recognize a major population decline in the Mesa Verde region in the tenth century. Population appears to decline by at least 80 percent in the tenth century from its ninth-century maximum. Second, there also appear to have been numerous local population shifts (Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2) that make estimating regional population trends at 40-year intervals challenging, but not impossible (Varien et al. 2007). These estimates have been considerably improved by an increasing sophistication in our abilities to estimate the time of site occupations and regional settlement patterns from surface evidence and to calculate the length of site use-lives from techniques that focus on refuse accumulation and other time-sensitive measures (Kohler and Blinman 1987; R. R. Lightfoot 1994; Varien and Mills 1997; A. P. Sullivan 2008).

Recently analyzed early Pueblo I cemetery data from the eastern Mesa Verde region (Wilshusen and Perry 2008), along with an extensive review of prehistoric Southwestern cemetery data (Kohler et al. 2008), offer evidence for a Neolithic Demographic Transition (NDT) that began in the Southwest by about A.D. 300. Increases in fertility rates during this demographic transition and the accompanying high NRR resulted in the population "doubling time," increasing from twofold growth every couple of hundred years prior to A.D. 300 to a doubling of population in two generations' time (40–50 years), barring any calamities. This clearly had tremendous consequences for women and for all society. More adolescents might allow for more labor for the agricultural intensification measures that are discussed earlier in this chapter, yet the rapid demographic changes also would have required other measures for which we have also seen evidence—more storage area for crops, more time for grinding more corn, more or bigger pots for meals, more children to attend to, and new means of caring for them. And as we have suggested, women's roles within the household and the community would have necessarily changed.

The burial data from the Animas–La Plata (ALP) Project in the eastern Mesa Verde are particularly revealing with regard to a potential NDT in the early Pueblo period. These data show a high infant mortality rate (20%), which is not unusual for an early agricultural society. What is surprising is how

Table 10.1. Mortality by age group, Animas–La Plata burials

Age Range	Male	Female	Indeterminate	Total
0–2			35	35
3–4			24	24
5–7			11	11
8–11			12	12
12–15			5	5
16–20		4	7	11
21–25	5	1	2	8
26–30	3	3		6
31–35	3	1	1	5
36–40	1	3		4
41–45	3	4		7
46–50	6	8		14
50+	9	15	6	30
TOTAL	30	39	103	172

quickly the survivorship curve rose for infants as they approached the age of seven (Table 10.1). The proportion of immature (5–19 years) skeletons (n = 39) to the total number of individuals estimated to be five and older (n = 113) in the burial sample was high (15P5 = .345).[1] There are only a few possible explanations for this ratio. One would be that there was a massive epidemic or widespread warfare that killed substantial numbers of particular segments of the population in a relatively short time and that the burial data are somehow skewed. That does not appear to be the case, based on evidence for a steady addition of individuals to the burial areas over at least a two- to three-generation period (40–60 years) of time.

Another explanation, one that is increasingly accepted, is that this high proportion of immature individuals (ages 5–19) in comparison with the whole population older than five years is highly correlated with both a high birth rate and a high NRR (Bocquet-Appel 2002; Bocquet-Appel and Naji 2006). Although we must offer the caveat that this is based on investigations of a single project focused on a particular locality and fairly short time frame (A.D. 760–820), it represents such a large population—with good spatial and temporal control—that it does appear to represent a good case for a demographic shift due to higher fertility and survivorship.

The final issue to be considered is whether immigration also might skew the burial population. Examination of strontium isotope ratios ($^{87}SR/^{86}SR$) of teeth from this population suggests that the contribution of immigrant population to this expansion was much smaller than originally suspected (Ezzo 2010).[2] There was an important influx of people to the area between A.D. 725 and 760, but the more aggregated settlements associated with the burials represented in Table 10.1 primarily postdate 760. The possibility remains that immigration from another nearby locality might skew the burial data somewhat, but given that only two or three generations are represented in the time period, this also does not appear to be a significant factor.

Investigations of the NDT for the Greater Southwest (Kohler and Glaude 2008; Kohler et al. 2008) reinforce the notion that the ALP data are not an anomaly. Kohler and his colleagues examined over 51 composite burial assemblages dating between 1000 B.C. and A.D. 1611 and found a distinct and quite measurable increase in the 15P5 ratios between A.D. 500 and 1150. The overall pattern of rapid growth soon after the widespread adoption of agriculture and development

of pottery in the Southwest was remarkably similar to comparable patterns seen in the Neolithic paleodemographic data from Europe, North Africa, and Southwest Asia (Bocquet-Appel and Bar-Yosef 2008).

Our thinking of the NRR's contribution to prehistoric change has changed dramatically in the last 15 years (Shennan 2002). Whereas a high prehistoric NRR was considered to be 0.3–0.5 percent (see Weiss 1984), Bocquet-Appel and Naji now suggest an NRR of 1.26 percent as being a reasonable estimate for yearly growth during an NDT period. A woman's life clearly would be changed by almost doubling the number of children that she might bear in her lifetime. It would change her health, her mobility, her roles within the household and outside of it, and the kind of power and decision-making abilities she might have within a household, a lineage, or a community.

Power Shifts in Male and Female Roles in the Early Pueblo Period (Exchange and Social Power)

The material evidence for social power and social prestige at almost any level in these early societies is difficult to see in the archaeological record. Even those of us who have had the good fortune to visit villages with traditional lifeways and at the outer economic edges of the world system can testify to the difficulty of spotting leadership or honored individuals until we are familiar with the customs of these societies. In our brief examination here, we focus on the evidence for leadership of ritual performances and powerful "houses" within early Pueblo villages. There clearly are other data that might signal differential gendered prestige that one could examine in the regional data in future research—evidence of access to valued foods, mortuary patterns, and subtle material evidence of prestige hierarchies within a society (Crown, ed. 2000). For our summary, we simply wish to weigh our findings in this chapter against those suggested by Wilshusen, Ortman, and Phillips in Chapter 11. They focus on evidence in rock art, architecture and features, and historical linguistics to suggest changes in community organization for this period.

In a seminal paper on late Basketmaker leadership, Kelley Hays-Gilpin (1996) first used rock art (and other evidence) to argue that male leaders in the sixth and seventh centuries took control of seasonal gatherings through their increasing control of ritual knowledge and practice. Powerful symbols such as the lobed-circle symbol, a representation of female fertility, were increasingly appropriated by male ritual leaders. Hays-Gilpin proposed that it was likely that this early agricultural society was based on a matrilocal postmarital residence (see also Kantner 2004:72–76; Ware 2002), a marriage system in which men would have moved to their wife's household so that valuable agricultural land would stay in a single line. This position would have placed men in an increasingly precarious political situation, where they lived with few of their own lineal relatives. Men could have balanced this loss of power by seeking prestige and power through alliances with other men in other Basketmaker communities at seasonal ritual gatherings.

In Chapter 11, Wilshusen, Ortman, and Phillips build on this and other (Robins and Hays-Gilpin 2000) research and propose that whereas public rituals were held in large gatherings at geographically central locations controlled by no particular household or lineage, by Pueblo I the control of rituals had shifted to particular lineages within the largest villages. Yet they also argue that the imagery and metaphors associated with these large feasts emphasized "the social relations and activities embedded in household and family life." Although they do not discuss this shift in terms of gender relations, we suggest that it also may reflect an increasing division of male and female roles in villages. We propose that the power of the matrilineage was focused on the U-shaped roomblocks and enclosed plazas where public feasts were held. Some archaeologists have argued that these roomblocks functioned as early great houses (Schachner 2010; Wilshusen and Van Dyke 2006; Windes 2004; Van Dyke 2007). We suggest that the power of male ritual alliances and exchange networks was focused on private performances within oversized pit structures centered in

these plazas, whereas the public performances would have been controlled by the lineage, or possibly the moiety, that dominated the roomblock.

Our proposal will remain untested at this point. It would require culling through the early great house data to examine the evidence that might support it or deny it. But, it is striking that the abandonment of one of the largest of these villages, McPhee, is marked by the burial, and probable sacrifice, of at least four adult male–female pairs. These paired sacrifices were on the floors of high-prestige pit structures (Wilshusen 1986a), some of which were located in the plazas of early great houses. We wonder if, in failure—in the abandonment of a large and previously powerful village—we see the otherwise difficult-to-see power of the male ritual leaders and the female lineal heads revealed in these individuals. It may only be in failure and in death that we can see the powerful place these individuals held in their societies.

Mortuary patterns provide a remarkable means to recognize gendered differences in the construction of individual and group identities. Potter and Perry (2011) have examined the patterning and variations evident in early Pueblo cemeteries excavated in Ridges Basin as part of reservoir construction near Durango, Colorado. A total of 142 burials were removed from four major cemetery areas in the basin that were going to be destroyed by the construction. They were interred between A.D. 740 and 810 and represent individuals who likely lived in the communities of this relatively small drainage basin. The large number of individuals from a single locale, the relatively short time span, and the uniform documentation as part of a single excavation project offered a unique example to examine gendered identity as evident in early Pueblo mortuary ritual. The identity of the individuals was an important aspect of the archaeological research and the repatriation discussions taking place on account of the Native American Graves Repatriation Act.

There were several distinct patterns in the treatment of male and female adult individuals in the Ridges Basin remains. Adult female burials were more likely to be found in pit structure fill contexts than males, even though it should be noted that the majority of females were buried in middens. Adult male interments were much more consistently placed in middens or in non-midden, nonstructural areas of the sites. Exotic items of personal adornment such as olivella beads, which were from the Pacific Coast, and faunal bone pendants, many made from fox mandibles, were associated with female burials; these were either very unusual or totally lacking in the male burial associations. Ceramic vessels were often found with adult female burials, and the ceramic types found with them were more diverse than those found in association with males. In turn, adult males in Ridges Basin were more often associated with red ware pottery, a finely made trade ware from southeastern Utah, and males were also significantly more likely to be associated with minerals such as quartz, turquoise, azurite, or fossils. These patterns in the nonlocal items suggest that there were different networks of exchange for items associated with women and men.

The two largest cemeteries in Ridges Basin (one to the east and the other to the west) were sufficiently dissimilar in mortuary associations, burial direction, and cranial and dental biodistance data that Potter and Perry (2011) were confident in asserting that the cemeteries were used by groups from different biological and cultural backgrounds. In addition, when all the burials were grouped by their locations in the basin and the associations considered in light of historic Pueblo ethnographies, there were many more female associations (turkey and waterfowl remains, marshlands, and almost all of the richest female burials) with the eastern and central communities and many more male associations (raptor remains, projectile points, large mammal remains, and the most elaborate male burials) with the western communities. Although these associations might imply different descent rules for the two groups, Potter and Perry also suggested that one group may have been conceptualized as "masculine" and the other as "feminine" in their interactions with one another.

It is likely that the richness of burials at this time was more representative of an individual's relative importance to the larger community than of his or her individual wealth. An example of this may be

a young female (estimated age 24–26) buried on the floor of Pit Structure 4 at House Creek Village (5MT2320) in the Dolores area of the central Mesa Verde region (Robinson and Brisbin 1986). She had been laid on a mat with a total of 36 complete or nearly complete vessels of a variety of types (Bluff Black-on-red, Chapin Gray, Moccasin Gray, Mancos Gray, and Chapin Black-on-white), three elaborate bone tools (an antler gouge, a pressure flaker, and an awl), 12 manos, a coiled basket, a group of long bones from mule deer and a pronghorn antelope, and a very large bear skull arrayed around her. Based on the many elaborate female burials in Ridges Basin, as well as this notable burial in the central Mesa Verde region, it is evident many women played powerful roles in early Pueblo community life.

CONCLUSION

This paper, and others in this volume, reference a diverse and growing body of archaeological evidence that points to the division of gendered labor roles emerging in a particularly structured way in early Pueblo villages in response to the pressures of a Neolithic transition tied to economic and reproductive changes. In later prehistoric and historic pueblos, this division of labor evolved beyond functional labor divisions to encompass symbolic and ritual organization, and the distinctions between masculinity and femininity influenced and reproduced Pueblo social relations. The division of labor was expressed and reinforced in virtually every dimension that contained meaning—symbolically, in ritual and ceremonial life, in the spaces they occupied, and in bodily experience. We see little flexibility for individual community members in choosing to violate these social maxims.

We find it paradoxical that women's labor contributed so significantly to revolutionary social and economic change in the early Pueblo world, yet it is debatable whether these transitions could be seen as ultimately positive for the status and experience of women. Crown (2000a) has proposed that sexually divided labor organization does not necessarily adversely affect women's status, and women's labor might be viewed by community members as complementary to men's labor, in some cases resulting in "parallel status hierarchies." Although it is exceedingly difficult to quantify an emic concept of status in prehistory, some objective criteria that focus on health and access to resources are arguably relevant to questions of status.

There is evidence in both the early and late periods that women were excluded from large-game hunting and spent a significant amount of time engaged in food-processing activities that fed and benefited community members of both sexes. Ezzo's (1991, 1993) bone chemistry analysis of a late prehistoric skeletal collection from Grasshopper Pueblo concluded that women suffered from severe dietary stress stemming from a lack of meat in the diet, but that men consumed adequate levels of protein. The high mortality rate of women at the pueblo was associated with this dietary stress and was likely related to an inability within the constraints of the sexually structured organization of labor to acquire and consume adequate amounts of protein (Perry 2004). Whittlesey (1978, 1999) and Whittlesey and Reid (2001) observed at Grasshopper that the graves of women were significantly less elaborate than those of men. In many ways, the graves of women were similar to those of children, who may have not yet achieved full "personhood" as initiated members of the community.

Thus, the gendered divisions of labor that appear to have their roots in early Pueblo villages may be seen in a number of ways. Women's labor and reproduction furthered the development of economic, social, and ritual organization that radically increased the scale and complexity of these unique and remarkable communities. At the same time, the changes may have been on balance detrimental to the physical health and well-being of women in these communities.

Even based on our limited review of the immense amount of archaeological evidence for the northern Southwest from the late Basketmaker and early Pueblo periods, it is clear to us that a variety of important shifts occurred in the nature and character of food production and human reproduction. These changes bear witness to a fundamental

transformation of gender roles and male–female power relationships in the early agricultural communities, at least in the Mesa Verde region and possibly elsewhere in the northern Southwest. Ever since the first Pecos Conference, Southwestern archaeologists have defined the Pueblo I as the first period in which cranial deformation is practiced and culinary vessels with neck-banding become common. As we have shown in this chapter, changes in pottery, child-rearing practices, and the move from single pit structure residences into aboveground hamlets and village pueblos signal an increasing dependence on, and intensification of, the agricultural economy. They also are inexorably tied to a demographic transformation seen in other comparable Neolithic societies. Women, or the Corn Mothers, are at the heart of these innovations, changes that anchor the subsistence and ritual practices for northern Pueblo peoples for at least the next five centuries.

Notes

1. These figures are slightly different than those reported in Wilshusen and Perry (2008:432–433). One individual has been moved into the Age 3–4 category that was earlier classified as 5–7.

2. Of the various isotopes used in archaeological analyses, strontium (Sr) isotopes have proven the most useful for studies of ancient migration.

CHAPTER 11

Processions, Leaders, and Gathering Places

Changes in Early Pueblo Community Organization as Seen in Architecture, Rock Art, and Language

RICHARD H. WILSHUSEN, SCOTT G. ORTMAN, AND ANN PHILLIPS

ARCHAEOLOGISTS IN THE U.S. SOUTHWEST increasingly see the late Basketmaker III and early Pueblo I periods (A.D. 650–950) as the time when the foundations of ancestral Pueblo societies were laid (Reed ed. 2000; Van Dyke 2007; Wilshusen and Ortman 1999). As shown in several chapters in this volume (also see Wilshusen and Perry 2008), rapid population growth, marked intensification of the agricultural economy, increasing sedentism and settlement size, and fundamental shifts in social identity and power all took place during this period. These changes are characteristic of early Formative or Neolithic societies worldwide, from the Levant of southwestern Asia, to the Yellow River Basin of China, the Andean highlands of South America, and the Gulf Coast of Mesoamerica. Archaeologists who study each of these cultures struggle to understand the new forms of leadership and community organization that must have accompanied the emergence of village societies and enabled their long-term maintenance. One change that was characteristic of many early Formative societies was a redefinition of relationships between individuals, households, the community, and the landscape. We focus on these conceptual realignments in this chapter and use multiple lines of evidence to suggest how models of leadership and community organization shifted as the earliest ancestral Puebloan villages formed in the central Mesa Verde region between A.D. 760 and 880.

Our evidence includes archaeological excavations and surveys that have taken place in the region over the last 100 years, detailed drawings of rock art panels dating between A.D. 600 and 1000, and a recent study of Kiowa-Tanoan languages focusing on vocabulary related to community organization. Our general conclusion is that early Pueblo society underwent several fundamental changes during this period. First, the social scale of daily interaction changed dramatically, from small groups of 10 to 30 people at A.D. 600 to networks of hundreds of people by A.D. 800. Second, the organization and control of periodic group assemblies shifted from a leadership based on age and ability to a more competitive leadership rooted in lineages and ethnic factions within individual communities. Third, the metaphors emphasized in discourses concerning origins, power, property, and community changed from images focused on the body, bodily actions, and topography to images associated with houses and kinship.

Early Villages in the Mesa Verde Region: Landscape Data from Archaeological Excavations and Surveys

Before Villages: Dispersed Settlements and Periodic Gatherings

Over a century of archaeological research in the Mesa Verde region has yielded a remarkable data set for documenting the emergence of early Pueblo villages. At A.D. 500, the population of the greater Mesa Verde region (about 21,000 km^2) was so small as to be immeasurable. The area had been occupied during the Basketmaker II period (until about A.D. 350 or 400), but these early populations were small and focused on the eastern and western peripheries of the region. After A.D. 600, however, there was a rapid expansion of farming populations throughout the Mesa Verde region, and over the course of the seventh century there was a dramatic rise in the numbers of small farming hamlets in areas with soils suitable for dry-land agriculture (Wilshusen 1999a). By A.D. 800, the overall population of the Mesa Verde region had increased to approximately 5,000 persons (Wilshusen and Ortman 1999: fig. 3; also see Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2). If these people were spread evenly over the landscape, the population density would have been very low, but in certain locales population densities ranged from 1 to 5 persons per square kilometer by A.D. 760.[1]

Migration must have been involved in this episode of rapid population increase between A.D. 600 and 760, but paleodemographic data and analyses suggest robust intrinsic growth was also involved (Kohler et al. 2008; Wilshusen and Perry 2008). This demographic expansion, which is often referred to as the Neolithic Demographic Transition, was supported by several improvements in the subsistence economy that took place around A.D. 600. Prior to this time, early agricultural populations had subsisted on cultivated maize and squash supplemented with gathered wild plant foods and hunted game (K. R. Adams 2006:3–5). The introduction of more productive maize varieties (Maís Blando and Maís de Ocho) during Basketmaker III dramatically increased the productivity of agricultural lands (Kohler and Glaude 2008:97), and the adoption of beans (i.e., "Anasazi," pinto, and similar varieties) along with the first true cooking pottery (Ortman 2006:102–103) resulted in a "complete" vegetable protein mix within a purely agricultural diet. As a result, there was a marked increase in intrinsic population growth rates as early Pueblo populations made a commitment to full-time agricultural subsistence.

Although a few late Basketmaker III (A.D. 600–750) sites contain three to six houses, most contain only one or two (Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2). Most were situated close to essential resources such as domestic water, agricultural land, and timber. Large block surveys show a highly dispersed settlement pattern, with potentially contemporary residential sites typically no closer than 200–400 m apart. These surveys also reveal potential clusters of Basketmaker III sites (Allison et al., Chapter 3; Wilshusen et al., Chapter 2) that may represent communities, but it is difficult to determine the number of contemporaneous sites in these clusters and, thus, their population histories. Steward (1937) long ago suggested that unilateral lineages were the basic unit of Basketmaker III social organization, but his argument was based on the assumption that communities consisted of no more than 50 individuals. As we will show, portrayals of group assemblies at great kivas or dance circles in rock art show many more than 50 people. If these represent communal gatherings, the organization of these communities must have been more complex than the unilateral lineages originally suggested by Steward.

The nature of late Basketmaker III society is better suggested by patterns in pit structure size and ritual floor features. Figure 11.1 presents a summary of the total floor areas (main chamber and antechamber) of 62 excavated pit structures from the central and western Mesa Verde regions, all of which date from approximately A.D. 640 to 725. The chart also distinguishes pit structures lacking ritual features (black) from those possessing a sipapu (gray) and those possessing complex sipapus or floor

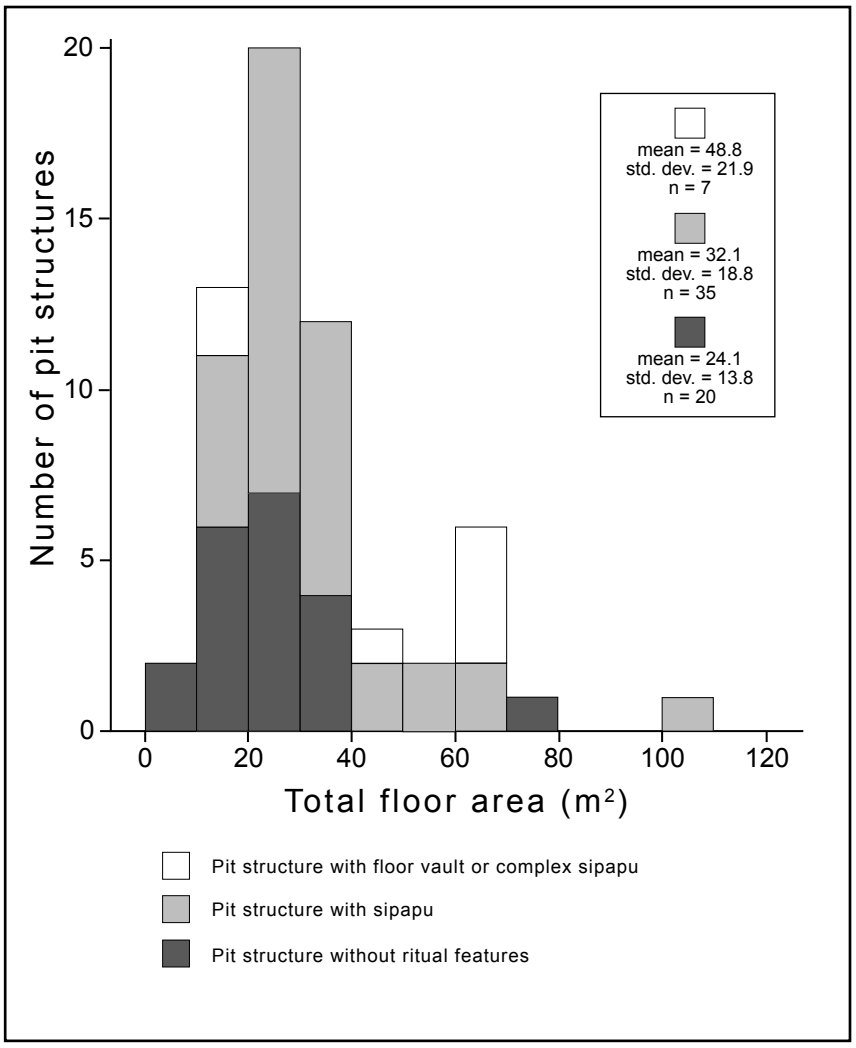


Figure 11.1. Distribution of late Basketmaker house sizes and ritual floor features. Data sources: Birkedal 1976; Brisbin 1986; Brisbin and Varien 1986; Chenault 2004; Dalley 1973; Davis 1985; Errickson 1995; Fetterman and Honeycutt 1982, 1995; Firor et al. 1998; Hayes and Lancaster 1975; Hewitt 1983; Hurst 2004; Kuckelman 1986; Kuckelman and Morris 1988; Lancaster and Watson 1954 Lux-Harriman 1982; McBride 2004; McNamee and Hammack 1992; McNamee et al. 1992a, 1992b; Mitchell 2009; J. L. Montgomery 1986; J. N. Morris 1991b; Motsinger and Chenault 2004; Nusbaum 1981; Phillips and Chenault 2004; Rohman 2009; Wilshusen and Mobley-Tanaka 2005; J. P. Wilson 1974.

vaults (white). This compilation shows that pit structure floor areas ranged from under 10 m^2 to more than 100 m^2, and that this distribution is bimodal, with a primary mode at 20–30 m^2 and a secondary mode at 60–70 m^2. This compilation also suggests that pit structures lacking ritual features tended to be small, and pit structures with elaborate ritual features tended to be large, but that these distinctions were not categorical. Some of the smallest pit structures had elaborate ritual features, and some of the largest did not. These data suggest that in most cases pit structure size was a function of household size and that the inhabitants of larger houses were more likely to perform rituals that required ritual floor features. However, the association of ritual floor features with houses of the larger size suggests that some pit structures were sized to facilitate the hosting of people from other households for private ritual performances. This in turn implies a degree of competitiveness among households or lineages.

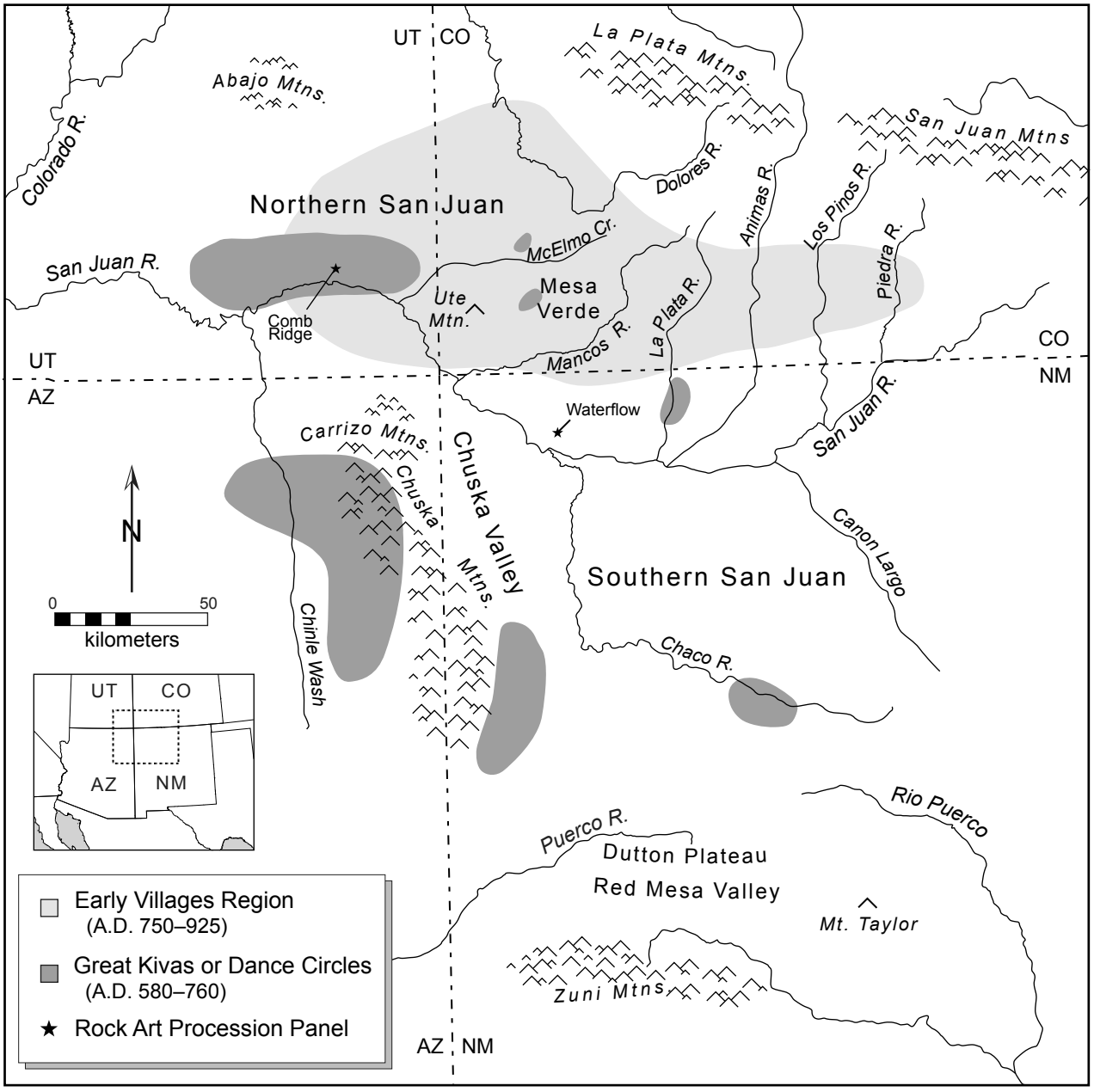


Figure 11.2. Distribution map of northern Southwest late Basketmaker community ritual centers (A.D. 600–760), early Pueblo villages (A.D. 760–925), and locations of two important rock art panels.

Public architecture is also known for the late Basketmaker III period. At least a dozen dance circles, great kivas, or oversized pit structures dating prior to A.D. 760 have been identified in the greater Mesa Verde region (Figure 11.2; Table 11.1). These features are similar to contemporary or earlier structures south of the San Juan River in the central or southern Chuska valleys, the Cove area, the Chinle Valley, and the Chaco core (Table 11.2). Additional examples are documented farther south and west in the Little Colorado drainage on the Defiance Plateau and in the Pueblo Colorado and Puerco river valleys (Gilpin and Benallie 2000; Schachner, Gilpin, and Peeples, Chapter 6). Dance circles are typically 10 m to 25 m in diameter and are shallowly excavated areas encircled by large upright stone slabs (Figure 11.3). The encircling wall may have stood between 0.5 m and 1.5 m in height,

Table 11.1. Pre-village sites (A.D. 580 and 760) with great kivas, dance circles, or notable oversized pit struc-tures, north of the San Juan River

Site Name	Site Number	Region	Features	Notes
Hidden Village	42SA2112	Southeast Utah	Great kiva (1)	Montoya 2008
Montezuma Creek School Site	Unknown	Southeast Utah	Great kiva (1)	Mohr and Sample, n.d.
Allen Village	42SA21474	Southeast Utah	Great kiva (1)	Bond et al. 1992
Bluff Village	42SA523/ 8303	Southeast Utah	Great kiva (1)	Allison et al., Chapter 3
Greasewood Flat Mesita	No number	Southeast Utah	Great kiva (1)?	Allison et al., Chapter 3
Recapture Community	Multipe numbers (see 42SA8889)	Southeast Utah	Oversized pit str (1)	Nielson et al. 1985
Alden Hayes Dance Circle	No number	Southeast Utah	Dance circle (1), domed pit str (1)	Coffey, comp. 2007
Fred Site	42SA6179	Southeast Utah	Great kiva (1)	Allison et al., Chapter 3
Monument Village	42SA971	Southeast Utah	Great kiva (1)?	Allison et al., Chapter 3
Red Top	No number	Southeast Utah	Great kiva (1)	Allison et al., Chapter 3
Mitchell Springs	5MT10991	Central Mesa Verde	Great kiva (1)	Dove et al. 1997
Great Pithouse	5MT10647	Central Mesa Verde	Great kiva (1)	Fetterman and Honeycutt 1994
East Rincon	LA3131	Eastern Mesa Verde	Great kiva (1)	Toll and Wilson 2000
Holmes Group	LA1898	Eastern Mesa Verde	Great kiva (1)?	Dykeman and Langenfeld 1987

Table 11.2. Pre-village sites (A.D. 580 and 760) with great kivas, dance circles, or notable oversized pit struc-tures, south of the San Juan River

Site Name	Site Number	Region	Features	Notes
Kiva Mesa	AZ-I:26:47	Cove	Great kiva (3), plaza (2)	Reed and Wilcox 2000
Broken Flute Cave	AZ-E:8:1	Cove	Dance circle (1)	E. A. Morris 1980
Twin Lakes Site	LA104106	Southern Chuska Valley	Oversized pit str (1)	Lakatos 1998
Tohatchi Village	LA3098	Southern Chuska Valley	Great kiva (1)	Stuart and Gauthier 1981
Unnamed	LA61955	Southern Chuska Valley	Oversized pit str (1)	Damp and Kotyk 2000
Twin Lakes Cluster (Tohatchi Flats)	LA80422	Southern Chuska Valley	Oversized pit str (1)	Kearns et al. 2000
Juniper Cove	Unknown	Chinle Drainage Basin	Great kiva (1)	Gilpin and Benallie 2000
Beautiful Valley	NA9437	Chinle Valley	Great kiva (1)?	Gilpin and Benallie 2000
Site 423	29SJ423	Chaco	Great kiva (1)	Wills and Windes 1989
Shabik'eschee	29SJ1659	Chaco	Great kiva (1)	Wills and Windes 1989

but unlike great kivas the structures do not appear to have been roofed. Great kivas also had average diameters of greater than 10 m and enclosed more than 80 m^2 of floor area (Figure 11.4). The largest examples had massive roofs that covered up to 350 m^2 and would have weighed more than 50 U.S. tons (R. R. Lightfoot 1988).

Archaeologists have interpreted dance circles and great kivas as centers for community rituals, but when excavated, their floor surfaces are nearly devoid of materials and features and are thus difficult to interpret functionally (P. S. Martin 1939; R. R. Lightfoot 1988). The significance of these structures is thus based primarily on their large size and the fact that they most often occur in significant locations: above the confluence of drainages, on topographic divides, or on prominences with expansive views of the surrounding landscape. Early

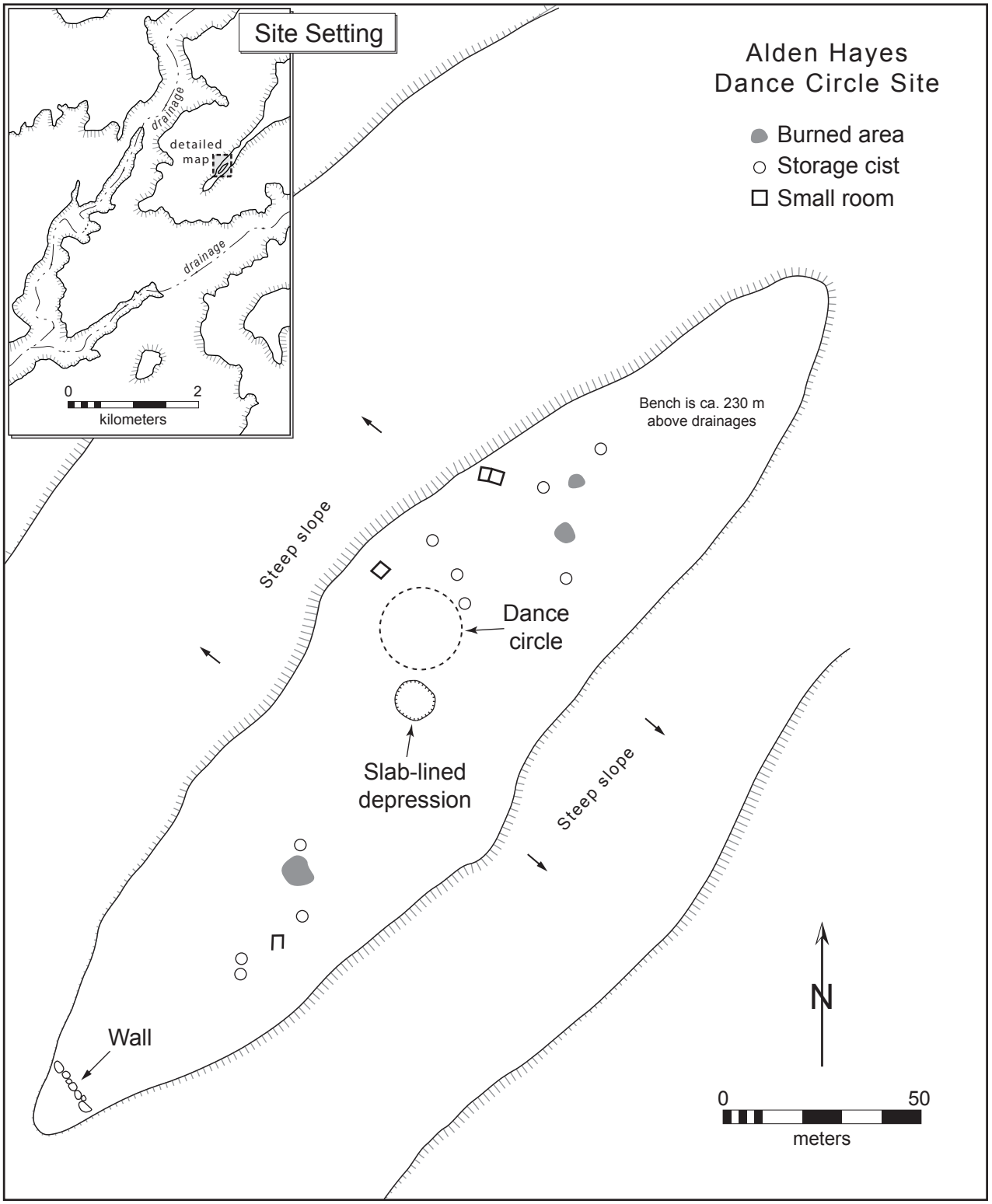


Figure 11.3. Alden Hayes Dance Circle Site, A.D. 620–720 in southeastern Utah, with site setting to illustrate the striking landscape location of this site. Adapted from Coffey, compiler, 2007.

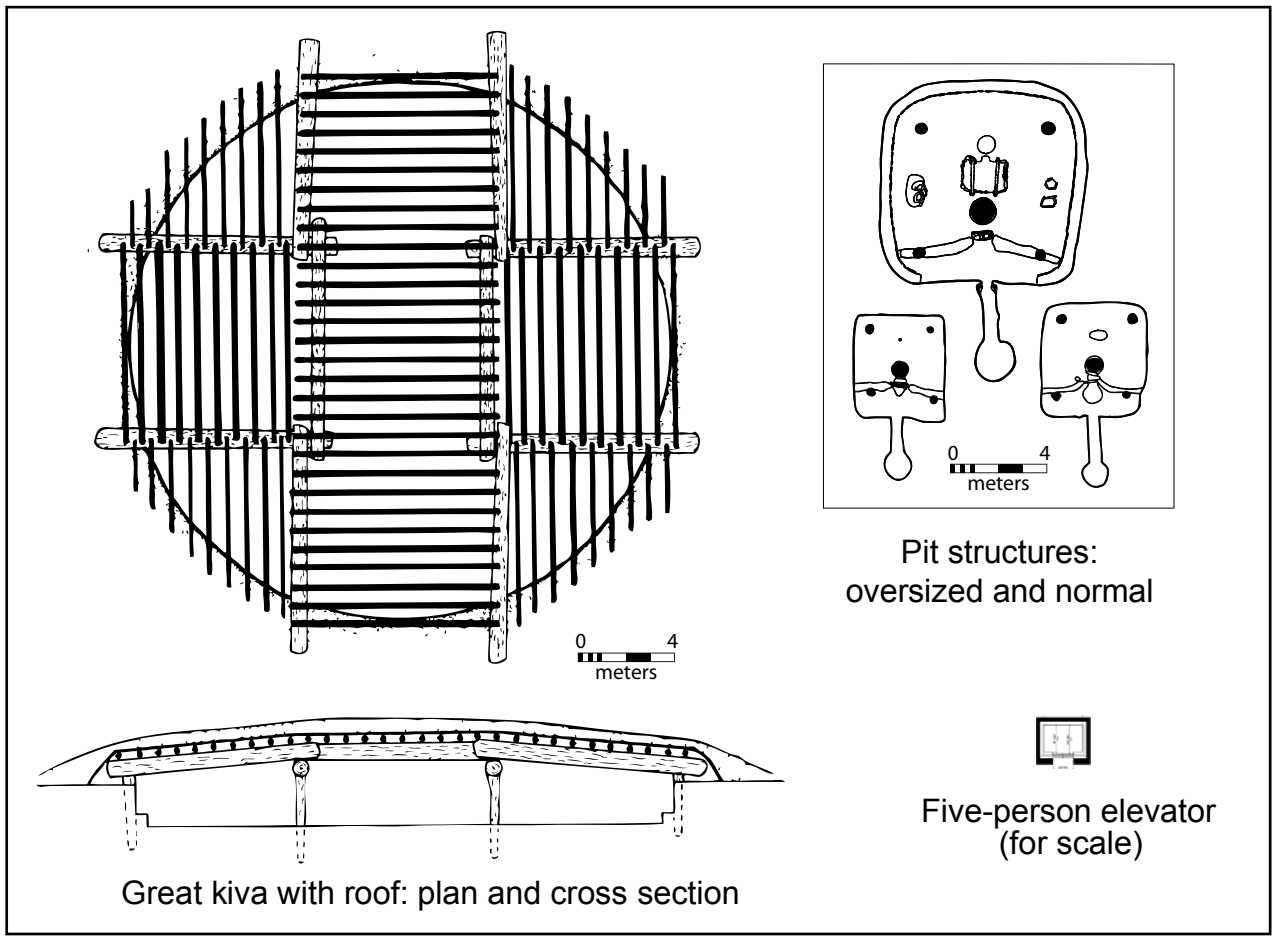


Figure 11.4. Plan maps of a typical early great kiva (A.D. 800), oversized pit structure (A.D. 875), two average-sized pit structures (A.D. 875), and a modern five-person elevator (A.D. 1990) for scale.

dance circles and great kivas appear to have been constructed in places that facilitated the gathering of social groups from at least two different directions. So, in addition to viewing these features as public architecture (Adler and Wilshusen 1990), as landscape features, and as historically important places (Reed 2000:13–14; Van Dyke 2007:84), it is also fitting to see them as features that reflect the community organization of the people who identified themselves as community members.

Gilpin and Benallie (2000) argue that sites with great kivas in northeastern Arizona may have served as year-round residences for only a few select households, but that their associated storage features may have stored surpluses for periodic gatherings of hundreds of individuals. Periodic ceremonies at these sites would have thus met multiple social and economic needs of dispersed communities by providing settings for economic exchange, events where young people could find mates, and mechanisms for the redistribution of surpluses. Robins and Hays-Gilpin (2000) also propose that rock art panels depicting early great kivas or dance plazas in northeastern Arizona and southeastern Utah suggest increasing male control over ritual activities during this period. These large structures, now evident in rock art and as social landscape features, probably served different purposes in different places, but in all cases substantiate the existence of social networks that extended beyond kinship ties or locally shared resources.

Early Villages: Their Economies, Organization, and Place on the Landscape

The earliest villages in the greater Mesa Verde region, such as Alkali Ridge (Brew 1946), Martin

Site 2 (P. S. Martin 1939), Morris 23 (E. H. Morris 1939), Fortified Spur, and Sacred Ridge (Chuipka 2009b), appeared in the Mesa Verde region between A.D. 760 and 790 (see also Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2). Additional villages continued to be constructed, used, and abandoned until A.D. 925. Over this period, the modal settlement changed dramatically, from a site with 2 pit structures and 3 to 12 surface storage structures to a site with 10 to 20 pit structures and from 50 to more than 100 surface structures. More than 60 early villages have been identified and located, and we know of 45 that have been mapped (Figures 2.1, 3.1, and 11.2; see Table 11.3 for a list of these villages). Excavation data are also available for 17 villages, so there is a rich early Formative record to interpret.

The occupational histories of early villages were complex and varied. Even with regular maintenance, the post-and-adobe roomblocks in these villages only lasted about a generation. Pottery accumulations suggest that the average occupation span of a house was also about one generation (see Wilshusen et al., Chapter 2; also Varien et al. 2007: table 3). As a result, sites that were inhabited for longer periods contain pit structures that were filled with trash following the completion of replacement structures, and we have evidence of periodic razing and rebuilding of surface rooms on the foundations of earlier rooms. New timbers would have been harvested regularly for construction and repair but were not reused as often as timbers in later, stone masonry buildings (Varien et al. 2007:291–292) and are only preserved in burned contexts. As a result, gaps in cutting-date distributions could reflect episodic occupations of sites (Schlanger and Wilshusen 1993) or the nonpreservation of timbers from structures that did not burn. The absence of remodeling evidence at some villages suggests that they were not occupied for more than 25–40 years (Wilshusen 1999b:210). However, sites such as McPhee Pueblo were clearly dismantled and rebuilt multiple times over a longer period (Brisbin et al. 1988), and Grass Mesa Village had two distinct occupations (Lipe et al. 1988). Whether these occupations were continuous or episodic is very difficult to determine. In either case, the number and arrangement of pit structures, and the number of rooms constructed in the roomblocks, both changed with each reconstruction. Thus, it is clear that the population histories of early villages were quite dynamic, and the peak populations implied by the total architectural footprint often represents only 25–40 years of the overall site history. Perhaps due to its impermanence, early village architecture was fairly responsive to changes in the composition of the communities that lived in them.

The peak of early Pueblo village occupation in the greater Mesa Verde region dates to approximately A.D. 840–880. Varien and others (2007: table 4) estimate a momentary population of 6,181 people for the most densely settled area of the central Mesa Verde at this time, and Wilshusen (2002:118) calculated a momentary population of 7,271–8,629 for a larger area that includes the less densely settled periphery. Given that the above estimates do not include the western (southeast Utah) or eastern Mesa Verde regions, it is likely that Wilshusen and Ortman's (1999:377) peak population estimate of at least 10,000 people for the entire region remains reasonable. The key point here is that population levels and densities rose dramatically in the 200 years between the mid-seventh and mid-ninth centuries. The robust intrinsic growth implied by this increase (Wilshusen and Perry 2008, Chapter 10), the increased interaction among previously isolated groups it encouraged (Potter and Chuipka 2007; numerous chapters in this volume), and the new threats to health and safety that accompanied it (see Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen and Perry, Chapter 10) must have changed what Kohler and Van West (1996) called the "calculus of self interest" in these societies. We will argue that significant changes in the real and the imagined Early Pueblo community developed in dialectical relation with these changes in the social environment associated with village formation.

Great kivas continued to be built and used during the period of early village formation, but many villages did not have great kivas, and the number in use declined during this period (see Table 11.3 for a list of great kivas contemporary with villages

Table 11.3. Documented villages in the eastern and central Mesa Verde regions and southeast Utah (A.D. 725–925)

Site Number	Site Name	MV Region	Peak Occupation Period (A.D.)	Pit Structures	No. of Rooms	Community Architecture	Reference
Multiple numbers	Chapin Mesa 2 (Cliff Canyon Cluster)	Central	725–775	8	50+	Great kiva (1)	Shanna Diederichs, pers. comm. 2007
5MT296	Fortified Spur	Central	725–800	3+	60+	Great kiva (1)	Glowacki and Varien 2003; Wilshusen et al., Chapter 2
42SA2756	Cave Canyon Village	Southeast Utah	725–925	15+	?	None	Allison et al., Chapter 3
42SA523/8308	Bluff Pueblo I village	Southeast Utah	750–925	?	50+	None	Neily 1982; Allison et al., Chapter 3
42SA13	Alkali Ridge Site 13	Southeast Utah	760–790	15+	150+	Oversized pit str (1)	Brew 1946; Allison et al., Chapter 3
42SA5222	Cottonwood Falls	Southeast Utah	760–900 (est.)	?	?	?	Mahoney 1998a,1998b; Severance 2004, 2006a, 2006b
42SA971	Monument Village	Southeast Utah	760–800 (est.)	?	50+	Oversized pit str (1)	Allison et al., Chapter 3; Patterson 1975
No number	Greasewood Flat	Southeast Utah	725–800 (est.)	?	?	Great kiva ?	Allison et al., Chapter 3
No number	Jensen Site	Southeast Utah	725–800 (est.)	?	?	None	Allison et al., Chapter 3
5MT2107	Martin Site 2	Central	760–790	10+	100+	None	P. S. Martin 1939
No number	Risenhoover	Central	750–825	?	75+	None	Coffey 2004
5LP3639	Morris Site 23	Eastern	760–820	48	100+	Great kiva (1)	E. H. Morris 1939; Chuipka 2008a
5LP2576		Eastern	750–820	15+	75+	None	1996 CO site form
No number	Morris Site 19	Central	750–820	15+	?	None	E. H. Morris 1939
5LP3643		Eastern	750–?	15+	?	Great kiva (1)	Chenault 1996
5LP245	Sacred Ridge	Eastern	760–810	10	50+	Tower (1) Domed pit str (1)	Potter and Chuipka 2007; Chuipka 2009b; Potter et al., Chapter 4
5LP2026 and 25+ others	Blue Mesa	Eastern	760–820	74	150+	Oversized pit str (across the river)	Gladwin 1957; Fuller 1988b; Chuipka and Potter 2007
Multiple site numbers	Eastern Cluster	Eastern	760–810	12	20+	None	Wilshusen 2007
Multiple site numbers	Chapin Mesa 1 (Research Cluster)	Central	775–825	10+	100+	Great kiva (1)	Shanna Diederichs, pers. comm. 2007
Multiple site numbers	Wetherill Mesa	Central	775–825	11	75+	None	Shanna Diederichs, pers. comm. 2007
5MT23	Grass Mesa (early element)	Central	775–825	20+	?	Great kiva (1)	Lipe, Morris, and Kohler 1988
No number	Truelson	Central	775–825	7+	50+	None	Wilshusen site visit 1989; Ortman et al. 2007
No number	Morris 11	Central	775–850	8?	100+	None	E. H. Morris 1919b; Wilshusen site visit 1989
No number	Pillars	Southeast Utah	775–850	?	?	None	Allison et al., Chapter 3
5MV1664, 1665, 1679	Badger House (Houses 6, 7, and Great Kiva)	Central	775–835	7+	65–75	Great kiva (1)	Hayes and Lancaster 1975
42SA20420, 42SA23743	Bluff Bench Great Kiva	Southeast Utah	800–925	No	No	Great kiva (1)	Allison et al., Chapter 3
5MT3879	Cirque	Central	810–850	10+	100+	None	Pierce et al. 1992; Ortman et al. 2007
5MT6	Cross Roads	Central	810–850	10+	100+	None	Wheat 1954; Ortman et al. 2007
5MT2830	Morris 13	Central	820–850	?	100+	None	E. H. Morris 1939; Farmer and Emslie 1976; Wilshusen and Blinman 1992
5MT2831	Morris 33	Central	820–875	10+	125+	Oversized pit str (1)	E. H. Morris 1939; Farmer and Emslie 1976; Wilshusen and Blinman 1992
5MT2829	Morris 27	Central	820–850	?	75+	None	E. H. Morris 1919b, 1939; Farmer and Emslie 1976; Wilshusen and Blinman 1992
5MT2826	Perfect PI site	Central	820–850	8+	100+	?	Farmer and Emslie 1976; Wilshusen and Blinman 1992
5MT2822	Morris 12	Central	825–900	8+	100+	None	E. H. Morris 1919b; Farmer and Emslie 1976
No number	Morris 17	Central	825–900	?	75+	None	E. H. Morris 1919b
No number	Boon Pueblo	Central	825–900	7+	50+		Wilshusen site visit 1998
5MV1067	Morefield Great Kiva	Central	830–890	No	No	Great kiva (1)	McLellan 1969
5MT4475 and others	McPhee Village	Central	830–880	71	400+	Oversized pit str (1)	Kane 1986b; Wilshusen et al., Chapter 2

Table 11.3. (*cont.*)

Site Number	Site Name	MV Region	Peak Occupation Period (A.D.)	Pit Structures	No. of Rooms	Community Architecture	Reference
5MV1679	Badger House (Houses 1 and 4)	Central	840–875	7+	45+	None	Hayes and Lancaster 1975
5MT23	Grass Mesa (late element)	Central	840–895	60+	150+	None	Lipe et al. 1988
5MT4353	Windy Ruin	Central	840–880	20+	200+	Oversized pit str (1)?	Kane 1986b
5MT2663	Cline Crest	Central	840–880	15+	200+	Oversized pit str (1)?	Kane 1986b
5MT6794	May Canyon	Central	840–880	15+	250+	Great kiva (1)	Blinman 1986
5MT2182, 5MT4793	Rio Vista	Central	840–880	15	100+	None	Wilshusen 1986b
5MT2320	House Creek	Central	840–880	12	75+	Great kiva (1) apart from site	Robinson and Brisbin 1986
No number	Lost Creek	Central	840–880	?	200+	?	Wilshusen site visit 1989
5MT6849	Smoots 1	Central	840–880	14	200+	Oversized pit str (1)	Honeycutt and Fetterman 1982
5LP2164	Morris 25	Central	840–880	10+	150+	Great kiva (1)	E. H. Morris 1939; Firor and Riches 1988; Wilshusen et al., Chapter 2
5MT2108	Martin Site 1	Central	850–880	10+	75+	Great kiva (1), Dance circle (1)	P. S. Martin 1939; Wilshusen et al., Chapter 2
42SA22760	Hedley West Hill Ruin	Southeast Utah	840–880	7+	75+	?	Ortman and Wilshusen 1996
No number	Morris 18	Central	840–920	?	150+	?	E. H. Morris 1919b, 1939
5MT3822	Finley	Central	840–920	16	100+	None	Matlock and Duke 1997
5MT12936	Millard	Central	840–920	9	100+	Great kiva (1)	Matlock and Duke 1997
42SA11800	Pinnacles	Southeast Utah	840–900	?	?	Plaza?	Hurst et al. 2004
DCA-89-344 and nearby sites	Kemrer Village	Southeast Utah	850–925	?	?	None	Allison et al., Chapter 3
42SA16962	Decker Ruin	Southeast Utah	850–925	?	?	Dance plaza or great kiva?	1985 site form; Winston Hurst, pers. comm. 2007
42SA12768	King Henry Mine Site	Southeast Utah	850–925	?	?	None	Irwin et al. 2000:6–229
42SA1964; 42SA259	Red Knobs & Red Knobs Annex	Southeast Utah	875–925	?	?	Great kiva (1)	Allison 2004
42SA2110	Nancy Patterson	Southeast Utah	875–975	?	?	Dance circle (1)	C. Thompson et al. 1988
42SA700	Edge of the Cedars early village	Southeast Utah	875–925	?	?	None	Hurst 2000; Allison et al., Chapter 3
42SA8019	Moki Steps	Southeast Utah	875–925	?	?	None	Allison et al., Chapter 3
42SA17347	Moki Island	Southeast Utah	875–925	?	?	None	Allison et al., Chapter 3
42SA3217	Sacred Mesa	Southeast Utah	875–950	?	?	None	Allison et al., Chapter 3
No number	Parker site	Southeast Utah	875–950	?	?	Great kiva (1)?	Allison et al., Chapter 3
42SA14430	Gravel Pit Ruin	Southeast Utah	875–950	?	?	None	Allison et al., Chapter 3
42SA24475	Duck Bowl	Southeast Utah	875–950	?	?	None	Allison et al., Chapter 3
No number	Jerry Martin site	Central	880–920	?	50+	?	Coffey 2006
No number	Wancura/Guynes	Central	880–920	?	50+	?	Coffey 2006
No number	Wancura-Johnson	Central	880–940	?	150+	Great kiva (1)	Coffey 2006; Wilshusen et al., Chapter 2
No number	Baird/Wilson	Central	880–940	?	50+	?	Coffey 2006
LA4195	Sambrito village	Eastern	890–920	19	13	Great kiva (1)	Eddy 1966
LA4380	Bancos village	Eastern	890–920	14+	13+	Great kiva (1), Oversized pit str (1)	Eddy 1966
5LP1649	Raven Ridge Pueblo	Eastern	920–950	13	60+	Oversized pit str (1)?	Chuipka et al. 2009
No number	Eastern Village (Piedra Village)	Eastern	890–920	?	50+	?	Roberts 1929, 1930

dating to A.D. 725–925). Of the twenty known or possible great kivas at villages, eight occur in the earliest (late A.D. 700s) villages, seven in the latest (early A.D. 900s) villages, two are apart from villages, and only three occur in villages constructed during the mid-A.D. 800s. In some cases, such as at Grass Mesa Village, the great kiva was contemporary with the early village, but was abandoned and filled with debris prior to construction of the later village. Sequences like this suggest that conceptions of the community and its relation to the landscape changed as villages became the norm. Great kivas had marked significant points on the social and ritual landscape when communities were dispersed, less well defined, and gathered only periodically. With the development of villages in which much of the community population was permanently gathered, villages themselves became significant social and ritual locations.

An early form of great house architecture, consisting of U-shaped roomblocks that enclosed plaza spaces, appears to have replaced great kivas and dance circles as foci of civic-ceremonial activity over time (Wilshusen and Van Dyke 2006; Windes 2004). Important elements of these early great houses were oversized pit structures with elaborate floor features that probably housed community leaders (Schachner 2001; Wilshusen 1989). The floors of these oversized pit structures, unlike early great kiva floors (Figure 11.4), are pockmarked by paired altar support posts, the roofed sipapus (i.e., earth navel features marking the mythic emergence point of a group of people), and hundreds of small holes archaeologists have interpreted as prayer-stick holes. These features are still found in the most important pueblo ritual chambers today (Wilshusen 1988c, 1989), and although their specific meanings have almost certainly changed over the centuries, there is little doubt of their significance for ritual performance.

During the late Basketmaker III period, these types of ritual floor features were constructed in both small and large pit structures, but never in great kivas or in dance circles. So it does not appear that oversized pit structures of this period functioned as equivalents to these older forms of public architecture. Instead, the former may have been meeting places for localized lineages or sodality leaders, the homes of influential "head-men" (Feinman et al. 2000), or simply the homes of especially large families (Gilpin and Benallie 2000); whereas the latter may have marked centers of ritual power and mythic emergence without being owned or associated with individual leaders. The significant change brought about by village formation, then, was the unification of private and public ritual in a single built environment (Blinman 1988b, 1989; Potter 1997, 2000; Potter and Ortman 2004). This close association of secret and public ritual remains a fundamental characteristic of Pueblo community life today.

The tight arrangement of residences in a village was designed to concentrate hundreds of individuals within the space that was previously used by a single household. Whereas differences in ethnicity and lineage, wealth, and ritual knowledge were diffused by the spacing of residences in earlier times, village life required new ways of accommodating these differences. The arrangement of some villages suggests that dual organization may have been one of the mechanisms used to integrate early village residents (Van Dyke 2007:74–75; Wilshusen and Potter 2010). In addition, villages needed clearly defined leadership; and one reasonable interpretation of the U-shaped roomblocks, with their enclosed plazas, oversized pit structures, substantially built roomblocks, and middens containing feasting refuse, is that they represent the homes of such leaders. These changes in early village architecture suggest the emergence or formalization of social institutions that regulated ritual knowledge and social power from an earlier system in which power and influence were based on age, kinship, and achievement.

It is important to emphasize that oversized pit structures and U-shaped roomblocks do not occur in all early Pueblo villages, even in local areas (Wilshusen and Ortman 1999). These differences likely derive from the distinct prior histories of the peoples who created them. In other words, both intrinsic population growth (Wilshusen and Perry 2008, Chapter 10) and migration from areas to the east and west contributed to the formation of a

village-based society in the ninth-century central Mesa Verde. These immigrants brought distinct pottery traditions, architecture, and ritual organizations with them, but by A.D. 860 these traditions had mixed to such an extent that it is difficult to define or trace the histories of specific groups. Ethnic identity and interaction are apparent among early villages on either side of the Dolores River valley, but ethnicity really is a moving category of just who *we* or *they* are—with boundaries, identities, and cultural content in constant flux and open to renegotiation. So, how did these changes happen?

How Community Gatherings Changed and Power Shifted during the Early Pueblo Period: The Rock Art Evidence

The emergence of villages appears to have encouraged a redefinition of cultural identities, a reallocation of social power, and a reformatting of the early Pueblo social landscape. Villages became socially central places and replaced the dance circles and great kivas that had been constructed in geographically central places to facilitate the gathering of dispersed communities during the late Basketmaker III period. In the following pages, we suggest that this shift from geo-centrism to socio-centrism is also apparent in the early Pueblo rock art record.

In a pioneering study, Robins and Hays-Gilpin (2000) demonstrate that the kinds of rituals portrayed in rock art changed dramatically between A.D. 200 and 700. They show that Basketmaker II (A.D. 200–500) rock art emphasized life-cycle rituals such as initiation rites, but that Basketmaker III (A.D. 500–750) imagery presents public gatherings and processions much more frequently. Robins and Hays-Gilpin tie these changes in rock art to basic settlement and subsistence changes and emphasized the role of ritual in uniting individuals into bands or larger communities. Here, we build upon some of their interpretations regarding periodic ritual gatherings at dance circles or great kivas.

Robins and Hays-Gilpin offer succinct summaries of three late Basketmaker–early Pueblo procession panels: a single-line procession of less than a dozen figures adjacent to a dance circle at Broken Flute Cave (A.D. 620–680), in the Prayer Rock district of northeastern Arizona; a small panel with a procession leading to a lobed circle at the Butler Wash site (A.D. 600–700) in southeastern Utah; and the very large Procession Panel (A.D. 650–800) at a major crossover point on Comb Ridge, also in southeastern Utah. All three compositions clearly show lines of people gathering in, leaving from, or congregating near lobed circles or large circles that contain smaller lobed circles.

The lobed circles in these panels appear to be representations of actual objects, examples of which have been found with male burials in Canyon del Muerto and in the structural fill of Broken Flute Cave (E. A. Morris 1980:133). These objects were large pendants with a lobed-circle-shaped backing of wood onto which turquoise and shell mosaics were affixed. The lobed-circle shape has been interpreted as a representation of the womb, a powerful fertility symbol, or possibly the early Basketmaker house. Depictions of these objects in Basketmaker rock art occur throughout southeastern Utah and northeastern Arizona (e.g., at sites along Cottonwood Canyon, Butler Wash, Chinle Wash, and the San Juan River) (Robins 1997), an area that coincides with the distribution of early great kivas and dance circles (Figure 11.2; Tables 11.1, 11.2). Correspondences between the lobed-circle shape and the floor plans of early Basketmaker pit structures (circular shape, sloping ramp entrance; Robins and Hays-Gilpin 2000:237), the association of lobed-circle depictions and pendants with great kivas and dance circles, and the association of kivas and wombs in contemporary Pueblo culture (Young 1987) all suggest that lobed circles, great kivas, and dance plazas were associated with concepts of fertility and emergence (also see Hays-Gilpin 1996:39–40).

Hays-Gilpin (1996) argued that during late Basketmaker times, leaders increasingly controlled the organization and scheduling of periodic gatherings through their control of ritual knowledge and practice. She hypothesized that men appropriated the lobed-circle symbol, an icon of fertility, in order to counterbalance the power women would amass

in an increasingly agricultural society with matrilocal postmarital residence. Because men would have moved to their wife's household in such a system, they had greater potential, and greater need, to set up alliances with other men in dispersed Basketmaker communities. Hays-Gilpin (1996) suggests the association of male phallic symbols and female fertility symbols in procession panels is a reflection of this development.

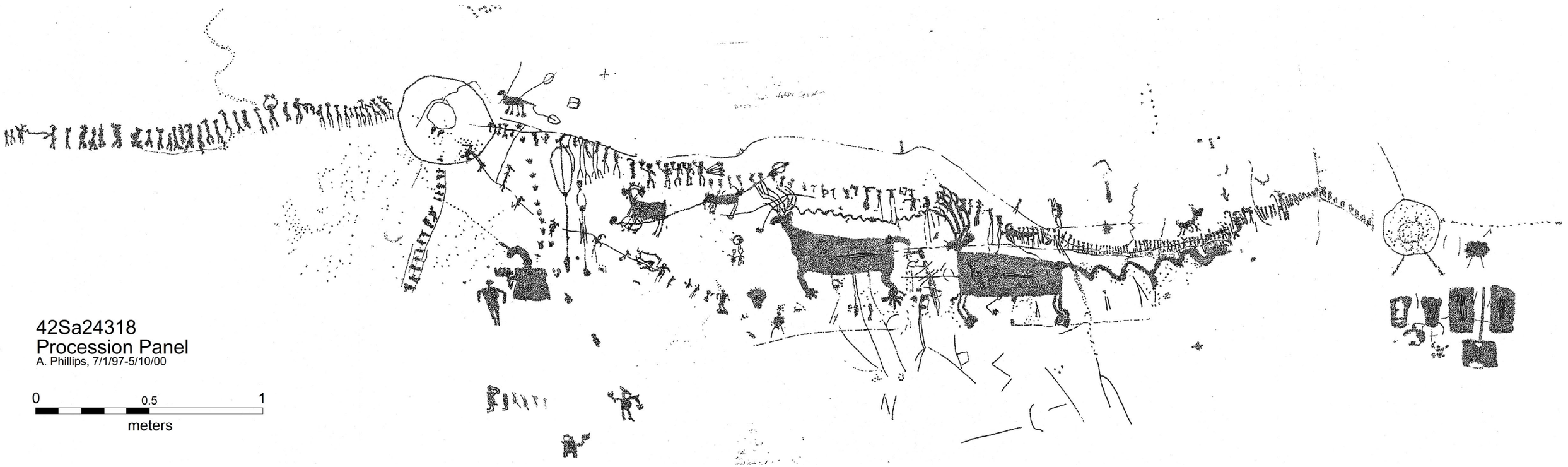
Robins and Hays-Gilpin also emphasized that images of unity and convergence as seen in lines of figures holding hands or in procession panels represent a fundamental change from early Basketmaker rock art. We concur and suggest the change implies a shift in the aspects of social life deemed most salient, from an early focus on shamanism and rites of passage to a later focus on group ritual. Later rock art also exhibits more diverse elements that appear to reflect the expanding spatial and demographic scales of communities observed in the settlement data. Robins and Hays-Gilpin (2000:247) note that "gender and age role differentiation, intracommunity competition for prestige and resource control, intercommunity activities including rituals and feasting, and alliance and conflict" all became appropriate subjects of representation later in the Basketmaker period.

Periodic gatherings of groups larger than a cluster of related households would have created social tensions that needed to be controlled through ritual and etiquette, but these gatherings would also have facilitated the long-term vitality of local residence groups by providing opportunities for the exchange of information, marriage partners, and material goods, and by providing a framework for the resolution of disputes. Gatherings at great kivas and dance circles would have also provided new opportunities for aspiring leaders to accumulate power and influence over larger areas, and larger groups of people. The social networks created by periodic ritual gatherings almost certainly connected more than the 130–250 people who actually attended the events (Adler and Wilshusen 1990:142). For individuals or small groups seeking alliances, these gatherings would have fostered social ties that extended far beyond local groups. These gatherings must have also required new ritual practices that built upon existing knowledge of curing, hunting, farming, and history to provide a basis in shared ritual experience for larger social identities encompassing multiple lineages and residential groups. The late Basketmaker–early Pueblo procession panels appear to reflect these changes in social life (Hays-Gilpin 1996).

Forging a New Community: Analysis of the Procession Panel

Nowhere are these changes more clearly depicted than in the well-known Procession Panel, a 7-meter-long composition in southeastern Utah (Figure 11.5, see fold-out). This panel illustrates a ritual gathering of at least two large groups coming from opposite directions to a great kiva or dance circle. The composition dates no earlier than A.D. 650 and no later than A.D. 800, based on the style of the rock art, the presence of a bow and arrows in the image, and construction dates for early great kivas and dance circles. The panel is located on the crest of a prominent ridge from which one can view much of the surrounding landscape. Robins and Hays-Gilpin (2000: fig. 12.7) discuss this panel with a primary focus on gender relations and the shifting division of labor and power during late Basketmaker III period. Our discussion here focuses on the creation and transformation of group identity reflected in this panel. The organization of the assembling groups and the identities of their members are partly revealed in the elements, organization, and design of the panel, along with its subject matter, narrative, and setting.

Although there are supernatural or symbolic elements associated with this image (large, almost mythic-looking ungulates and mountain sheep from an earlier period panel, possibly a winged being in one of the procession lines, and a variety of bighorn sheep, mountain lion, and possibly canine zoomorphs), the detailed illustration of individuals and their specific arrangement in the overall composition suggests this panel portrays a specific event. It is a narrative, a visual "telling" of at least two social groups coming together from different directions. Of course, it also may be a composite story of several



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repeated gatherings, but the key elements of the story would be repeated parts of several ritual gatherings at the same place involving the same groups of people. The panel appears to have objectified and sanctified this event by showing the involvement of supernatural beings and power objects. Numerous aspects of the panel and its design reflect elements of archetypical Pueblo gatherings as they occur today. Although the visual focus is clearly on the two lines of anthropomorphic figures approaching from opposite directions, two much smaller and less conspicuous lines also approach the center. The number four is prototypical in present-day Pueblo ritual and cosmology, so these bottom two lines may embed this important concept in the narrative.

The event depicted in the Procession Panel probably did not occur in the immediate vicinity, because the panel itself occurs on the crest of Comb Ridge, a massive and steep monocline 250 m high that separates Butler Wash from Comb Wash. The panel is carved and pecked into a sandstone face close to and overlooking a carved set of steps and handholds that traverses the steeper, west side of the ridge. There are carved steps in the much less steep slick rock on the east side leading to the crossover point, apparently marking a distinct route. It is one of the few points at which the ridge can be safely crossed in this area, and so it likely marks a geographic boundary between resource areas for different groups at a high point that overlooks much of the countryside. The occurrence of a prominent panel depicting two large groups and two small groups uniting at a center place adjacent to a high crossover may therefore present a memorial narrative of the unification of two groups at the previous boundary of those groups. Because it is a statement of unity placed at a natural, geographic boundary, it may commemorate the original event that joined the groups together. If so, the early Pueblo period would appear to have been a time when socio-geographic boundaries between local groups broke down and were replaced by more encompassing identities based on shared ritual experience and exchange.

Overall, balance and dualism are central to the composition of the panel. The most noticeable features consist of two large circles with smaller interior circles which may represent great kivas or dance circles, two long lines of anthropomorphic figures moving from opposite directions into the larger circle to the left, two very large ungulates—possibly elk or large deer—with supernatural or symbolic features (hooves with digits, a horned serpent tail, and scratched-out centers), two pairs of sandals with scratched-out centers beneath the pecked-out circle to the right, and two shorter lines of anthropomorphic figures that approach the large circle from below. A lone mountain lion (based on its footprints, apparent claws on its front feet, body shape, and long tail) stands at the two o'clock position just above the structure. There are numerous smaller figures, as well as several more medium-sized zoomorphic figures pierced by atlatl darts, and several distinctive anthropomorphic figures well below the circle, but these appear to relate to sub-narratives or later additions embedded and integrated in this very complicated rock art panel.

The fundamental narrative of the Procession Panel is the joining of distinct groups in a central location. The longest of the four lines processing toward the central circular structure consists of approximately 120 anthropomorphs that exit from the left (west) side of the smaller pecked-out circle at the extreme right (east). Two pairs of differently sized and shaped scratched-out sandals beneath the pecked-out circle may reflect the abandonment of a previous gathering place and the journey to a new one. The style and manufacture of the sandals, with left and right feet but lacking a jogged toe, reinforce the dating of this panel to the late Basketmaker III or possibly early Pueblo I period. The leading figure from this long line has already entered the newer, larger, and more central circle from the right (east), and a pair of lobed circles is also present in this destination feature. The line to the left has as many as 37 distinct figures approaching from the west. Unlike the line to the right, the closest left-line figures are still outside the circle. Three of these figures appear to have their right hands in the air. This gesture could be interpreted as a greeting or as a call to halt, but the fact that there are six anthropomorphic figures in the opposite line who also have right hands in

the air suggests that a salute or greeting is more probable. The twelfth figure in the line to the left plainly carries two lobed circles. As discussed earlier, these are probably representations of actual objects that were symbols of emergence, fertility, and identity. Given that a pair of lobed circles is already in the circle, it appears that the composition overall depicts the coming together of two distinct groups in a central place.

The two procession lines to the bottom of the great kiva/dance circle are less well defined and have far fewer figures than the two main lines. The bottom left line at the six o'clock position is the least distinct of the four lines and has only 15 vaguely defined anthropomorphic figures. One of the figures in the line may have entered the circle, but this is uncertain. The bottom right line at the four o'clock position is quite spread out and consists of 18 figures with varied body shapes. The first two figures appear to be carrying two poles or a ladder, with the first figure evidently inside the structure. The role(s) of the two smaller lines appear(s) to be secondary to the very prominent and much longer lines approaching the great kiva/dance circle from the east and west. These smaller lines may thus exist primarily to bring cosmic balance to the composition.

Closer inspection of the panel reveals details about the organization of these groups and the identities of some of the individuals. The majority of the anthropomorphic figures in the four procession lines are nondescript, but about one in five have notable hairstyles or headdresses (ponytails, top knots, feathers, or birds), carry distinctive objects (crook-neck staffs, bags on their backs, lobed circles, bow and arrows, a flute?), or are gesturing with their hands. The sheer variety and distribution of items across procession lines suggest that at least some of these figures represent specific individuals that were known to the artist. In addition, the fact that symbols of authority are distributed somewhat evenly across the lines suggests that leaders of distinct social groups may have orchestrated the gathering. Although the right-side line has four times the number of figures than the left-side line, it is intriguing that figures with notable characteristics such as hairstyles, headdresses, gestures, or authority symbols occur with equal frequency (24) in each line.

Overall, this panel provides a much livelier and more detailed picture of late Basketmaker–early Pueblo society than is possible on the basis of excavation data alone. The rock art style, kinds of tools portrayed in the panel, and dates for early great kivas in the region all support the dating of this panel to between A.D. 650 and 800. Procession panels like this one present the best evidence available concerning community organization and interaction among dispersed farming groups in the decades immediately prior to early Pueblo village formation.

Reimagining Community: Great Leaders and Great Houses of the Tenth Century

There are no known procession panels in the central Mesa Verde region that date to the peak period of early Pueblo villages. In fact, there is surprisingly little rock art of any kind associated with these earliest great house communities. However, following the disintegration of many early Pueblo villages at the end of the ninth century, the central Mesa Verde region population dispersed broadly, from areas west of Montezuma Creek across the Chuska Mountains, into the San Juan River corridor, and south to the area surrounding Chaco Canyon (Wilshusen and Van Dyke 2006: fig. 7-7). And it turns out that depictions of tenth-century community organization do occur in at least some of these areas.

An excellent example is the well-known procession panel at the Waterflow site (LA 8970) in northwestern New Mexico (Holmes 1878: pl. XLIII, no. 1), near the boundary between the Mesa Verde and Chaco regions. The Waterflow site overlooks the location where the Chaco River flows into the San Juan River, a major route of travel from the Mesa Verde region toward Chaco Canyon, some 55 km to the south. Thus, the rock art of this locality was likely created, at least in part, by the descendants of early Pueblo villagers.

Waterflow is a multicomponent site with hundreds of different associated rock art elements

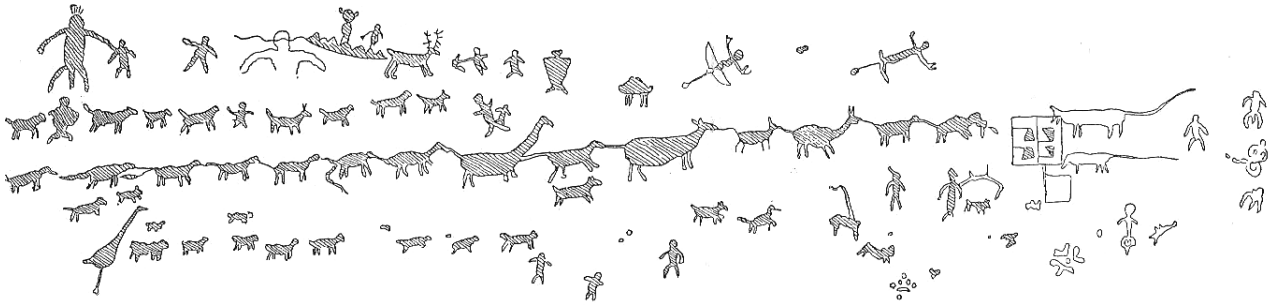

Figure 11.6. Waterflow Procession Panel (A.D. 900–1000) in northwestern New Mexico.

etched into a prominent bluff on the north side of the San Juan River. Based on the rock art styles associated with this panel, it most likely dates to the tenth century. The panel depicts a procession to a central place (Figure 11.6), but in contrast to earlier depictions, in this case there are three parallel lines of zoomorphs and one line of ritual leaders or spirit beings approaching a square we interpret as a gathering place or community structure. In comparison with earlier procession panels, this composition presents several differences in its thematic elements. The focus of the gathering is shown as a square instead of a circle; and instead of lobed circles, the community center is divided into halves, with geometric motifs in each half. Also, in this composition, zoomorphs dominate (elk, deer, mountain lion, bird, dog, and possibly sheep), whereas anthropomorphic figures are secondary. Finally, instead of four lines converging from different directions, with a variety of different individuals portrayed, there is a more abstract quality to the Waterflow Panel and little sense of individuality, humanity, or event structure.

The Waterflow Panel does not appear to represent specific individuals or a particular historical event; rather, the portrayal is of a more abstract order and presents groups of specific animals along with anthropomorphic figures with headdresses, an elk, and a hunter with a bow, and winged beings above. The lower bodies of the winged beings are bows and arrows, and the arms are arched like wings with paired feathers or "feather knives" in their hands. They are reminiscent of powerful mythic beings such as the Knife-feathered Monster (Cushing 1883) associated with the Zuni Priesthood of the Bow, or the hero twins in a number of Pueblo societies (Tyler 1984; see also the *katsina* illustrated in a kiva mural in Goldfrank 1962: painting 63). Instead of one mountain lion (identified by its long tail) at the destination point of the procession, in this case there are two. These lions appear to be guarding the square structure, recalling the association of lions with the war captains, members of the warrior society, hero twins, and "outside chiefs" in Pueblo ethnography (Lange 1959; Parsons 1939:184). A pair of stone lions is also in the center of an important hunting shrine at the ancestral Keresan site of Yapashi, in Bandelier National Monument.

We believe comparisons of the Waterflow Panel with the earlier Procession Panel illustrates the fundamental transformations in ritual practice, community organization, and leadership that took place between A.D. 700 and 1000. First, we propose that the balanced dualism evident in many aspects of the Procession Panel was institutionalized by the tenth century. As noted in the regional summary for the central Mesa Verde region (Wilshusen et al., Chapter 2), many early Pueblo villages appear to have been organized around dual divisions that potentially had roots in the actual pattern of group assembly during the Basketmaker III period. We suggest that the Waterflow Panel, with its divided-square central place, reflects the institutionalization of a dual division, segmentary society. This dualism is encoded primarily in the paired lions and the halved square with mirror-image double-pendants. The central square figure may be an abstract representation of the concept of community, but several details lead us to interpret these square figures as

symbols of actual communities. First, there are a number of additional squares with different interior designs at various spots along the cliffs at the Waterflow site. Also, in at least three cases, decorated squares are presented in pairs, with distinct designs in each, as though geographic or conceptual relationships between social groups were being mapped out (see Schaafsma 1992: fig. 16, for an illustration of a group of four of these squares). Finally, in at least six cases, these squares form the heads of anthropomorphic bodies, as though the symbol represented the group, their central structure, and their "head-man" all at once. These anthropomorphic figures with emblematic bilateral square heads (Figure 11.7) occur in other locales in direct association with tenth-century communities focused on great kivas or oversized pit structures (e.g., Sites LA 78535 and LA 98500 in Wilshusen 1995 and Site 2469 in Cole 1990). We therefore propose that these elaborated-square figures represent actual tenth-century communities of the area in symbolic form.

Second, we suggest that, instead of encoding empirical relationships between actual individuals who converged on geographically central great kivas and dance circles, the Waterflow Panel depicts tenth-century Pueblo communities in a conceptual way, through totemic representations of clan groups and symbolic representations of administrative positions, as opposed to actual individuals. We believe this interpretation is justified because the processions of animals are toward abstract representations of the community, and these processions are watched over by beings that present the symbolic associations of leadership positions in historic Pueblo communities. If this interpretation is correct, it would suggest the fundamental shift in Pueblo community organization during the late Basketmaker–early Pueblo period was from communities organized around real social relationships rooted in kinship, geography, and metaphors of the body to communities organized around conceptual relationships among categories of people and animals.

In summary, our analysis of the rock art evidence suggests community organization in early Pueblo villages emphasized balanced dual divisions, probably as a means of integrating the distinct identities,

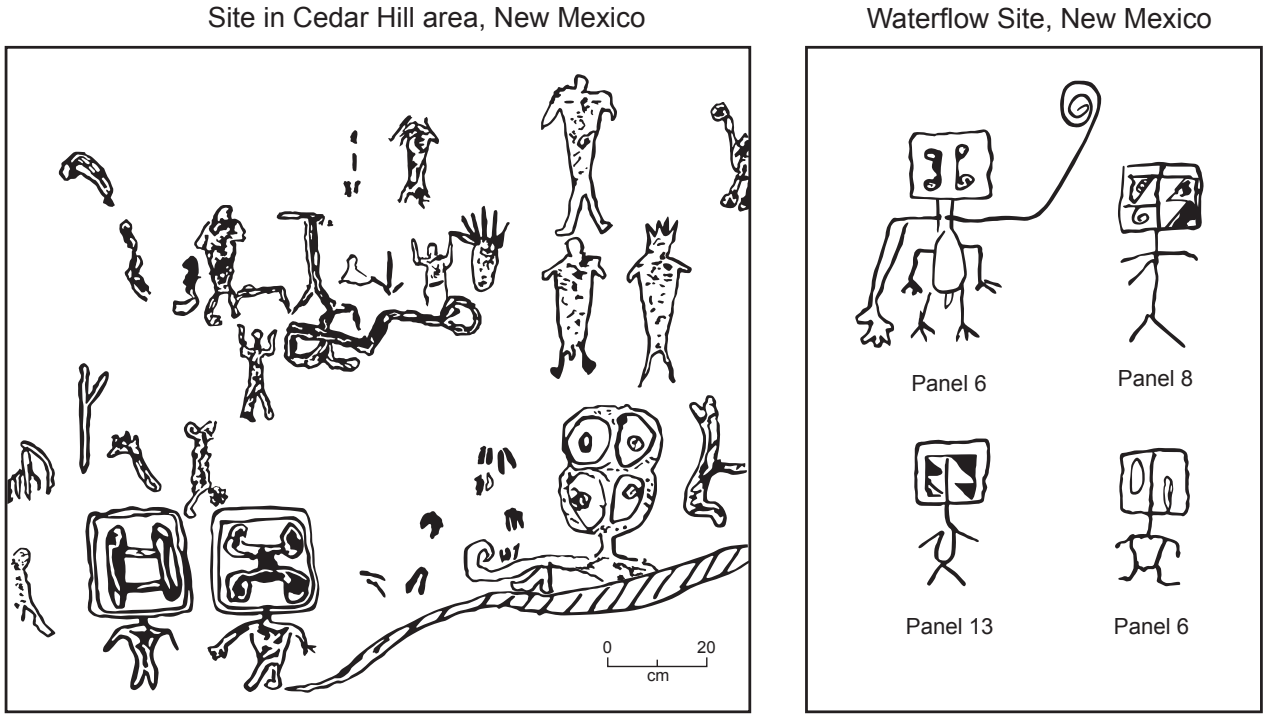

Figure 11.7. Square-headed anthropomorphic figures from Sites LA 79511 (northeastern New Mexico, ca. A.D. 900) and from specific rock art panels at LA 8970 (northeastern New Mexico, ca. 900–1000).

histories, and resource claims of the groups that comprised these rapidly growing settlements (cf. Fowles 2005 or Tuzin 2001). Competition over resources appears to have been channeled into ritual gatherings and tied to the achievements of communities as a single social body. Individual identities were subsumed by these larger identities and channeled into institutionalized political and ritual leadership positions. As a result, it became possible to think of communities, identities, and leadership positions as social categories as opposed to specific individuals enmeshed in specific relationships. The community itself became increasingly important and was now imagined in terms of totemically organized, intracommunity identities gathering at the "great house." In the case of the Waterflow Panel, the community appears to be watched over by mountain lions representing an organized leadership, possibly derived from earlier "hunt chiefs" but now organized to deal with defense of the community, the maintenance of internal order, and aggression against political opponents.

Changing Discourses about Early Pueblo Communities: Evidence from Kiowa-Tanoan Languages

Our treatment of the excavation and rock art evidence suggests that the fundamental shifts that made early Pueblo villages possible involved the formalization of social relations that had been negotiated among individuals into offices and institutions. In the final section of this paper, we suggest that historical linguistic data provide unique insight into the concepts that supported this transformation. At least nine different languages from four different families were spoken in Pueblo communities when they first encountered Europeans in the sixteenth century: A Uto-Aztecan language (Hopi), two languages that are not demonstrably related to any others (Zuni and Keres), and a number of related Tanoan languages (Piro, Tompiro, Southern Tiwa, Northern Tiwa, Towa, and Tewa) (Harrington 1909; Hale 1962, 1967). It has proved difficult to link the origins and development of these languages to the archaeological record, but the Kiowa-Tanoan language family (the family that includes the Tanoan languages and Kiowa, a language now spoken on the southern plains) is a bit of an exception for several reasons. First, oral histories (Harrington 1916; Ellis 1967; Ortman 2009: chap. 8) indicate that a number of groups who speak Tanoan languages today trace their ancestry back to the Mesa Verde region. Second, Ortman (2009:chaps. 6, 7) argues that the Kiowa-Tanoan homeland was in the northern Southwest, based on the present-day distribution of these languages vis-à-vis their internal relationships, the biogeography of reconstructed plant and animal terms, and reconstructed material culture terms that appear to describe the contents of Eastern Basketmaker II sites. Third, Ortman (2009: chap. 10) has made a strong case that the Tewa language in particular was spoken in the Mesa Verde region as recently as the A.D. 1200s by linking conceptual metaphors enshrined as semantic fossils in the Tewa language to symbolic expressions in Mesa Verde region material culture. These various lines of evidence suggest that Kiowa-Tanoan speech community history was connected to Mesa Verde region culture history in some way.

Ortman's studies of Kiowa-Tanoan languages further suggest that several steps in the diversification of these languages took place during the early Pueblo period. This is evidenced most strongly by patterns in reconstructed vocabulary for various subgroups of the family, which correlate surprisingly well with the early Pueblo archaeological record (see Ortman 2009: chap. 7). For example, Kiowa and the Tanoan languages share several agricultural terms as well as terms for tools and technologies employed during Basketmaker II times, yet lack common terms for 'pottery', 'turkey', 'bean', 'bow', 'quiver', 'flour corn', 'trough metate', 'pit structure', and other items that first appeared during Basketmaker III. This suggests that the dialect ancestral to Kiowa became distinct from the other Tanoan languages prior to A.D. 450. In addition, Proto-Tanoan reconstructions for 'road' and 'dance' appear to reflect the imagery of periodic group assemblies, as depicted in procession panels (Table 11.4).

The next major split led to the differentiation of Towa, the language of present-day Jemez Pueblo,

Table 11.4. Kiowa-Tanoan Reconstructions Related to Late Basketmaker and Early Pueblo Community Organization

Reconstruction	Taos (N. Tiwa)	Isleta (S. Tiwa)	San Juan (Tewa)	Jemez (Towa)	Kiowa
KT *tu- 'house'	tuła 'big-house'	túłá 'old house, pithouse, kiva'	te: 'house, hole, burrow'	tí: 'shelter, corral'	tó:~tò:- 'house, tipi'
PT *tukʰʷa 'pithouse'	tuła 'big-house'	túłá 'old house, pithouse, kiva'	te:whá 'house' (te: + whá 'home, roomblock')	tí:hæ̀: 'house' (tí: 'shelter, corral')	
TT *tu- 'kiva'	tuła 'big-house' tʰitane 'kiva'	túłá 'old house, pithouse, kiva'	te'i 'kiva'	fiô:wā 'kiva' (fió:- 'inside, room'; fió 'hole')	
PT *p'ą 'road, trail'	pįęna 'road'	p'ę 'road'	p'ô: (irregular)	p'ǫ́: 'path, road'	hǫ̀ɔ̀n 'road, way'
PT *kų 'dance'	kų-łito- 'ceremonial dance'	feuri	šadeh	kį́:	kún-gyà (kún- 'jump')
PT *pian- 'heart, middle'	píana 'heart, middle'	pia 'heart'	pín 'heart, middle'	pé: 'heart'	tǭēn 'heart'
TT *pian- 'heart, middle, center, plaza'	píanto 'plaza, center-middle ("heart-within")'	pianʷad 'center middle' nap'ahia 'place, town, plaza' p'ahiad 'plaza' (p'ahia 'well')	búpíngéh 'plaza' (bú'ú 'village, plaza' + pín + géh 'place')	pó:kų́a 'in the middle' pó:t'u 'plaza, middle, center' fió:pįtā 'plaza' fió:lá 'inside a circle or plaza'	guɔn-dąm 'dance-ground'
PTi *łowa 'ritual officer'	łowa'ána 'officer' (łowa'áne 'speech') p'i 'head' p'iwási 'boss' ("head-one-is") tʰi-p'iyana 'councilor' ("house head-of-house")	wiłáwide 'member of ritual society' p'i 'head' kąbehʷíride "chief-bow" (assistant to town chief) ch'umide 'chief, first-person' (ch'up 'first')	p'ón 'head' tų:yón 'chief' (tų: 'sound, word') con:in tribal officers	t'í 'head' fí: 'chief'	tʰaum 'head' tʰaum-dók'i "head-society leader"

Source: Ortman (2009). Forms in gray text are not cognate.

from the language ancestral to Tewa, Northern Tiwa, and Southern Tiwa. The fact that Tewa and Tiwa share terms for 'rooftop', 'cooking pot', 'olla', 'dipper', 'cradleboard', 'pick', and 'squash', whereas Towa does not, suggests that this split occurred before these items began to appear in the archaeological record, approximately A.D. 725. Additional reconstructions offer intriguing insight into the concepts of community and leadership held by Tewa-Tiwa speakers. For example, Proto-Tiwa-Tewa speakers extended the meanings of the word for 'heart' (the organ) to incorporate such concepts as 'middle', 'center of a circle', and 'plaza'. These data fit well with our archaeological understanding of the Basketmaker III period, when symbols such as the lobed circle drew upon bodily experiences and images and when large community gatherings occurred at dance circles or great kivas. Given that there was a dispersed residential settlement pattern with no more than four households in any given locale during this period, it is reasonable that the "middle" of the community would be a geographically central gathering place such as a dance circle that pulled in outlying households to the "heart" of the social "body "The addition of 'plaza' to this range of senses may also reflect the replacement of dance circles by plazas in early Pueblo villages of the A.D. 800s.

Ortman's data also show that the word for 'kiva' in Northern Tiwa, Southern Tiwa, and Tewa derived from an older, Proto-Tanoan word for 'pit house'. This is also not surprising. Our analysis of late Basketmaker III pit structures suggests that ritual activities did occur in pit structures during this period, but that there was no categorical association between pit structure size and ritual elaboration. In early Pueblo villages, however, oversized pit structures were formalized as a category of structure in which secret rituals that functioned at the community level took place. This shift in meaning suggests

a parallel shift in the metaphors of community, from an emphasis on geography and the body to an emphasis on social relations within households as a model for social relations among households in the community. This conceptualization appears to be reflected in the "great house" architecture of influential lineages, where the community ate as a single "household," in early pueblo villages.

Finally, Ortman's data suggest that the Tewa split from Proto-Tiwa, the language ancestral to the Northern and Southern Tiwa dialects, took place during the tenth century. The basis for this conclusion is the reconstruction of such Proto-Tiwa terms as 'gourd rattle', 'viga', 'adobe', 'turquoise', 'cotton', 'tortilla', and 'macaw', combined with the absence of cognates for all these terms in Tewa, and the fact that all of these items first appeared in the Pueblo archaeological record during the tenth century. In light of the dating of this split, it is intriguing that several terms related to community leadership in Northern Tiwa incorporate the Proto-Tewa-Tiwa term for 'head' (the body part), in striking parallel to the elaborated-square-headed anthropomorphic figures seen in tenth-century rock art. These etymological clues reinforce our interpretation, based on rock art, that community leadership came to be vested in individual 'head-men' during the early Pueblo period.

Our sense is that Tewa-Tiwa was spoken in at least some central Mesa Verde region village communities of the early Pueblo period, and that the Tewa versus Proto-Tiwa split was a result of the breakup of these villages. Although these communities fell apart by the early A.D. 900s, the metaphors that helped to organize them likely continued to influence the development of subsequent great house communities in the Chaco Basin. The center of the community had become—both metaphorically and literally—the house of community leaders. The great house thus became a material metonym for the social "house," ritual leaders became the "heads" of this "house," and this house came to be the location where community activities, modeled on traditional, household/family activities of the late Basketmaker period, were performed.

Conclusions

The various analyses presented in this chapter lead us to the following summary view of the social and cultural changes that took place in the central Mesa Verde region between A.D. 650 and 925. During the late Basketmaker period, dispersed lineage groups gathered periodically in geographically central locations that were apparently not owned or controlled by anyone in particular. The status of households was also negotiated primarily in terms of relative economic and biological success. In other words, community organization was a mirror image of actual social relations among households in geographically dispersed settlements. Ritual knowledge also appears to have been distinct from, but correlated with, household status in the economic and political realms. In contrast, during the period of early village formation, prestige and influence came to be associated with specific lineages in a more enduring way. These more highly ranked lineages continued building oversized pit structures in which to host private rituals, but also constructed U-shaped roomblocks to house the lineage, and plaza spaces in which to host community rituals and feasts. Thus, public ritual came to be performed in the same socially central locations as private ritual, instead of in geographically central but socially neutral locations.

The key shift in thinking that appears to have taken place during the early Pueblo I period was from an emphasis on the body and geography as the bases of community imaginings, to an emphasis on the social relations and activities embedded in household and family life. As a result, the community came to be conceptualized as a house, and identified with the actual house of the most powerful lineage heads in a community. When the community gathered in the plaza for a feast, or household heads entered the oversized pit structure to witness secret rituals, the community acted as an individual household, following traditional patterns that were established during the Basketmaker III period, when ancestral Pueblo societies experienced unprecedented biological success following a commitment to settled agricultural life and the

introduction of several key innovations that made this possible.

In this chapter, we have used multiple lines of evidence, including traditional archaeological data, rock art, and language to reconstruct some of the changes in community organization and conception that took place during the late Basketmaker and early Pueblo periods (A.D. 650– 950). We have focused on specific sites, rock art panels, and languages to show the potential of our approach, but we also recognize there is more variability in each of these records than it is possible to discuss here. For example, it is likely that additional languages were spoken in early Pueblo villages of the Mesa Verde region, and that early Pueblo peoples played with a wider range of tropes than we have evidence to support in their attempts to build sustainable village societies. Nevertheless, we hope we have at least shown that understanding the ways in which Pueblo societies of the American Southwest were invented and reinvented over time will likely require the types of analyses we have employed here. Our feeling is that, if we wish to make serious progress in addressing the most compelling questions about the human experience, analyses that involve multiple, logically independent lines of evidence will be essential. We hope others will answer this call.

NOTE

1. Early settlement in the eastern Mesa Verde followed a different trajectory. After several hundred years of abandonment, early Pueblo populations returned to the southern (New Mexico) portion of the eastern Mesa Verde during the seventh and early eighth centuries, with population especially concentrated in the southern La Plata drainage (Toll and Wilson 2009). In contrast, the northern (Colorado) portion of the eastern Mesa Verde was essentially uninhabited until the early eighth century (Potter and Chuipka 2007; Potter, Chuipka, and Fetterman, Chapter 4).

CHAPTER 12

Early Pueblo Villages in a Pioneer/ Colonial, Epi-Classic World

STEPHEN H. LEKSON

REGIONAL SYNTHESES HAVE A LONG HISTORY in the Southwest, going back to Bandelier, Kidder, and Hewett—lone scholars of the Heroic Age who walked, rode, or bounced their Model A's across the greater Southwest, and who then tried to pull it all together. Institutions took over that role in the early twentieth century, with the Laboratory of Anthropology and Arizona State Museum (among other institutions) updating atlases of sites with each new discovery. There was a return to the single scholar (or small group) strategy in the 1970s, for particular classes of highly visible, readily recognizable sites: ballcourts in the south (Wilcox and Sternberg 1983) and Chaco "outliers" in the north (Fowler and Stein 2001; LeBlanc 1989; Marshall et al. 1979; Powers et al. 1983; Wilcox 2004). In the last decade of the old millennium and now in the first of the new, the preferred strategy seems to be the consortium: a small, temporary working group of scholars, pooling or at least aggregating data from their personal research. Even now, new models for regional synthesis are emerging from the Coalescent Communities (Hill et al. 2004) and the Village Ecodynamics (Kohler et al. 2007) projects, both of which take full advantage of new GIS and database technologies.

I expect that consortium models will survive, because they are economical and effective. For example, a cycle of Anasazi/Ancestral Pueblo consortium projects developed around the old, creaky but still serviceable Pecos System: Pueblo I, II, III, and IV. In reverse chronological order, we have publications on Pueblo IV, Adams and Duff's (2004) *The Protohistoric Pueblo World, A.D. 1275–1600*; Pueblo III, Adler's (1996) *The Prehistoric Pueblo World, A.D. 1150–1350*; Pueblo II, Kantner's (2003) "Chaco World" issue of *Kiva*; and Pueblo I, the present volume.[1] These efforts were not planned as a series (although Pueblo III and IV were published in identical formats by the University of Arizona Press). They were united by two limits and a strategy: (1) a single Pecos stage, broadly defined; (2) big sites—highly visible, thus reasonably well known, and presumably important; and (2) a consortium strategy, dividing the region into a half-dozen or more districts, each the responsibility of individual scholars.

Pueblo III came first, and perhaps set the agenda: gathering data efficiently at minimum cost, by convening a small working conference. With Bill Lipe, I organized the 1990 Pueblo III working conference at Crow Canyon.[2] The goal was to construct a reasonably complete atlas and database of all pueblos larger than 50 rooms that dated from A.D. 1150 to

1350. We divided the area of interest into a dozen subareas tailored to archaeologists who knew each of those areas like the back of the proverbial hand. We set out fairly specific ground rules and then brought them all to Crow Canyon. They were a congenial group ("plays well with others" was a key selection criterion) and, with the assistance of Crow Canyon's famous wining-and-dining, we gathered data and argued interpretations. That was the easy part. I got busy with other duties, and the far more difficult task of assembling the database and book passed to Michael Adler, who did a great job (Adler 1996). Pueblo III provided a good model for future projects; the only downside was that many good scholars were not invited and, of course, their feelings were hurt; but I explained that the meeting had to be limited to the smallest possible number of people to get the work done efficiently. This is true.

Pueblo III was also a good place to start: Pueblo III sites are normally easy to see and therefore they are relatively well known. Over much of the Anasazi/Ancestral Pueblo region, Pueblo III was the final occupation, so there (usually) is little subsequent deposition over the site of interest, which means Pueblo III sites are also easy to map. And by setting the bar at about 50 rooms, we could be reasonably sure that that we got 'em all, so to speak. Not really "all," but almost all. Earlier time periods are more difficult. For Pueblo II, great houses stand out like a sore thumb (one of the technical criteria for their identification); but their associated communities (which together constitute the "site") are harder to see and harder to map. And for Pueblo I, the focus of this volume, it's difficult indeed. Accurate mapping of a Pueblo I site requires skilled practitioners and a lot of time in the field, and perhaps a soil auger. So I'm very impressed (and thankful) that the authors know as much as they do about Pueblo I: again, a matter of asking the right people, who know their own areas very well. This book will stand as the standard reference for Pueblo I for some time to come.

But it should not stand alone. In archaeology, context is everything. What was the context of Pueblo I? "Context," as I use the term here, means the historical and social setting of the site, region, or question of interest. What came before, and how was that historically related to Pueblo I? What was Pueblo I's contemporary world—what societies affected or could have affected the historical trajectory of Pueblo I? Answer: the explosive Colonial period of the Hohokam and the fall of Teotihuacan. The end of first great city of North America had repercussions in the Southwest, but Teotihuacan is beyond the scope of this chapter (see Lekson 2009). Let's limit ourselves (mainly) to Hohokam and southern Arizona.

When considering the emergence of towns in the northern Southwest, it's useful to remember that the northern Southwest was just that: the northern part of the Southwest. Villages, as it turns out, appeared much earlier in the southern Southwest. And if we back off even further, the Mesa Verde region becomes the extreme frontier, the outermost thinnest edge of greater Mesoamerica. Towns and cities were standard operating procedure in Mesoamerica for more than a millennium before the peoples of the northern Southwest gathered together in quiet hamlets and villages. That perspective may put the early Mesa Verde region's villages in a different light.

In the 1920s and 1930s, this region was considered the center and source of all that was good and interesting in the Southwest. The "San Juan Hypothesis" placed Pueblo origins somewhere around Mesa Verde, with a diffusion thereafter out from the putative heartland to the rest of the Southwest. The Four Corners–centered view no long holds in archaeology, but the Four Corners retains an unassailable place in the American imagination—our nation's view of itself. Mesa Verde is still our most famous archaeological site. And extraordinary amounts of research energy and funding continues to pour into the region, perhaps the most intensely investigated archaeological district in the New World.

But . . . almost everything interesting in the ancient Southwest happened first not in the northern Southwest, not north of the San Juan River, not in the Four Corners area, but instead in the deserts of southern Arizona, southern New Mexico, Chihuahua, and Sonora (Lekson 2009).

The deserts led, and the Plateau followed. That was certainly true in the business of village-making. There were large, permanent villages in northern Chihuahua (Hard and Roney 1998) and southeastern Arizona by 1200 B.C. (Huckell 2005; see also Mabry 2005) while Four Corners peoples were still safely ensconced in the Late Archaic. So when the peoples of the northern Southwest decided, sometime around A.D. 500, to live together in villages, they did not have to invent a new form of settlement. Desert ideas could be brought up to the northern Southwest.

When villages and towns appear around the Four Corners, in Basketmaker III, villages and towns had been occupied, abandoned, and rebuilt in the deserts for many centuries. That fact is key: villages and towns did not, could not, evolve or develop pristinely in the northern Southwest; they were historically preceded by, and almost certainly historically contingent upon, larger, earlier permanent settlements to the south.

Given what we know about interconnections within the Southwest and within the larger continent (e.g., Lekson 2009), it's safe to assume that the northern Southwest knew the southern Southwest. Local, parthenogenic explanations of village formation in the north that ignore that larger historical context are, I fear, suspect. I'd go further: local scenarios divorced from that larger context constitute extraordinary claims; and, therefore, it should require extraordinary proof to demonstrate that village formation in the northern Southwest was unaffected by historical precedence of villages in the southern Southwest.

What was the historical context, the "run-up" to Pueblo I and the Colonial period? Large, permanent villages may have begun in the southern deserts as early as 1200 B.C. at Chihuahua sites such as Cerro Juanaqueña (Hard and Roney 1998, 2005). There follows a "dark age"—at least for me: what connects those remarkable earliest villages and later (but still early) villages to later Hohokam towns? Happily, that question need not concern us here (although it is a fundamental research issue for Southwestern archaeology). What matters is, by the B.C.–A.D. boundary, sizable settlements were in place along most of the small streams of southeastern Arizona. During the Pioneer period (approximately A.D. 400–750), those towns got big enough to invite or require political leadership (Wallace and Lindeman 2003).

While the Pioneer period Hohokam were building big towns and their elite families were building power, the Pueblo peoples of the Four Corners were building hamlets of one or two houses. Basketmaker III settlements were small: most comprised only one or two households (that is, one or two pit structures), sometimes surrounded by a fence or stockade. A really big Basketmaker site—a cause for archaeological jubilation—has a dozen structures (see Altschul and Huber 2000: table 7.1; Gilpin and Benallie 2000: table 8.1).

Against that unprepossessing background, two Basketmaker III sites at Chaco Canyon—Shabik'eshchee and the prosaically named 29SJ423—stand out as phenomenally large (contra Wills and Windes 1989; see Lekson 2009:67–68). Shabik'eshchee, at the upper end of the canyon, had at least 70 structures, and 29SJ423, at the lower end of the canyon, was probably even larger. Shabik'eshchee's 70-plus pit houses, many with elaborate exterior storage pits, formed a village comparable in area to a medium-sized Hohokam town. No other Basketmaker III sites (of which I am aware) came close to that size. Shabik'eshchee and 29SJ423 were Basketmaker III metropolises, phenomenal in their times. People remembered whatever happened at Chaco Canyon during Basketmaker III. The Chaco towns (successful or not) established Chaco as an extraordinary place within the northern Southwest.

Hohokam towns were even more impressive in the seventh, eighth, and ninth centuries. Indeed, it was in the late seventh or early eighth century that "Hohokam" as a constellation of remarkable cultural practices—ball courts, red-on-buff pottery, elaborate burial rituals—became a genuine phenomenon, exploding out from the Phoenix Basin in the aptly named Colonial period and lapping up against the foot of the Colorado Plateau. In fact, Hohokam edged up and over the plateau at least as far as Flagstaff. Hohokam towns grew to a thousand or

more people (Craig 2000, 2001), fed by the (almost) unprecedented canal systems of the lower Salt and middle Gila rivers and a thriving market economy (Abbot 2000:193). Demographically and geographically, the late Colonial and early Sedentary periods were probably Hohokam's peak (Lekson 2009:83ff.).

There's no question "Hohokam" reached Flagstaff and the western Basketmaker: it's really easy to see. I cannot doubt (and you should not doubt) that eastern Basketmaker people were well aware of Hohokam—even if they didn't adopt ball courts and all the material clutter that makes archaeology easy.

Hohokam must have been a wonderment to peoples of the northern Southwest. To the Anasazi/Ancestral Pueblo peoples of the east, perhaps it was a threat or a perceived threat. The term "colonial" was meant by Harold Gladwin and Emil Haury (the two major figures in early Hohokam studies) to be both geographic and dramatic. The Colonial period package appeared suddenly in the Phoenix Basin and thereafter spread throughout most of the Hohokam region. Gladwin and company thought, reasonably enough, that meant colonization, out from Phoenix and into the peripheries of southern Arizona and up against and over the plateau (at least in the west).

Since that original interpretation, there have been endless arguments over colonization versus diffusion versus interactive dialogue. But I think there is agreement among Hohokam archaeologists that the constellation of roles and institutions, emblematic artifacts, and monument structures that traveled together as "Hohokam" formed first in the Phoenix Basin and then radiated out—by colony, emulation, adoption, co-residence, or sheer bloody brilliance—up the river valleys of desert Arizona. Thinned versions of Hohokam reached even farther, well into the Mimbres Mogollon region (Lekson 2006; for a contrary view, see Hegmon and Nelson 2007). Stronger currents swept up onto the plateau around Flagstaff. It beggars belief that that the Colonial "explosion" was not known by Pueblo peoples throughout the Four Corners, in the northern Southwest. Surely, the plateau knew the deserts. Colonial Hohokam formed the social and historical context required for understanding—socially and historically—the events and developments in the Pueblo heartland, the Four Corners, the Mesa Verde region, and the northern Southwest… for example, the formation of villages.

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My thanks to the conference organizers for the invitation to attend, and to the conference presenters for the opportunity to learn! Exciting stuff! Portions of this essay appeared in slightly different form in *A History of the Ancient Southwes*t (SAR Press 2009).

NOTES

1. I'm not entirely sure, but I think I'm the only person involved with all four of these projects: as organizer with Pueblo II (indirectly) and III (directly); as a contributor to Pueblo III and IV (with Michael Bletzer and Art MacWilliams); and now as a commentator to Pueblo I! I was at the Pueblo I, II, and III working conferences. Pueblo IV came out of an SAA session; I was in the audience (!) and later asked to contribute a chapter. I'm not a particularly sociable person, but I seem to show up at most of these rodeos. (A clown cowering in his barrel, banged about by Brahma bulls. . . .)

2. The idea for the Pueblo III conference came out of a Crow Canyon "research retreat" at the Recapture Lodge in Bluff, Utah on January 4–5, 1989, to which I was invited as an "outside" scholar. The discussion kept returning to local, mostly environmental reasons for aggregations into huge pueblos in Pueblo III; I pointed out that the same thing at the same time happened at Zuni, so at least some of the causes were probably not local. One thing led to another, and a year later we had our conference. The concepts and organization were mine, mostly, with important input from Bill Lipe and others at Crow Canyon. Lipe and I wrote the proposal, and we submitted a proposal to Wenner-Gren under Lipe's name because I was considering going to Wenner-Gren that year for another meeting I was planning: Chiricahua Apache Archaeology and Ethnohistory conference (which met at Truth or Consequences, New Mexico, on November 9–11, 1990).

CHAPTER 13

The Early Pueblo Period:

A Synthesis of Sorts

JOHN KANTNER

WITH FEW EXCEPTIONS, TWENTIETH-century archaeological inquiry on the early Pueblo period was framed as an inquiry into either the "pit house to pueblo transition" or the "forager to farmer transition." These were indeed important issues to address, but they tended to emphasize causal relationships between economic and environmental factors and concerned themselves less with the social, political, and ideological changes that must have occurred at the same time—and which, no doubt, were equally, if not more, important to the people living in the northern Southwest between the seventh and ninth centuries A.D. Fortunately, this oversight has changed in the past decade, heralded by edited books such as Reed (ed. 2000) and synthetic chapters such as Wilshusen (1999a) and Wilshusen and Van Dyke (2006). The current volume builds upon this expanded focus within early Pueblo period research, and is to my knowledge the first to do so since Reed's edited volume (2000), synthesizing and exploring new data collected over the past decade of research in the Puebloan Southwest.

Having delved into the details of each chapter and explored a topic about which, as a purported Chaco specialist, I knew comparatively little before I started, what follows is what I think I now know about the early Pueblo period. Originally, I planned to present a synthesis according to the four fundamental issues presented in the opening chapter: population growth and migration, the materialization of early villages, cultural diversity in regions and settlements, and relations of social power. The fact that these four issues are so interwoven, however, soon convinced me that a classic chronological synthesis was the best way to capture what was happening in the centuries from approximately A.D. 600 to 900. Integrated into the synthesis, then, is commentary on these larger issues of relevance to the early Pueblo period.

A.D. 600–725: The Neolithic Demographic Transition

Several important changes take place in the northern Southwest over the six to seven generations centered on the seventh century. The transition to an economy focused on domesticated cultigens is perhaps the most central of these. While maize had become widespread by A.D. 300, especially in some areas (e.g., Matson and Chisholm 1991, 2007) , the earlier pop and flint varieties required considerably more energy to grind (Potter and Ortman 2004). The introduction of Harinosa de Ocho flour corn arguably made the storage of large

amounts of food that much more cost-effective since it required less work to grind. K. R. Adams (1994) suggests that this variety was introduced by A.D. 700, if not earlier, and indeed the evidence shows increasing attention to food storage and security after A.D. 650, accompanied by greater variety and quantities of ground stone. However, it seems unclear how rapidly Harinosa de Ocho was adopted and how long earlier pop and flint varieties continued to represent a relatively high proportion of the maize grown in the Mesa Verde area. The relationship between new cultigens and the other social and economic changes in the seventh century seems to merit further attention, insofar as the former is invoked as an explanation for the latter.

One of the most remarkable changes after A.D. 600 is the rapid population growth experienced in several of the regions discussed in this book. This is especially the case in central Mesa Verde and southeastern Utah, where the growth is characterized as "explosive," regardless of how population sizes are estimated (Allison et al., Chapter 3; Wilshusen et al., Chapter 2). Explanations for this include some combination of higher fertility, lower mortality, and immigration. Direct support for extensive immigration into these northern areas, however, appears to be scant, especially since none of the adjoining regions—eastern Mesa Verde, Chaco Basin, or Little Colorado—show evidence of depopulation. Distributions of ceramic and textile stylistic markers also do not appear to markedly change for the northern regions during the seventh century (e.g., Webster, Chapter 9), while Ezzo's (2010) strontium isotope study for Animas–La Plata's slightly later eighth-century skeletal remains suggests that most people had lived their whole lives in the region.

Kohler and his colleagues (2008) have recently argued that archaeologists tend to underappreciate the radical impacts of the so-called Neolithic Demographic Transition (NDT). Better understood in other parts of the world, the NDT occurred in populations as they became more sedentary and more reliant on domesticates. The effects of these economic changes included decreased birth spacing and greater survivorship during childhood, making it possible for net reproductive rates to exceed 1.25 percent per year—effectively allowing populations to double every 40–50 years, rather than in the 200 years expected in more stable demographic contexts. Another significant effect of the NDT could be increased potential for violent conflict. As described by P. L. Walker (2001), cross-cultural research shows that populations dominated by young people—and especially young men—correlate with increased violence, arguably as these men compete for economic, reproductive, and political resources (see also Kohler et al. 2009). Indeed, the appearance of stockaded households during the seventh century may be evidence of increasing conflict.

According to Kohler and his colleagues (2008), the NDT affected northern regions by the early A.D. 700s, and likely earlier, leading to rapid population growth without the need for immigration. If true, an assessment of those areas that did not experience rapid growth in the seventh century could prove informative. The very small sixth-century population of the eastern Mesa Verde region, for example, sees relatively little growth while its neighbors to the west are experiencing a demographic explosion. Perhaps environmental factors restricted the effective introduction of new cultigens into this high-elevation area, delaying the growth expected during an NDT. Other regions considered in this book, such as the Chaco Basin and Little Colorado, also do not show rapid growth, but they have seen less archaeological investigation and the demographic changes in those areas therefore are less well understood. Interestingly, populations in the northern Rio Grande appear to grow modestly, but ceramic evidence there suggests immigration from areas to the south and southwest that brought in Mogollon and Cibolan influences and a mixed economy as people settled into the Rio Grande drainage below La Bajada (Lakatos and Wilson, Chapter 7).

In addition to demographic changes, households and communities undergo significant transitions during the seventh century. More multi-household hamlets, for example, appear in virtually all of the ancestral Pueblo regions. These hamlets—also referred to in the chapters as "settlements"—include no more than six households. Wilshusen and his

colleagues (Chapter 2) suggest that households are reorganizing to support more people for longer and to provide security for growing food surpluses, as evidenced by the construction of aboveground storage rooms and cists close to the residential pit structures. However, single-household hamlets still account for the majority of sites in all of the regions—exceeding 60 percent of all sites in the case of the central Mesa Verde area. The relationship between smaller and larger hamlets deserves greater attention, especially since many of the explanations for the appearance of larger hamlets imply unequal yet testable economic and/or social relationships among hamlet sizes. The proffered hypotheses (Wilshusen et al., Chapter 2) that the emergence of polygamy, growing demands for storage security, and/or increased labor needs for intensive cultivation led to larger hamlets suggest different kinds of relationships among different-sized hamlets, and between them and their immediate environment. It may be, for example, that disparities in the productive potential of surrounding soils created emerging inequities that persevered into later centuries (e.g., Kantner 1996). The impact of climatic changes might also be assessed; for example, the impact of a generation-long drop in precipitation between A.D. 685 and 710 might correlate with changes in hamlet composition.

The idea of "community" seems to take a more concrete form during the seventh century. While dense clusters of numerous pit structures in places such as Shabik'eschee suggest a level of place identity and political organization above that of an extended-family hamlet (Wills and Windes 1989), these nascent villages are rare during this period. However, in most ancestral Pueblo regions, groups of hamlets loosely aggregating around great kivas or dance plazas appear to represent dispersed communities. In the Little Colorado region, unroofed great kivas suggest public access to ritual spaces, but they also are sometimes associated with permanent households with storage facilities large enough to hold suprahousehold quantities of surpluses (Schachner, Gilpin, and Peeples, Chapter 6). Unfortunately, because so few have been excavated, the exact identification and nature of these arguably communal structures is unclear, as is their relationship with evolving forms of leadership. In general, however, great kivas are roofed, large, and relatively featureless, while excavated examples of oversized pit structures, which are much smaller than great kivas, reveal numerous features, many, if not most, of which seem to be ritual in function. Dance plazas are not truly subterranean and are large and featureless. But it is not clear that these definitions are universally applied in all regions, especially with so few excavated, and exceptions such as the unroofed great kiva are not uncommon.

An intriguing topic is why communities began to aggregate around communal architecture at all. Building upon the work of Robins and Hays-Gilpin (2000), Wilshusen, Ortman, and Phillips (Chapter 11) suggest that ritual before A.D. 500 centered on individual shamanistic activities in which women played a central role, but that ritual later shifted toward periodic public gatherings focused on ceremonial architecture with men in leadership positions (but see Hegmon et al. 2000; Schaafsma and Young 2007:252–254). The suggestion that men asserted such ritual authority because a shift to matrilocal postmarital residence put them in a precarious political position—presumably because they were now living among nonlineal relatives—is compelling, but it begs the question as to why matrilocal postmarital residence was established in the first place. Arguments that such a system allowed land to be better retained from generation to generation through lineal inheritance, as suggested by Hays-Gilpin (1996) and explored in Kantner (2004), seem to contradict the ethnographic evidence presented by Wilshusen and Perry (Chapter 10) that shows men as having primary responsibility for preparing and planting the fields and harvesting the crops; could a patrilocal system not have achieved the same goal of retaining land rights? Similarly, Wilshusen, Ortman, and Phillips' (Chapter 11) argument that leadership in the seventh century was partially based in ethnic factionalism is challenged by the evidence against much migration during this early period. The ideas presented throughout this book are exciting, but there are still a few missing pieces to this puzzle before the seventh-century

sociocultural landscape can be fully articulated. In any case, archaeological evidence such as the gendered differences in mortuary accompaniments at the Bluff Basketmaker III cemetery (Allison et al., Chapter 3) demonstrate that by the eighth century, inequities in status favoring particular individuals, and especially particular men, were becoming well established—at least in some locales in the Mesa Verde region.

A.D. 725–825: THE FIRST "VILLAGES"?

Migration and aggregation are the core processes that appear to drive sociocultural changes during the eight century. Some areas, such as southeastern Utah, seem to experience a temporary depopulation during the early A.D. 700s, but it is not always clear how far and to where people migrate. The archaeological records of other regions, including the Chaco Basin, simply do not have enough fine-grained resolution to reconstruct details of population movements. But in the central and eastern Mesa Verde area, populations grow rapidly. Part of this may be attributable to the continuing effects of the NDT, especially in central Mesa Verde, but both areas also are receiving substantial numbers of immigrants—perhaps with people from the west pushing into the central Mesa Verde region (Allison et al., Chapter 3) and people from the south coming into the eastern Mesa Verde area, possibly from the Largo-Gallina area. Evidence from the Little Colorado also suggests growth and migration toward the east and northeast (Schachner, Gilpin, and Peeples, Chapter 6). In effect, what is now southwestern Colorado is being squeezed in from all directions.

As migrants enter the northern regions, they seemingly force disparate peoples together. Many of the contributors to this volume invoke the idea of different ethnic groups moving into the same landscapes (e.g., Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2), with Wilshusen and colleagues (Chapter 2) suggesting that as many as five distinct groups occupied the Mesa Verde landscape at the same time. Ethnicity, of course, is difficult to identify archaeologically (Jones 1997), and we probably should be precise by what we mean when we use this term. While there are substantial differences in ceramics, textiles, subsistence foci, cranial modification, and residential and village layout that belie a complex and rapidly evolving sociocultural landscape, the degree to which these can be correlated into packages of traits that might align with specific ethnic groups is unclear (cf. Wills 2009). Chuipka's (2009a) important analysis of architectural, ceramic, and settlement pattern traits does suggest a meaningful difference between eastern Mesa Verde and areas to the west, and this aligns with Webster's textile study (Chapter 9), but what that meaning might be is not clear. The degree of covariance among these traits seems relatively low, and it may be premature to suggest that ethnic identities are being expressed. The comparative absence of evidence for violence or clear group inequities—for example, stockades become more scarce—also seems inconsistent with an influx of new ethnic groups. Rather, we may be seeing clinally and differentially distributed cultural traits becoming mixed as small groups moved around the landscape.

Many of the chapters in this book highlight the degree of aggregation that occurred during the eighth century, which in the Mesa Verde area is most clearly represented by the appearance of multihousehold surface pueblos (Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2). The central question that often arises from this new village form is why people would give up their relative autonomy to live right next to one another. Was it the threat of warfare? The need to protect resources? Or some increased opportunities or benefits from living together? The presumed loss of autonomy and/or enhanced protection from this new arrangement, however, is usually asserted rather than demonstrated, as is the obverse—that households in dispersed communities enjoyed greater autonomy but also greater potential risk. In other words, it is not entirely clear that the appearance of these early villages signified a significant change in the "social contract" that guided eighth-century life in ancestral Pueblo societies. The fact that most households in

villages lasted no more than one or two generations, and that most people in the region continued to live in small hamlets outside of the aggregated villages, challenge notions of radical sociocultural change during this period. Instead, continuing migration and mobility among small groups of people may be creating a tremendous and diverse archaeological record that defies our attempts to identify patterns.

In fact, the chapters that consider regions outside of Mesa Verde confirm a level of pan-Southwestern mobility and migration that seems to contradict the evidence of increasing investment in architecture and changes in other material culture suggestive of shrinking exploitation territories (e.g., Torres 2000). In the Chaco Basin, Windes and Van Dyke (Chapter 5) point to sites in Fajada Gap with evidence of immigration from the north, while the South Fork Pueblo I community includes ceramics and cherts indicating a southern connection. In the Little Colorado region, Schachner and his colleagues (Chapter 6) argue that many large sites represent palimpsests of repeated seasonal occupations, such as at Cottonwood Seep, while the variety of white ware styles similarly suggests high levels of mobility, as does the spread of some textile forms. Along the northern Rio Grande, Lakatos and Wilson (Chapter 7) note that the small size of storage facilities and the scarcity of households occupied for more than one or two generations demonstrate a similarly high degree of residential mobility. Even southeastern Utah, seemingly depopulated early in the eighth century, at the end of the A.D. 700s sees the influx of immigrants bearing Mogollon-influenced Abajo red wares from the south and west, while other people may have been moving back in from the east—possibly the descendants of people who had migrated out of eastern Utah into the Mesa Verde region only one generation earlier.

Despite—or perhaps because of—the elusive nature of eighth-century lifeways, particularly large and well-known settlements stand out from the rest of the archaeological record. Blue Mesa and Ridges Basin in the eastern Mesa Verde region are especially intriguing. Blue Mesa, a tightly aggregated community of 74 pit structures but no known public architecture, provides a fascinating contrast with Ridges Basin, with its loose aggregation of as many as 100 single-family households seemingly focused on the ceremonial infrastructure of Sacred Ridge (Potter, Chuipka, and Fetterman, Chapter 4). Potter's (Chapter 8) study of faunal remains demonstrates that Ridges Basin has an unusually high frequency of turkey bones and shell, as well as more canine, carnivore, and wild bird remains, almost all as ritual deposits in burials or abandoned structures.

The central Sacred Ridge, with its four oversized pit structures, palisaded ritual area, and possible tower, especially stands out, with greater quantities of large game and elevated bowl ratios suggestive of feasting activities (Potter, Chapter 8). Osteological analyses of remains from Sacred Ridge suggest that its occupants were genetically distinct from the surrounding Ridges Basin people—and they may have suffered from poorer nutrition than their neighbors (Potter, Chuipka, and Fetterman, Chapter 4). The degree to which differences between and among Blue Mesa and Ridges Basin can be attributed to ethnicity, immigration, or sociopolitical and economic differences is unclear, but Sacred Ridge may not be that unique—the South Fork Pueblo I community in the Chaco Basin, for example, includes a prominent complex of four households that are connected to a great kiva with a very early roadway and exhibit materials from farther south (Windes and Van Dyke, Chapter 5). Two of these buildings are masonry, unlike the rest of the village, and they were situated both to be visible and to view prominent landscape features in the distance (Windes 2004)—not unlike later great houses in Chaco Canyon.

Changes in public architecture during the eighth century are not entirely clear and generally mirror the lack of patterning that characterizes this period. In the central Mesa Verde region, great kivas became more common during the late A.D. 700s, a trend attributed to immigration from the south, but most of them soon fell into disuse. Oversized pit structures are identified in some areas, such as at Sacred Ridge in eastern Mesa Verde and in some of the large early villages of southeastern Utah. Public architecture in the northern Rio Grande has proven elusive—as described by Lakatos and Wilson (Chapter 7), even the largest pit structures in this

region exhibit domestic features—but modest-sized pit structures with hearth-ash pits, sipapus, and exotic materials may be the focal points for extended family ritual activities.

Similarly, changes in leadership cannot be readily identified for this period. Wilshusen, Ortman, and Phillips' (Chapter 11) excellent analysis of processional panels in the northern regions describes individuals who are clearly set apart with lobed circles, unique hairstyles, and other features that suggest status differences within particular groups. That the processions converge on communal architecture is important for interpreting these panels, but the great kivas or dance plazas in the depictions are not obviously associated with specific groups or individuals, a pattern consistent with the possibility that individuals within kinship groups, rather than lineages within communities, achieve and hold status during the eighth century. At Sacred Ridge, for example, wild bird and carnivore remains are interred with individuals rather than in oversized pit structures—a pattern that changes by the end of the next century (Potter, Chuipka, and Fetterman, Chapter 4). But with such seeds of factionalism persevering in early villages, perhaps representations such as seen in the Comb Ridge Procession Panel—and possibly reflected in changing symmetries in pottery decoration (Washburn et al. 2010)—were more wishful thinking than sociopolitical reality.

By the beginning decades of the A.D. 800s, evidence of violence appears in at least some parts of the northern Southwest. Sacred Ridge in the eastern Mesa Verde area is burned and abandoned not long after A.D. 803, and the remains of 35 individuals exhibiting extreme perimortem processing suggest that abandonment was not voluntary (Potter, Chuipka, and Fetterman, Chapter 4; Potter and Chuipka 2010). In southeastern Utah, defensive citadels are built on high topographic points, often without any nearby associated community. In contrast, currently no good evidence for eighth-century conflict has been identified in areas to the south—the Little Colorado, Chaco Basin, and northern Rio Grande regions. Whether this is due to sampling or preservation issues or is an accurate picture of comparative peacefulness is an important question yet to be answered.

A.D. 825–880: Trying to Make Villages Work

The middle decades of the ninth century start with apparent population redistribution across most of the regions discussed in this book. To the north, in southeastern Utah and eastern Mesa Verde, people gravitate to well-watered, middling elevations ideal for farming, such as south of the Abajo Mountains, into the Dolores, Mesa Verde, and Piedra areas, and around what is now Navajo Reservoir (Allison et al., Chapter 3; Potter, Chuipka, and Fetterman, Chapter 4; Wilshusen et al., Chapter 2). This pattern seems to be mirrored to the south; in the Little Colorado region, people move to large villages along the Defiance Plateau and farther up into the Zuni drainage (Schachner, Gilpin, and Peeples, Chapter 6), while at least some of the immigrants moving toward the Navajo Reservoir came from the Chaco Basin (Potter, Chuipka, and Fetterman, Chapter 4). In the northern Rio Grande region, people leave some of the side drainages and contracted toward the Rio Grande itself (Lakatos and Wilson, Chapter 7). The only region that did not experience significant depopulation was the central Mesa Verde, where up to 8,500 people are living by the late ninth century, with ceramic evidence suggesting immigration from both the west and the east (Wilshusen et al., Chapter 2). People leaving the Blue Mesa and Ridges Basin communities in the mid-800s, for example, may be the founders of villages in the Grass Mesa area (Potter, Chuipka, and Fetterman, Chapter 4).

It is tempting to view these changes as indicating a greater commitment to community-scale farming with an emphasis on overproduction for storage. Earlier settlements in many regions were situated to take advantage of riparian environments and resource-rich uplands as part of a mixed foraging-farming economy, with some people leaning more toward the mixed foraging side of the spectrum—e.g., the northern Rio Grande drainage—than others. In Sagehen Flats, the comparatively high

proportion of cottontails to jackrabbits in eighth-century households is evidence of this (Potter, Chapter 8). By the ninth century, in contrast, not only are people moving onto and clearing cultivable lands, they are dedicating even more of their households to storage, starting with above-ground partial-masonry or wattle-and-daub rooms such as those seen at the Dolores and South Fork sites, but by the end of the period focusing on masonry storage rooms (e.g., Windes and Van Dyke, Chapter 5). And people seem to increasingly become concerned with protecting their surpluses at a community scale, with an array of defensive features to protect the village rather than just the household, including the elevated "observation rooms" built in some southeastern Utah villages (Allison et al., Chapter 3). Potter (Chapter 8) also provides compelling evidence indicating that larger aggregated villages—in contrast with dispersed communities—enjoyed more success at large-game hunting, perhaps because of their ability to mobilize larger and better-organized hunting parties (but see below).

Wilshusen and Perry (Chapter 10) argue that a gendered division of labor develops more clearly through the A.D. 800s, a trend that is associated worldwide with horticultural economies (e.g., Crown 2000b). Flour maize varieties may be easier to grind, but they also promote the use of stored surpluses and thus the amount of time spent grinding corn for daily meals. The need to prepare dried maize, and the corresponding focus on wet foods, means that more pots need to be produced for each household on an annual basis. Perry's (2010) musculoskeletal study, increasing amounts of worn-out ground stone, and the evidence for increasing use of cradleboarding (Wilshusen and Perry, Chapter 10) support the contention that women and men are taking on not only more work, but also increasingly distinct roles in relation to childrearing, farming, hunting, pottery-making, and food preparation (Wills 2001). Nonetheless, Debra Martin (2000) concluded that overall health was fairly equitable between males and females.

Aggregated villages consisting of dozens of households and often public architecture seemingly dominate the landscape because of their scale and elaboration, but large numbers of people still occupy small hamlets of only a few households. In most regions, the number of people living outside of villages is imprecisely known, but if the relatively well-surveyed eastern Mesa Verde area is any indication, this could account for more than half of the population (Potter, Chuipka, and Fetterman, Chapter 4). This is an important pattern for many reasons, not the least of which is the fact that the poorer preservation and visibility of hamlets compared with villages probably means that the proportion of people living in aggregated communities is even less than the archaeological record indicates.

As reflected in the volume's chapters, the ninth-century villages that have received the most archaeological attention are Grass Mesa and McPhee, both of which are in the central Mesa Verde region. A number of published studies (e.g., Wilshusen and Ortman 1999; Windes 2004) point to how distinct these two villages are from each other, even though they are only a few kilometers apart on either side of the Dolores River. The differences are indeed remarkable: Grass Mesa Village consists of aligned, linear roomblocks composed of numerous rooms, while McPhee Village includes smaller roomblocks but also large, U-shaped buildings; Grass Mesa emerged around featureless great kivas that soon fell into disuse, while McPhee's U-shaped buildings embrace oversized pit structures rife with ritual features; twill-plaited sandals that were earlier found mostly in eastern Mesa Verde appear at Grass Mesa Village, while fancier twined sandals with a longer history in the central Mesa Verde region dominate the McPhee Village collection (Webster, Chapter 9). All of these differences are covarying closely enough to be convincing evidence for the emergence of at least two ethnic groups during the ninth century, at least for these northern regions.

Wilshusen, Ortman, and Phillips (Chapter 11) propose that ninth-century great kivas and oversized pit structures had distinct uses and particular relationships with sociopolitical authority. In addition to the relative paucity of ritual features characterizing great kivas, they tend to be associated with more

decorated pottery and to be more communally situated within the landscape—examples of great kivas that are unroofed and/or situated between rather than within separate villages are known in some regions. The spatial and temporal occurrence of great kivas is not easy to track, especially since most are unexcavated and their identification uncertain, but their use might correlate with periods of social instability, such as when villages are first established or during periods of increased immigration. In the central Mesa Verde region, for example, great kivas appear to be more common among the loosely aggregated clusters of households (Wilshusen et al., Chapter 2). In contrast, the smaller size and more restricted access characterizing oversized pit structures is indicative of more exclusive ceremonial activity. And yet, these ceremonies are arguably more ostentatious than those that occurred at great kivas; as Potter (1997, Chapter 8) and others (e.g., Blinman 1989) note, red ware ceramics and unusual bird and mammal species are more common at oversized pit structures and the households with which they are associated, and high numbers of lagomorph remains are further suggestive of feasting activities.

Oversized pit structures and U-shaped roomblocks also support the argument that they are directly associated with ritual leaders (Schachner 2001). These households have more storage area, and their residents seem to enjoy preferential access to the large-game hunting that is apparently more successful in these villages (Wilshusen et al., Chapter 2). As Potter (Chapter 8) proposes, male ritual control and its likely association with hunting prowess may indicate competition among aspiring leaders that includes feasting, gift giving, and other such behaviors within ceremonial contexts. The mobilization of resources needed for this kind of competition is also often associated with increasing lineage identity, as aspiring leaders attempt to motivate kin—and non-kin—to contribute labor and food to the effort. This may be happening in villages with U-shaped roomblocks; Schachner (2010) has recently argued that residents of these buildings were engaging in economic activities that took advantage of their larger and better-integrated populations compared with their hamlet-residing neighbors. As Wilshusen and Perry (Chapter 10) suggest, the merging of male ritual prestige with female lineal power may further be expanding influence within and beyond community borders; evidence for this includes the paired male-female burials associated with the abandonment of McPhee Village.

But if this is happening in places like McPhee, what sociopolitical processes might be affecting Grass Mesa Village and others like it, not to mention the other half of the population not living in villages at all? As suspected newcomers to the immediate area (Potter, Chuipka, and Fetterman, Chapter 4), might Grass Mesa villagers be relegated to a subservient position in the sociopolitical landscape and the ambitions of its aspiring leaders suppressed? Insofar as the people of Grass Mesa are proposed to be the ancestors of later Mesa Verdean developments, these are important questions to consider. At the same time, ninth-century villages to the south are not as well known and are likely to present entirely different patterns begging interpretation.

AFTER A.D. 880: THE DAWN OF CHACO

Perhaps the most notable—or at least most often noted—changes at the end of the ninth and beginning of the tenth centuries are the depopulation of the central Mesa Verde region and the incipient development of Chaco Canyon. Over the past decade, the two events have been thought to be related (Schachner 2010; Van Dyke 2008; Wilshusen and Ortman 1999; Wilshusen and Van Dyke 2006; Windes 2004). A growing body of evidence suggests this indeed might be true, but some details of this purported relationship still remain to be worked out.

What is fairly clear is that the population of the central Mesa Verde region decreases by at least 60 percent, and perhaps as much as 88 percent, according to all available estimates (Wilshusen et al., Chapter 2). The details of this depopulation are complex. Almost all of the large villages, such as Grass Mesa and McPhee, are abandoned by the A.D. 920s, but places like the uplands around Dove Creek and the Upper Great Sage Plain actually

see some growth and sizable populations, most of whom are living in hamlets and small multi-roomblock villages. The eastern Mesa Verde region also experiences emigration, but it may be somewhat later, with people shifting around within the region before it is altogether vacated later in the tenth century (Potter, Chuipka, and Fetterman, Chapter 4). All this movement may have a number of causes, including a lengthy period of multi-year droughts between A.D. 880 and 910 (Schlanger and Wilshusen 1993), combined with an unstable sociopolitical structure that failed to hold communities together in the face of crisis.

Interestingly, the diverse ways in which villages are abandoned may align with the sociocultural differences noted earlier (Wilshusen et al., Chapter 2). In Grass Mesa Village, people leave in a seemingly orderly fashion, removing all of their possessions, including the heavier items, as if they were moving only a short distance away. Several years later, some group entered the vacated village and methodically destroyed the deteriorating pit structures—as if it took some time before the decision was made never to return to the village. This evidence suggests that the descendants of Grass Mesa stayed in the area, perhaps becoming the ancestors of later twelfth- and thirteenth-century Mesa Verdeans. McPhee Village, in contrast, was summarily closed down, with the interment of four paired male-female burials—perhaps the result of violent conflict or sacrifices—in prominent pit structures, and the fiery but arguably ceremonial destruction of the village (Wilshusen 1986a). Large items left behind suggest that the people of McPhee intended on migrating some distance away, or that they vacated the village under duress. Is it possible that the sociopolitical structure of Grass Mesa, which developed around a great kiva, handled the stresses of the late ninth century better than the context of competitive leadership that seems to characterize McPhee Village?

Where are the Mesa Verdeans going? Some likely head west into southeast Utah, where populations grow rapidly, perhaps as people whose grandparents once lived in the region return to their ancestral lands from places like Dolores (Allison et al., Chapter 3). Others are migrating to the southeast, perhaps into the Largo-Gallina and Rio Puerco, likely setting off a chain of subsequent population movements that are felt as far away as the northern Rio Grande, where Mesa Verdean and Cibolan ceramics suddenly appear at the same time that a dramatic expansion of population pushes into the far reaches of the Rio Grande, including above La Bajada and into the Santa Fe River drainage (Lakatos and Wilson, Chapter 7). At least some of these migrants are associated with social anxiety and outright conflict: the sites of Sambrito Village and Burnt Mesa around Navajo Reservoir show clear evidence of violence (Potter, Chuipka, and Fetterman, Chapter 4), while communities in southeast Utah tend to be built in defensible locations and communal great kivas become more common (Allison et al., Chapter 3). LeBlanc (1999) suggests that warfare was especially intense during the Late Pueblo I period, although his reliance on burned structures as evidence of violence may be conflating warfare with ceremonial closing of abandoned villages and hamlets.

The increasingly accepted suggestion that at least some of the Mesa Verde people moved into Chaco Canyon—and inspired the canyon's emergence as an influential religious center—is built on a few key arguments. First, while the greater Mesa Verde area was experiencing a series of multi-year droughts, as were also areas to the south and west of Chaco Canyon, Chaco itself enjoyed decent rainfall between A.D. 885 and 905, presumably making it an attractive destination (Windes and Van Dyke, Chapter 5). Second, a large component of the argument that Chaco Canyon was settled by northern immigrants is a revisionist view suggesting that the canyon was only sparsely occupied prior to late ninth-century immigration. The original survey of Chaco by Hayes (1981) that purported to identify numerous Pueblo I households has more recently been challenged (e.g., Windes and Van Dyke, Chapter 5); critics argue that the ceramic styles used to identify Pueblo I sites have subsequently been found to be much later in absolute time, after A.D. 875. Finally, as described by Windes and Van Dyke (Chapter 5), at least some late ninth-century settlements in Chaco Canyon seem to have

been founded by northern immigrants. East of the later great house of Pueblo Pintado, for example, 29Mc765 consists of a small community, with 11 percent of its pottery made with the crushed rock temper common to the north. And the early construction at Pueblo Bonito itself is argued to be reminiscent of U-shaped buildings such as those at McPhee Pueblo.

These arguments are certainly compelling, but a few issues still need to be addressed. First, the climatic downturn in the northern San Juan area and the corresponding improvement in the Chaco area, while correlated with each other, do not seem to correlate so well with the establishment of Pueblo Bonito. Originally a classic south- to southeast-facing, linear roomblock built no later than A.D. 862, and perhaps much earlier, it was only later around the turn of the tenth century that additional wings were added to make it U-shaped (Windes 2003). Perhaps the latter was inspired by new immigrants from McPhee-like villages to the north, but they moved into an already occupied landscape. Second, the shortcomings of Hayes's survey (1981) do not automatically mean that people were not already in Chaco Canyon during the ninth century. In fact, the presence of numerous scattered hamlets is widely recognized, as are aggregations such as in Fajada Gap and South Fork. Geomorphological work, as well as recent excavations in the canyon, further suggest that early farming households that were likely situated in the floodplain may not have survived the cycle of scouring and deposition that characterizes the Chaco Wash (Force et al. 2002). The violent episode at Roberts Small House is consistent with the proposal that northern immigrants encountered a sizable residential population in Chaco Canyon (Bustard 2008). Finally, while late settlements such as 29Mc765 exhibit at least a partial relationship to the north, others reflect origins or influences from elsewhere, such as the 10 masonry households that Windes and Van Dyke (Chapter 5) note were identified west of Pueblo Pintado and that manufactured ceramics reminiscent of areas to the south around Mount Taylor.

Another important point is that if northern populations from U-shaped villages entered the Chaco Basin, and especially Chaco Canyon, in such substantial numbers, what was the fate of the oversized pit structure as the focus of sociopolitical activity? We will never know for certain whether the earliest pit structures under later Pueblo Bonito construction contained the ritual features of northern oversized pit structures, but they do not appear elsewhere in late ninth- or tenth-century canyon communities. Instead, smaller kivas are found; and later, communally sized great kivas, which are more common in the southern Chaco Basin, become predominant, seemingly co-opted by the great house architecture. The emerging picture of Chaco's origins is that the canyon was occupied by people with ties toward the south who experienced an influx of immigrants from the north—similar to what Vivian proposed years ago (e.g., 1990). Certainly, as clearly presented in this volume, this process occurred many times and in many places in the northern Southwest. And, as in those earlier situations, the inequities and instabilities that typically emerge in these contexts can promote the kinds of sociopolitical elaboration that Chaco exhibits over the ensuing two centuries (Kantner 2010).

Concluding Thoughts

A number of issues emerged in this volume that merit additional consideration. The first of these is the formation of villages, especially the reasons why people aggregated together and the consequences that resulted from village formation. One pattern that seems clear throughout all of the regions considered in this volume is that roughly half of the population living in the early Pueblo period never moved into villages, preferring instead to remain in small hamlets that were often integrated around communal features such as great kivas or dance plazas. While warfare or the need to protect surpluses is often identified as a possible "push" that drove people into defensible villages, the fact that so many people chose not to do this suggests that these fears were not shared by all. One could argue that immigrants might have felt more compelled to band together in villages, and that might indeed be the case for places like Sacred Ridge,

Grass Mesa, and the South Fork Village. The loss of autonomy associated with village life might be easier to take if hostility toward newcomers—even if never actualized in violence—creates an externally oppressive environment.

Various incentives could have also promoted aggregation. Point resources such as springs often lead to aggregation, for example. But one of the most influential incentives might have been an enhanced distribution of workloads that the larger populations of villages provided. If, as discussed above, farmers were attempting to intensify production to create storable surpluses, the increasing labor needs likely not only promoted a more rigid division of labor, but also encouraged attempts to take advantage of economies of scale (Stanish 2010). Villagers, and especially women (e.g., Crown 2000b), could combine efforts more effectively than people living in isolated hamlets for tasks such as childrearing, preparing fields, protecting crops from predators, hunting large game, and so forth. Again, the costs of aggregation would have been seen as minimal compared with potential benefits.

Considering that village plans in the early Pueblo period were so variable, the strong possibility exists that both "pushes" and "pulls" were driving village formation, which might explain the variability that characterizes the earliest examples. This still does beg the question, however, as to why so many other people continued to live in dispersed hamlets, a topic that deserves greater attention. For some reason, they felt that there were no benefits for them to live in villages, or they adhered to a form of sociopolitical organization that provided the same benefits without the need for aggregation.

The record through the A.D. 700s and 800s suggests that experiments with village life were as often unsuccessful as they were successful. Why did villages fail so often and usually so quickly, with few of them lasting more than one or two generations? Perhaps a change in one of the factors that pushed or pulled them together in the first place removed the incentives of village life. Or perhaps new factors emerged that negatively impacted the benefits of living together. Violence against immigrants, for example, is one obvious cause of village disintegration, as is the collapse of local resources. Less severe but still detrimental environmental changes that significantly reduced crop yields might have removed the opportunity to take advantage of economies of scale, thus making village life less beneficial. The one factor, however, that is the hardest to identify, but perhaps the most important, is the failure of the village sociopolitical structure to keep people together. The archaeological record suggests a wide variety of organizational experiments—some with integrative great kivas, others with more exclusionary oversized pit structures—and several contributors to this volume proposed various changes in ritual leadership through the early Pueblo period. This instability seems to have contributed to the frequent dissolution and reformation of villages. It may be that, as Wilshusen, Ortman, and Phillips (Chapter 11) suggest, that the kind of group integration envisioned in the Procession Panel lacked the sustainability that the more centralized leadership depicted in the later Pueblo II Waterflow Panel provided. And it may be this difference that led to the significant changes represented by the ascendance of Chaco Canyon.

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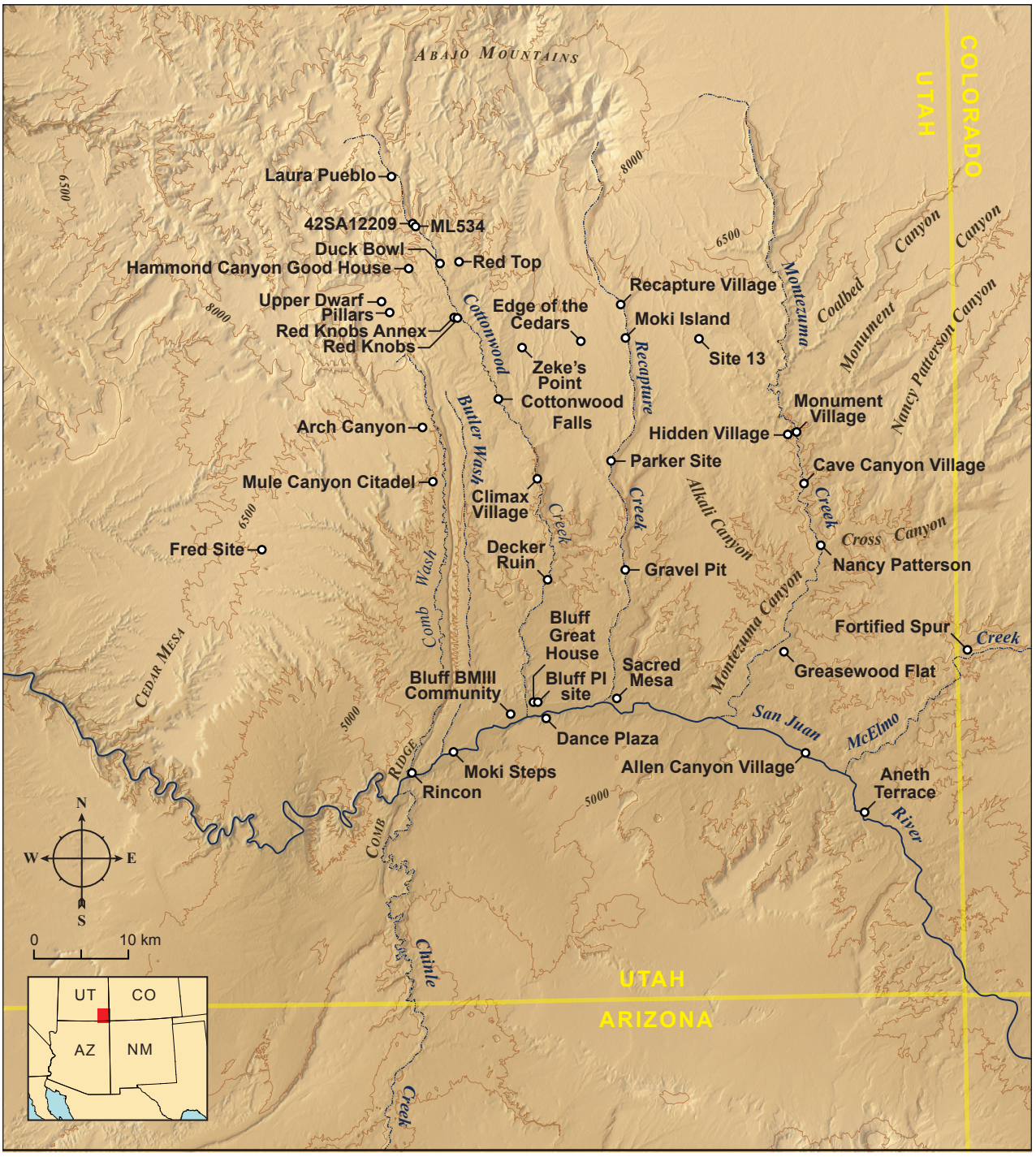


Figure 3.1. Map of southeastern Utah showing the locations of sites mentioned in the text and selected other Pueblo I sites.

Figure 3.6. Photographs showing the defensible settings of selected early Pueblo sites in southeastern Utah. Sites in the top row are early Pueblo I; the others are late Pueblo I–early Pueblo II: (a) Mule Canyon Citadel; (b) Fred Site; (c) Red Top; (d) Duck Bowl; (e) Nancy Patterson Village (courtesy Edge of the Cedars State Park Museum); (f) Gravel Pit Ruin; (g) Sacred Mesa; (h) aerial view of Sacred Mesa.

Figure 3.9. Photograph of the retaining wall at the Red Knobs Annex.

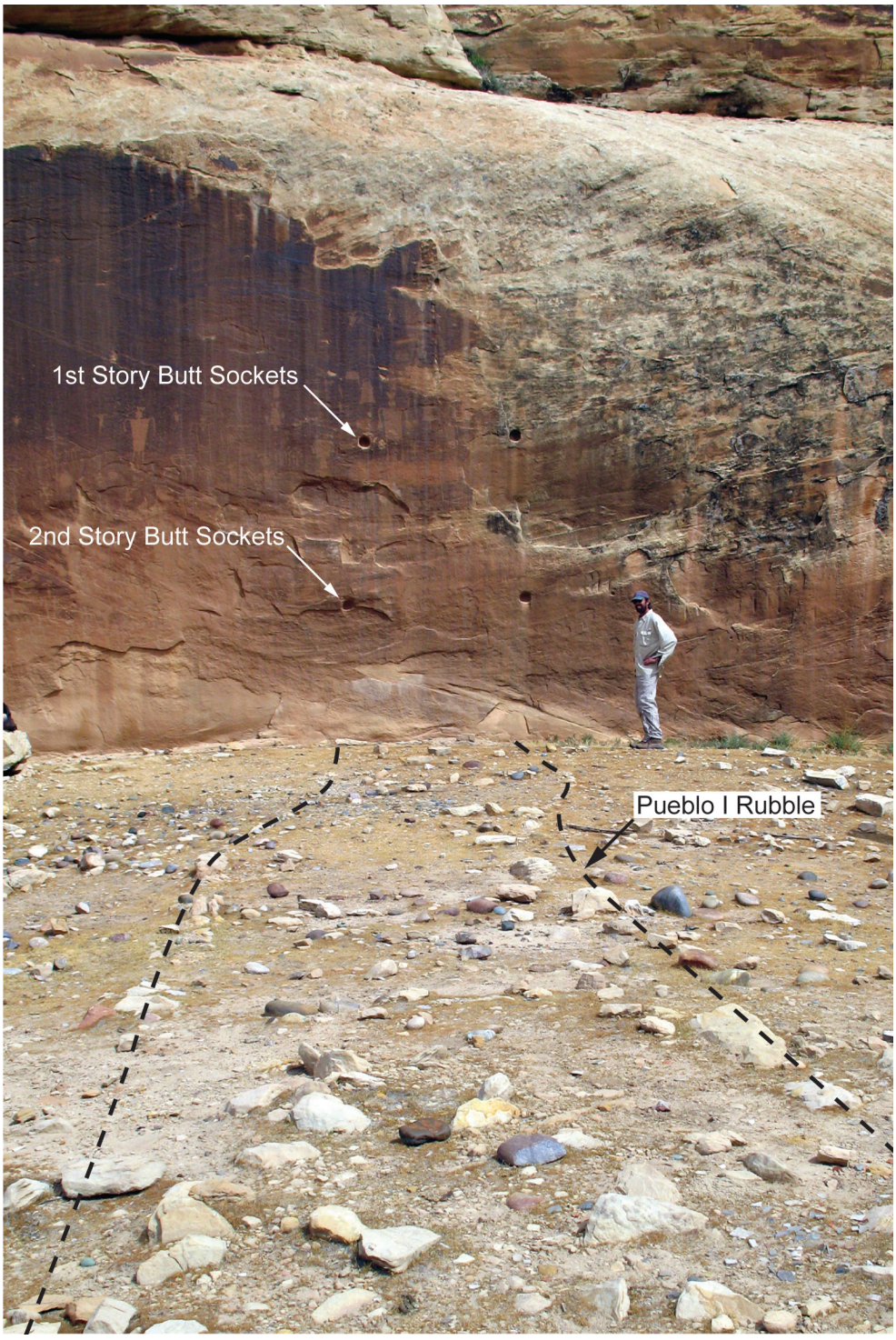
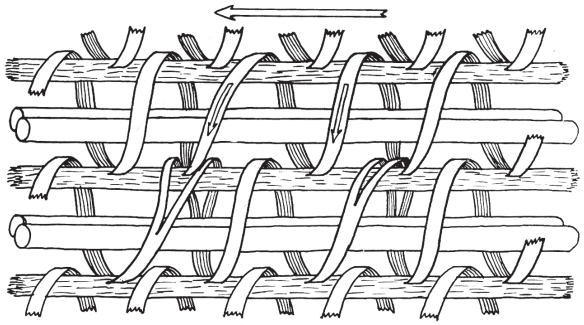


Figure 3.10. Photograph of the Moki Steps site showing Pueblo I rubble below a sandstone cliff face with two levels of butt sockets indicating two-story construction.



a

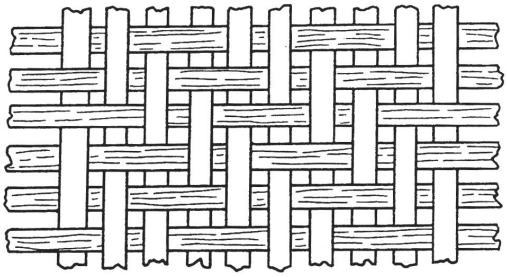
b

c

d

e

Figure 9.2. Coiled baskets with two-rod-and-bundle (or welt) bunched foundations. (a) Schematic drawing of two-rod-and-bundle bunched foundation with noninterlocking stitches (from Morris and Burgh 1941: fig. 3j); (b) decorated basket bowl, Tseahatso Cave, Canyon del Muerto (AMNH 29.1/1753; courtesy of the Division of Anthropology, American Museum of Natural History, Laurie Webster, photographer); (c) decorated carrying basket, Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5065) (© President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (d) undecorated basket bowl, Burial 3, Cave 1, Tsegi Canyon (PM 20-5-10/A5068) (© President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (e) carbonized basket base and wall, probably from a globular basket, on floor of Feature 1 pit structure, 5LP187, Ridges Basin, Animas Valley (146.42.1) (from Webster 2009: fig. 4.5b).



a

b

c

Figure 9.4. Plaited ring baskets. (a) Schematic drawing of 2/2 twill structure (adapted from Adovasio 1977: fig. 118); (b) plaited ring basket with concentric diamond design, Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5046; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (c) close-up of carbonized 2/2 twill-plaited ring basket on floor of Feature 1 pit structure, 5LP187, Ridges Basin, Animas Valley (146.34.1) (from Webster 2009: fig. 4.6b).

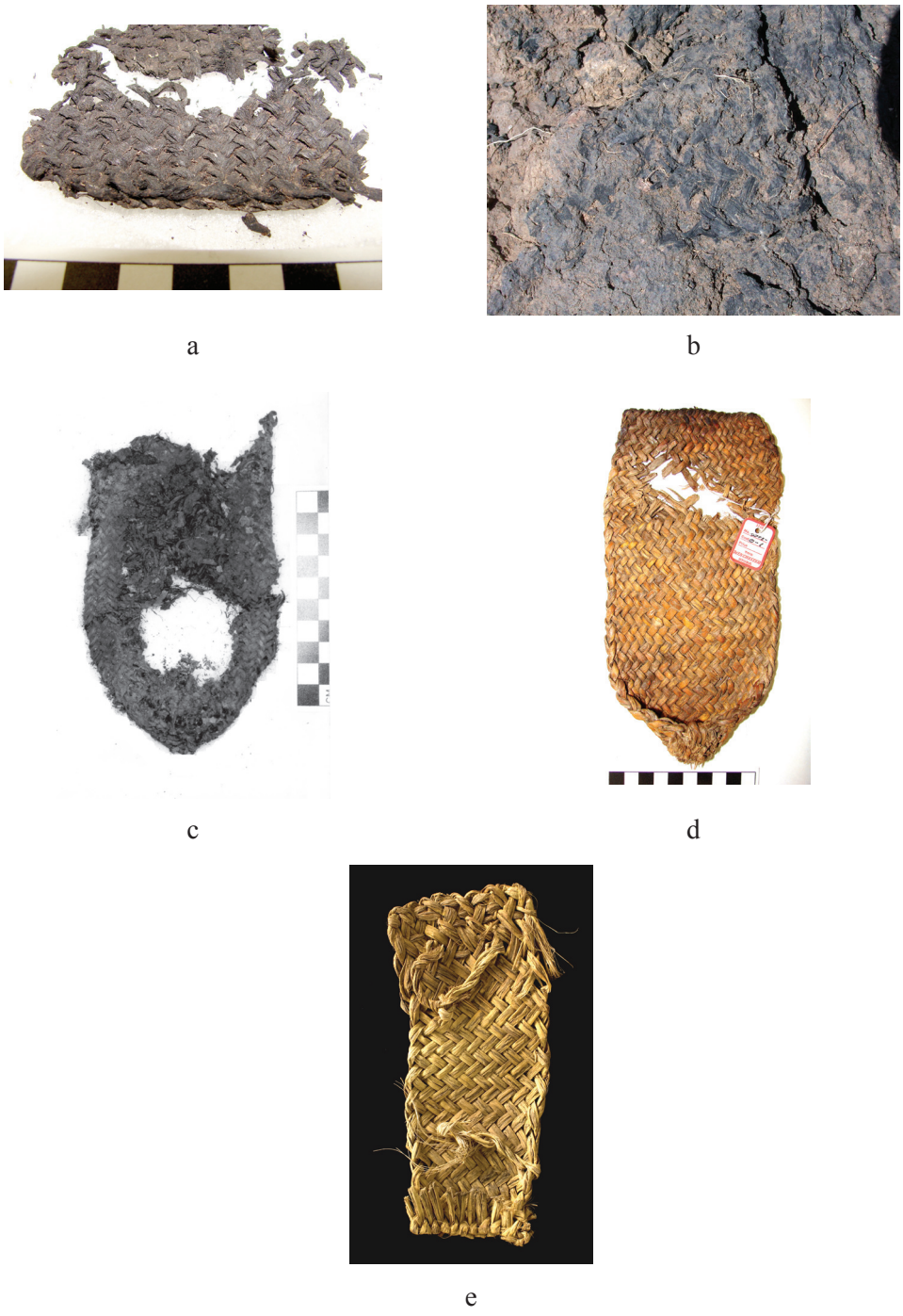


Figure 9.6. 2/2 twill-plaited sandals. (a) Side view of carbonized sandal with double 90-degree self-selvage, Pit Structure 10, Grass Mesa Village, Dolores River Valley (RV 4) (from Webster 2009: fig. 4.26b); (b) carbonized sandal on bench of Feature 1 pit structure, 5LP187, Ridges Basin, Animas Valley (130.27.1); sandal has a 90-degree self-selvage, not visible in photograph (from Webster 2009: fig. 4.3c); (c) carbonized sandal from floor of Structure 2 pit structure, 5LP379, Blue Mesa, Animas Valley (PD/Bag 24.6) (from Webster 2009: fig. 4.27a); (d) sandal with square toe, cupped heel, and double 90-degree self-selvage from Todosio Rock Shelter (LA 4298), Navajo Reservoir District (MNM ARC 21947, LA 4298-0-1); this sandal yielded an AMS date of 1190 ± 25 B.P. in radiocarbon years (cal. 770–940 cal A.D. at 2 sigma) (courtesy of the Museum of Indian Arts and Culture/Laboratory of Anthropology, Department of Cultural Affairs, www.miaclab.org, Laurie Webster, photographer); (e) sandal with elements turned up at the heel, Cave 10, Chinle Wash (PM 25-4-10/A5944; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology).

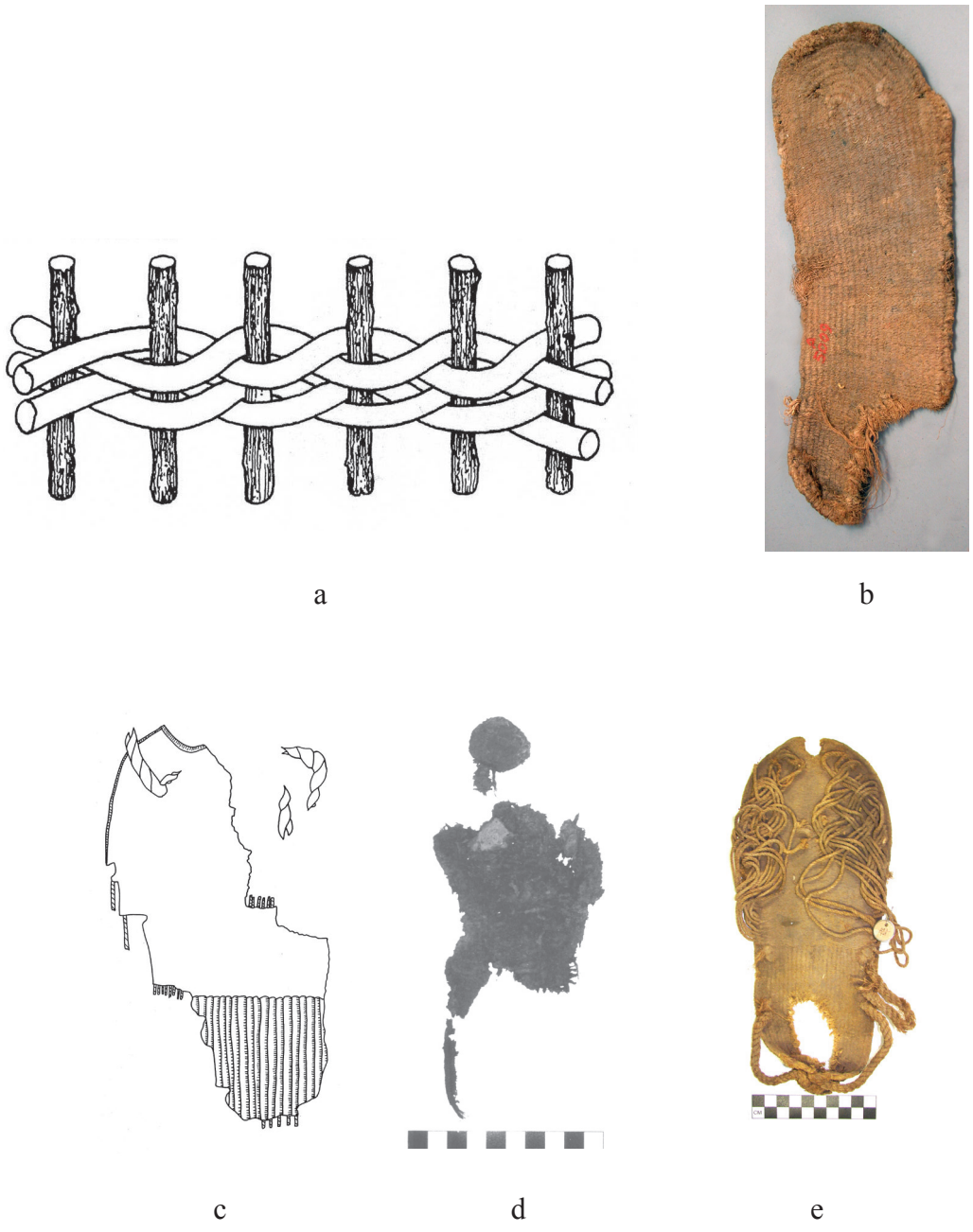


Figure 9.7. Twined sandals. (a) Schematic drawing of two-strand compact weft twining with S-twist wefts, one of the primary weave structures in twined sandals (adapted from Adovasio 1977: fig. 7a); (b) sandal with rounded toe and slight toe jog, from Room F, Cave 1, Tsegi Canyon (PM 20-5-10/A5009; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (c) carbonized sandal with scalloped toe, from floor of Feature 24 pit structure, NM-H-50-112, northern Chuska Valley (FS 1350) (from Webster 2000: fig. 20.1d); (d) carbonized sandal fragments with rounded toe, from floor of Structure 2 pit structure, 5LP579, Blue Mesa, Animas Valley (PD/Bag 24.37) (from Webster 2003: fig. 31); (e) Basketmaker III or Pueblo I sandal with deeply notched toe and elaborate side loops, Canyon del Muerto (AMNH 29.1/769) (courtesy of the Division of Anthropology, American Museum of Natural History, Laurie Webster, photographer).

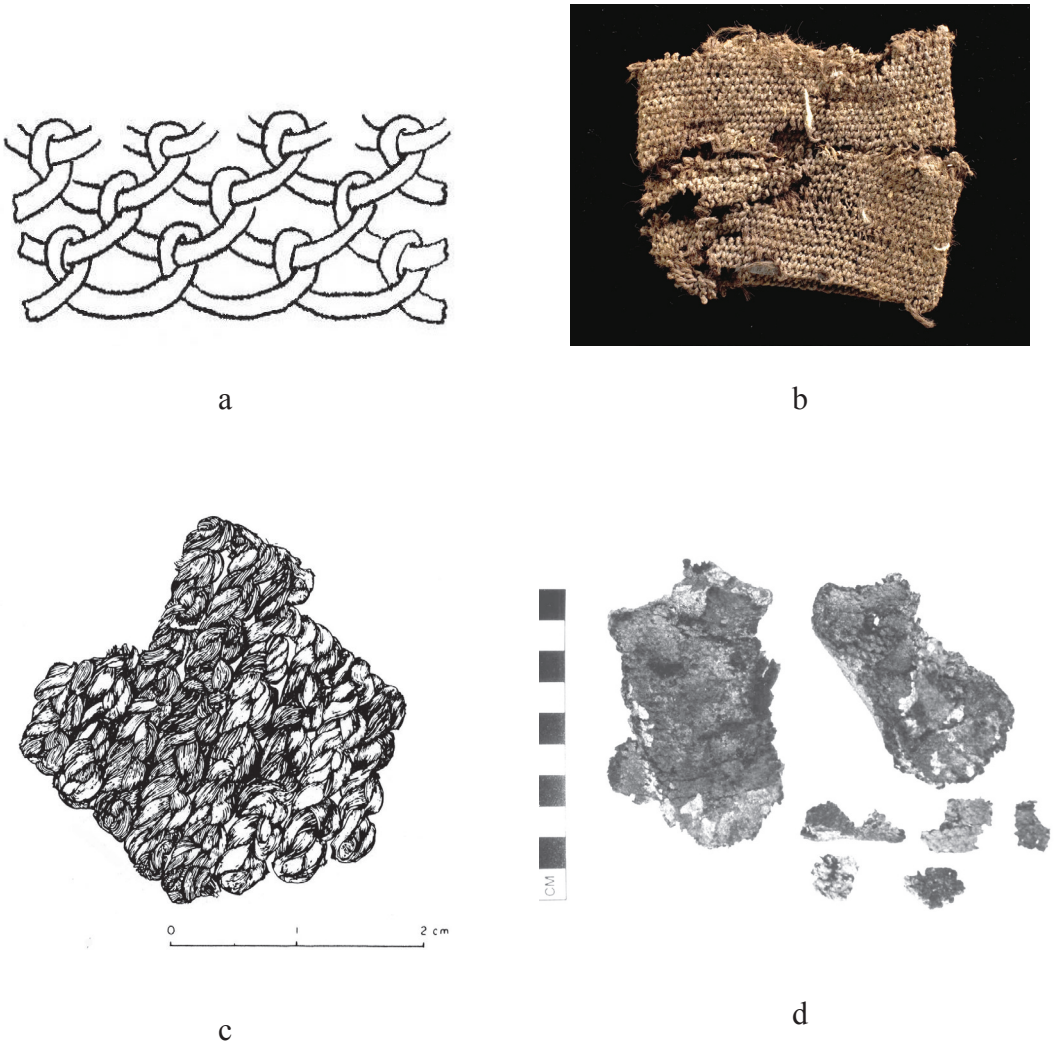


Figure 9.9. Looped fabrics. (a) Schematic drawing of simple looping (from Webster 2009: fig. 4.33a); (b) looped human-hair sock or legging, Site 11, Chinle Wash (PM 25-4-10/A5961; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (c) carbonized fragment of looped yucca fabric, from trash deposit, Grass Mesa Village, Dolores River Valley (RV 11) (from Blinman 1986: fig. 2.6); (d) carbonized fragment of looped yucca bag from roof fall of Structure 5 pit structure, LA 27092, lower Animas Valley (PD/Bags 221.69 and 249.1) (from Webster 2009: fig. 4.33e).

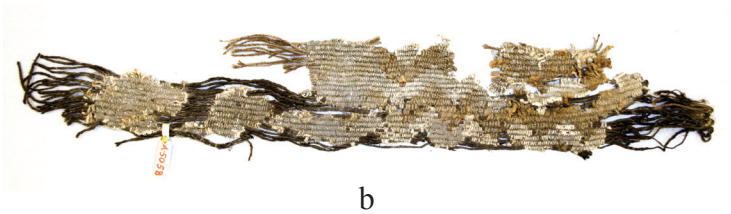
a

b

c

Figure 9.11. Cotton loom-woven fabrics. (a) Checked fabric, Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5058.2); (b) plain-weave fabric sewn into a sleeve-like form, Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5057); (c) plain-weave fabric with surface design of interlocking diamonds, each with a dot at center, possibly Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5056). All images © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology.

a



b

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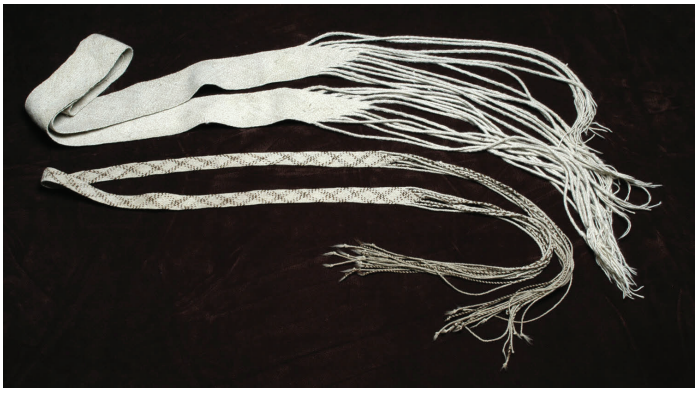

d

Figure 9.12. Woven bands and braided sashes. (a) Undecorated yucca tumpband woven in plain weave (probably), Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5055; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (b) decorated slit-tapestry tumpband with cotton and hair warp, cotton weft, Burial 2, Cave 1, Tsegi Canyon (PM 20-5-10/A5058.3; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (c) decorated tumpband woven in tapestry weave, general digging, Water Fall Ruin, Chinle Wash (PM 22-13-10/A5549; © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology); (d) two braided sashes from Obelisk Cave, Prayer Rock District; upper sash contains dog hair and cotton fiber, lower sash contains dog hair and human hair (ASM A-21413 and A-21414) (courtesy of the Arizona State Museum, University of Arizona, Jannelle Weakly, photographer).