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COMMUNAL SPACES: AGGREGATION AND INTEGRATION IN THE MOGOLLON REGION OF THE UNITED STATES SOUTHWEST

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By

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COMMUNAL SPACES: AGGREGATION AND INTEGRATION IN THE MOGOLLON REGION OF THE UNITED STATES SOUTHWEST

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF ANTHROPOLOGY

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Abstract

Aggregation and integration are processes that occur in human societies throughout the globe. An informative example of population aggregation and social integration can be observed in the North American desert borderlands from A.D. 250 to 1450 in the area known as the Mogollon region. In fact, Mogollon communities oscillated from smaller social groups into larger ones and dispersed into smaller groups only to form larger ones again. For this reason, examining the groups of people living in the Mogollon region provides a magnified view of social change over a substantial period. Understanding patterns of aggregation and integration provides researchers with the promise for research into the nature of these phenomena.

In general, the Mogollon region is characterized by limited water supplies and low average annual precipitation. However, pockets of the Mogollon area, including the Mimbres valley and the Gila River valley, represent oases, where permanent rivers and their associated tributaries allowed for the pursuit of agricultural endeavors and access to a wide variety of wild plant and animal resources. The areas with these kinds of potential became population centers for previously dispersed groups of people living in the region. These people exploited natural resources and practiced agriculture in areas surrounding their communities. Over time, more organized aggregated and socially integrated communities were established throughout the region. Using ancient Mogollon communal architecture, commonly called kivas, this study examines issues of, and evidence for, population aggregation and social integration.

CHAPTER 1

BUILDING TIES: COMMUNITY FORMATION, AGGREGATION, AND INTEGRATION

One of the most significant and compelling aspects of anthropological research is the formation of communities by groups of people. While these communities are organized in a wide variety of ways, there appear to be recurring recognizable patterns. The concept of social organization, including population aggregation and social integration, has been theoretically explained; it is useful to explore their causes. This allows an understanding of how and why communities form and grow as a result of population aggregation, and sometimes reorganize via social integration.

For the research reported here, the Mogollon region was selected, allowing a combination of theoretical views that may shed light on aspects of human existence. Population aggregation and social integration can be observed in the Mogollon region of the North American desert borderlands from A.D. 250 to 1450. These communities have repeatedly oscillated between smaller and larger social groups. For this reason, examining the groups of people living in the Mogollon region provides a magnified view of social change over a substantial period allowing research into the nature of aggregation and integration.

This study examines aggregation and integration, from both a descriptive perspective and using a combination of theoretical models. Specifically, I describe and examine data from 110 Mogollon sites. Throughout the course of this examination, the analysis was guided by three areas of thought. I defined the dynamics of aggregation and integration within these groups by identifying the various factors involved in bringing about the formation of larger communities. I explored the external and internal factors, including ecological, social, and behavioral aspects, influencing strategies of adaptation in the formation of population aggregation and social integration. The role of communal architecture was also discerned for these communities as a measure for these social processes.

Three interlocking hypotheses form an integral part of the theoretical framework for this investigation. The first hypothesis is that changing ecological conditions such as rainfall patterns, resource availability, and periods of drought affect aggregation and/or integration. The second hypothesis is that population aggregation, combined with declining resources or external threats to a community led to social integration. A third hypothesis is that population aggregation and social integration are relatively short-lived endeavors at sites in areas affected by frequent fluctuations in rainfall and resource abundance.

The phenomena of population aggregation and social integration (although they are not always linked) are best disclosed through an examination of a common architectural form, namely subterranean or semi-subterranean communal structures, traditionally called "kivas" (Figure 1.1), found throughout the Mogollon area. While the presence of kivas certainly indicates similarities in social organization, an analysis of communal structure variation may demonstrate the amount and nature of aggregative and integrative activity. As such, communal structures are the primary focus of this study.

This analysis contains both synchronic and diachronic architectural elements as well as archaeological and ethnographic data from contemporary communities. The results of the study will evaluate the nature and analyze the significance of population aggregation and social integration, related to social changes within communities.

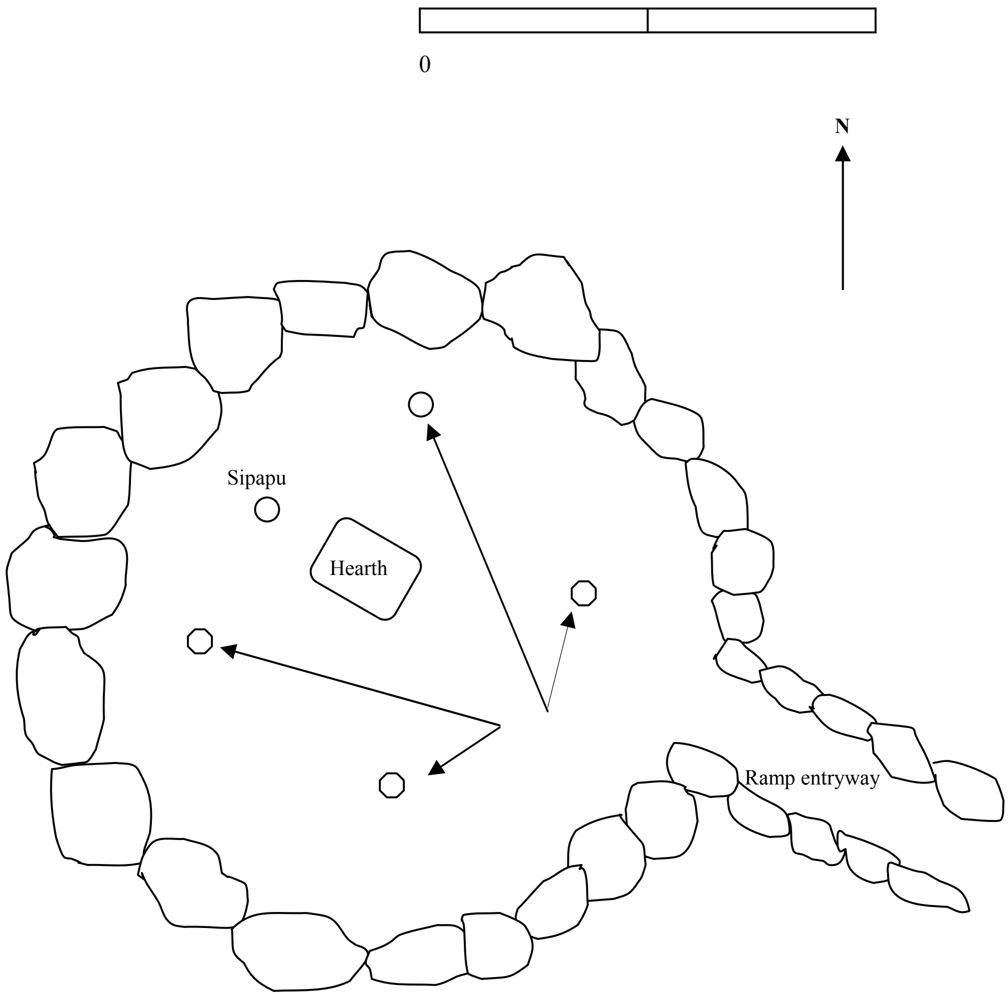


Figure 1.1. Hypothetical Example of a Mogollon Communal Structure. Arrows point to posthole locations.

The Mogollon Case Study

The Mogollon area encompasses much of southern New Mexico, southeastern Arizona, portions of southwestern Texas, and portions of northern Chihuahua, Mexico (Figure 1.2). This region has been recognized for the study of social networks and the impacts of environmental influences on community formation (Anyon and LeBlanc 1980; Anyon et al. 1981; Haury 1936, 1985; LeBlanc and Whalen 1980; Nelson and LeBlanc 1986).

The Mogollon area was chosen for this analysis for three specific reasons. First, it has a semi-arid desert environment with water and arable land necessary for agriculture, both of which are concentrated in relatively small areas. As Stone and Downum (1999) suggest, these factors affect the need for specific organizational strategies. Second, a wide variety of wild plant and animal resources exists in the Mogollon area facilitating the ability of people to live in larger aggregated and/or integrated communities even when faced with limited access to water and arable land suitable for agriculture (Hill 1970; Leonard and Reed 1993; Stone and Downum 1999). Third, Mogollon villages of various sizes and many with communal structures have been excavated (Anyon and LeBlanc 1980, 1984; Nelson and LeBlanc 1986). These excavation data provide significant material for a regional study of aggregation and integration spanning multiple generations, from Winn Canyon, one of the earliest known sites with a communal structure (A.D. 310), to the latest date for the large Grasshopper community (A.D. 1425).

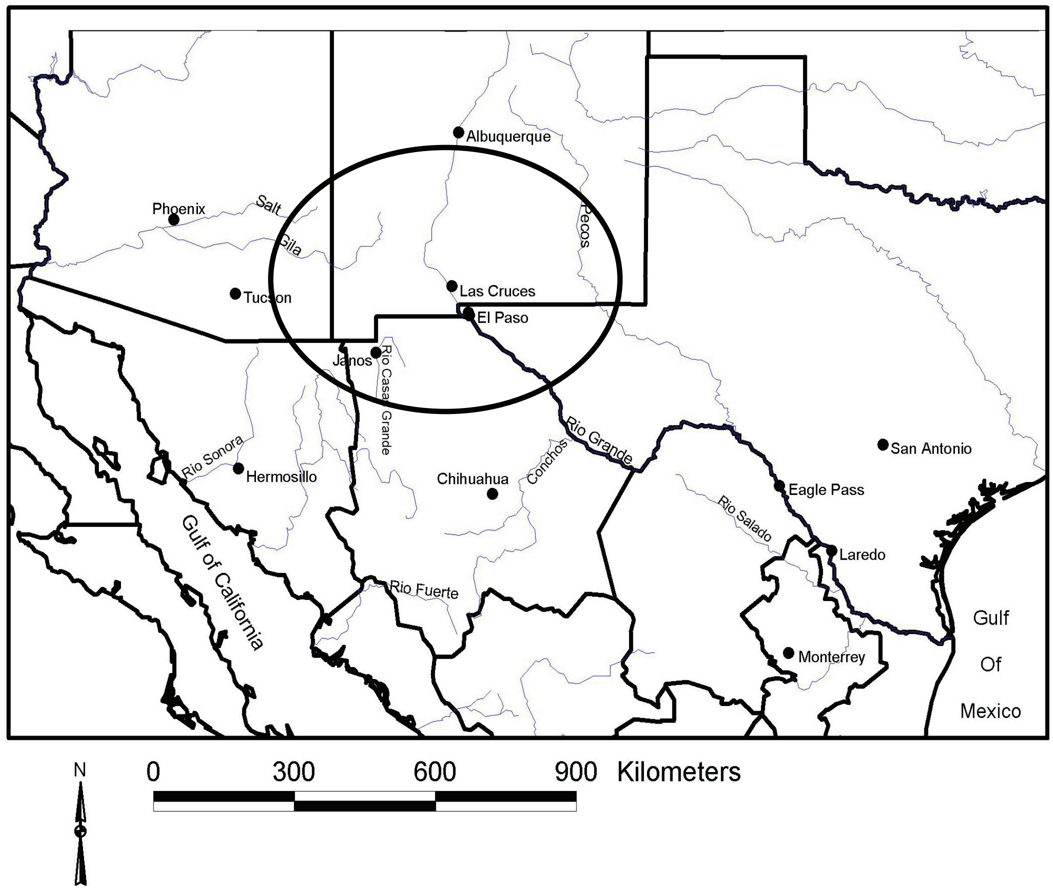


Figure 1.2. The Mogollon Region of the Desert Borderlands (after Vierra 2005).

Defining Aggregation and Integration

The organizational strategies of a community are dynamic as reflected by the archaeological record. Defining the processes of aggregation and integration as they apply to this research is important because many scholars use the terms aggregation and integration interchangeably (Adler 1989a, 1989b, 1994; Cordell 1997). Cordell (1994:79) describes aggregation as the process by which groups of people come together spatially, but without proposing any instigating or motivating factors. Lipe (1994:142) suggested that there can be varying degrees of aggregation, and integration may represent a higher degree of aggregation. Hill (1970:89) was one of the earliest to discuss aggregation and integration as distinct, related social processes (see also Longacre 1966). Hill states that at sites located in the Hay Hollow Valley of east-central Arizona in the "process of aggregation, there appears to have been an increase in the scope of integration" (Hill 1970:89). Hill (1970) also suggests that integrated sites may be identified by their relative architectural homogeneity, and aggregated sites tend to be characterized by greater numbers of communal structures and diversity in architectural styles (Hill 1970:108-109). Although Hill does not explicitly define these two processes, he makes a clear distinction between the two. This distinction is very important to the research presented in this analysis.

Aggregation

A group is considered aggregated when people come together to form a densely populated community (Cordell 1994; Cordell et al. 1994; Crown and Kohler 1994; Leonard and Reed 1993). The length of the aggregation and the size of the community are not central components of the definition. Aggregation is simply the process by which several allied but autonomous families or groups coalesce. Evidence for aggregation is seen in all types of societies, including foragers, horticulturalists, agriculturalists, and industrialists (Adler 1989a; Hard and Roney 1999; Johnson and Earle 1987). It has been suggested that all societies participate to some degree in aggregation (Adler 1989a, 1989b; Adler and Wilshusen 1990; Chagnon 1992; Hard and Roney 1999; Johnson and Earle 1987; Riggs 1999, 2000).

Although aggregated communities vary in size and length of stay, there are common characteristics that all such communities exhibit. People living in aggregated communities generally have similar lifestyles, but they do not necessarily share unified political, social, or religious views of the world (Cordell 1994; Leonard and Reed 1993; Stone and Downum 1999). Stone and Downum (1999) suggest aggregation occurs in communities that need to intensify their agricultural production because lands well suited for food production are relatively concentrated. Population aggregation in the desert borderlands occurred as early as 3,000 years ago (Adams and Hanselka 2001; Hard and Roney 1999, 2000, 2001, 2002a; Schmidt and Nisengard 1998, 2001).

Early population aggregation has been observed in hilltop settlements in northwestern Chihuahua, Mexico, at sites such as Cerro Juanaqueña (Figure 1.3), Cerro Vidal, and Cerro de los Torres (Hard and Roney 1999, 2000, 2001, 2002a, 2002b; Hard et al. 1999; Roney and Hard 1999, 2002a, 2002b). Early aggregation also occurred in communities situated in the Tucson Basin (i.e., the Costello-King site; Riggs et al. 2000). Dates from these sites provide important data concerning Late Archaic and subsequent aggregation in the Mogollon region. For many years, archaeologists working in the region believed that pit structure villages, which appeared after the Archaic period, were the first evidence of community formation and aggregation in the region. An archaeological investigation of aggregation at Archaic sites provides evidence for population aggregation and social integration at sites that predate pit structure villages by more than 2,000 years. Evidence from these sites helps to address the question, what motivates people to begin to aggregate and live in larger communities than they previously did? Chihuahua and Tucson Basin sites help identify factors that contribute to the formulation of an aggregated community and the development of social integration.

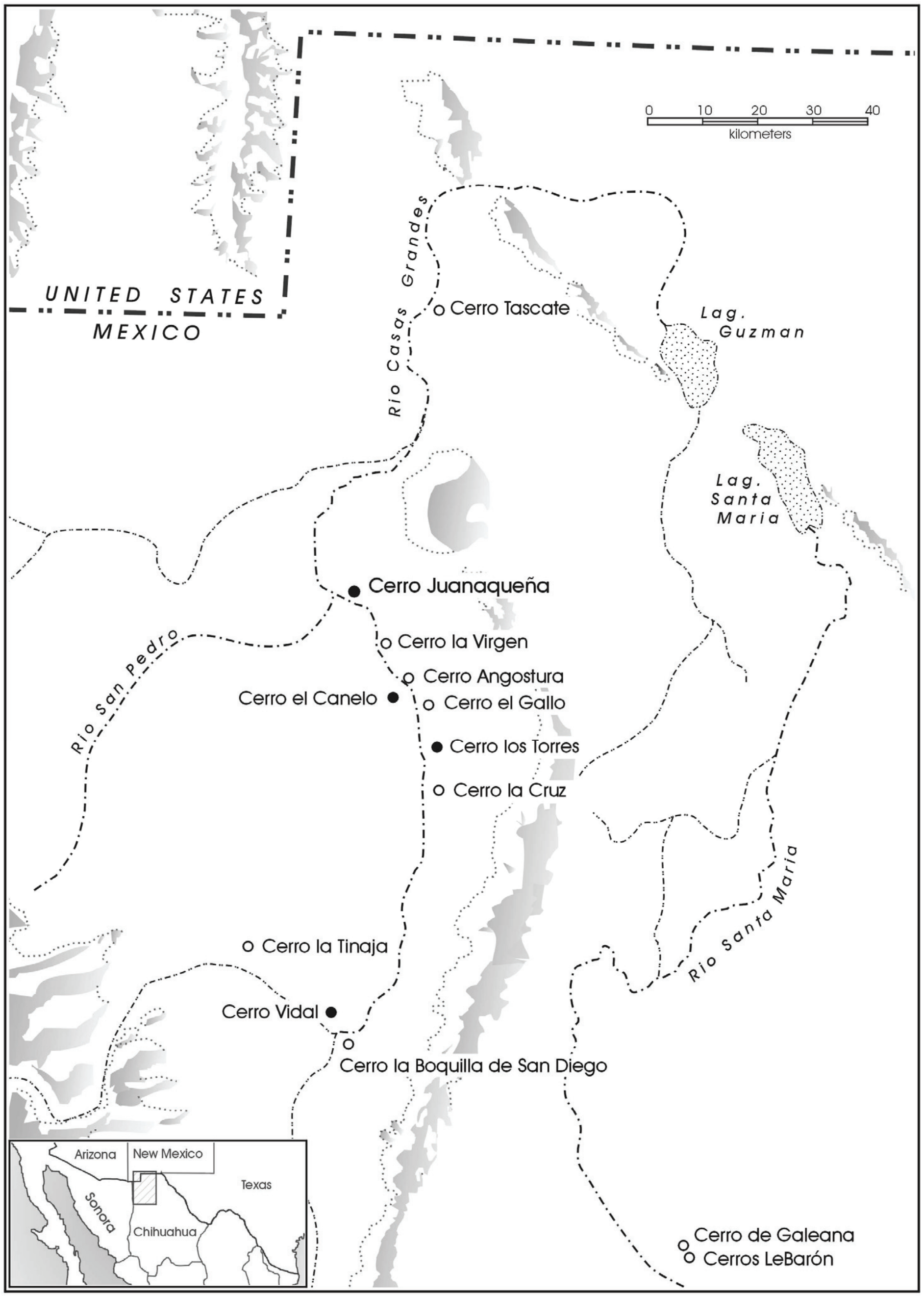


Figure 1.3. Late Archaic Sites in Northern Chihuahua, Mexico. Dark circles are sites that have been subject to archaeological testing (Hard 2000).

Several factors may encourage maintenance of smaller communities while others that promote or prompt a move into more aggregated ones. Aggregation most often occurs in response to one or more of the following conditions:

1. Relatively short periods of environmental uncertainty. As an example, regular fluctuations in annual rainfall patterns in the desert borderlands can influence aggregation (Leonard and Reed 1993:655; Minnis 1985). During such fluctuations, the ability of a group to access a larger number of people willing to contribute to the accumulation of resources may provide increased social and economic stability (Stone and Downum 1999).
2. Increased agricultural productivity and/or resource abundance. For example, when a vital/desirable resource or the potential for productivity is concentrated within a relatively small area, people may participate in aggregated efforts to establish or maintain access to that resource (Stone and Downum 1999). In areas like the desert borderlands, resources are relatively limited, and the potential for productivity is concentrated in areas with permanent or semi-permanent water sources (Minnis 1985).
3. External threats from outside groups. Larger numbers of people involved in a community provide not only the appearance of strength in numbers but also tend to reduce the threat of competition in an area because outsiders are faced with an organized and united front (Cordell 1994; Ember and Ember 1992; Feinman and Neitzel 1984; LeBlanc 1999; Stone and Downum 1999).

4. Social reasons (Fish and Fish 1994; Fish et al. 1994:138). Groups of related people living in small, dispersed communities may aggregate during certain times of the year to forge marriage and trade alliances (Carneiro 1967, 1970). Dispersed communities involved in cooperative marriage, hunting, or warring alliances may join to form an aggregated community (Chagnon 1968, 1992).

In all of the situations outlined above, the congregation of dispersed groups even for a relatively short period is a response to the conditions present. The congregating groups do not necessarily share a common ideology or political structure, although aggregated populations often consist of extended families (Fish et al. 1994). At the same time, aggregated populations tend to have a common economic strategy but not necessarily the same subsistence base because trade alliances often involve the exchange of non-local foodstuffs. A contemporary example of aggregation is today's urban, aggregated communities, which are sometimes gated. People surrender certain individual freedoms to share decision-making responsibilities (i.e., local elections, home associations, and seats on school boards) and are of a similar economic background but may belong to different religious and/or social groups.

Integration

In contrast to aggregation, integration is the process by which an aggregated population becomes politically, socially, symbolically, ritually, and economically unified (Adams 1989; Adler 1994; Carneiro 1967; Hegmon 1989:5, 1995; Hill 1970). Certainly, not all aggregated communities become integrated. Integrated communities can be identified by their own unique mark in the archaeological record. Sometimes physical remains of communal activities at an integrated site reflect a greater emphasis on group solidarity (i.e., community planning) than for people who were only aggregated. Integration is more likely in the following situations:

1. Extended periods of ecological distress. Long-term drought within an aggregated community may act as a catalyst for integration (Longacre 1966). In these cases, the reliable cooperation for the good of all members may help to defer the consequences of ecological damage.
2. Decreases in agricultural production over extended periods (Stone and Downum 1999). An integrated community will help provide for its members in an invested manner, which does not occur in a relatively segregated, aggregated community.
3. Increases in access to resource-rich lands largely used for the pursuit of agricultural endeavors (Hard and Roney 2002a, 2002b; Stone and Downum 1999). Where resources are concentrated within coveted, limited space, integration allows a stronger, more permanent claim to the area.
4. Sustained threats and/or aggression from outside groups (Hegmon 1989; LeBlanc 1999). Long-term threats may lead to integration, because people who are part of an integrated community work together to deter or eliminate the threat.
5. Periods requiring frequent organization of large numbers of people for the accomplishment of ritual, political, economic, or social goals (Adler 1989a, 1989b; Adler and Wilshusen 1990). In this case, the goals of the community

become long-term, overarching, or all encompassing for members of a community who want to strengthen ties to one another and/or to an economic, political, or religious system.

In the above five examples, there is an intensification of the conditions that initially motivated population aggregation. The people coming together as an integrated community are organized in a specific manner (i.e., hierarchically or heterarchically). A portion of the population may allocate access to resources to the rest of the community or may organize activities including community construction (Adler 1994; Adler and Wilshusen 1990; Hard and Roney 2000). Frequently, during periods of increased integration, artifact standardization becomes more common and communities place an emphasis on group participation in the erection and use of communal structures (Adler 1989a, b; Cordell 1997:310; Powell 2001).

Communal Architecture, Aggregation, and Integration

Architecture and Archaeology

Architectural evidence potentially provides a great deal of information about ancient peoples and their communities. At the same time, as Binford (1965) points out, "...it must be recalled that these buildings (prehistoric ruins) are cultural products - not the culture." Binford (1965) suggests that culture cannot be found within the material remains of the people that use them. However, material culture, such as clothing, is a manifestation of a person's culture. For example, the clothing that people wear may keep them warm. That same clothing also conveys information about resource availability and exploitation and reflects aspects of a person's political, social, economic, religious beliefs, and status. In much the same way, architecture is not *culture per se*; but a reflection of certain aspects of both the practical needs of the people who build and use it and the social dynamics that brought it into existence as a particular form containing information and revealing behavioral patterns.

The multi-faceted relationship between architecture and culture can be observed in contemporary American societies. For instance, adobe, which consists of sun-baked bricks made from a mixture of mud and straw, is a readily available construction material that has long been associated with many ancient cultures in the desert borderlands. Currently, in many areas of Santa Fe, New Mexico, building restrictions require that people of all ethnic backgrounds use adobe and build in this traditional "southwestern" style. These regulations are largely socio-cultural and economic, as the people of Santa Fe and the tourism industry have decided that they want to actively pursue and propagate this uniquely recognized architectural tradition. This example emphasizes the importance of recognizing and understanding all of the factors that influence the architecture of a community, including both the functional and stylistic aspects of architectural elements.

Archaeologists recognize the value of architectural evidence to define, describe, and analyze ancient peoples and cultures. As is the case in many areas of the globe, architectural characteristics have been used to delineate and differentiate desert borderland cultures (Cordell 1997; Haury 1936; Kidder 1924; LeBlanc and Whalen 1980; Wheat 1954). For example, adobe construction, ball courts, and mounds characterize Hohokam communities in southern Arizona after A.D. 1150 (Cordell 1997:331-340). Hohokam characteristics can be compared to the slab masonry blocks that were the most common construction material found at Ancestral Pueblo sites in the northern portions of the desert borderlands (Cordell 1997:306-313). As a further example, coursed, cobblestone masonry is identified throughout the majority of the Pueblo period (A.D. 1000 to 1450) in the Mogollon area of the southern desert borderlands. The use of architecture for reconstructing and evaluating functions within ancient communities as well as a more thorough discussion of the differences in architectural form throughout the desert borderlands are explored in depth in Chapter 2.

Communal structures have been centerpieces of numerous Mogollon societies for centuries and continue to be a fixture of many American Indian pueblos in the southwestern United States today. Specific uses of communal structures at various southwestern pueblos are discussed in Chapter 3 (Adams 1989, 1991; Cordell 1994; Dozier 1970a, 1970b; Ladd 1979:482; Smith 1972, 1990). Today, Pueblo people build and use communal structures employing many of the same methods as their ancestors. For this reason, an intensive study of such ethnographic structures provides a more holistic understanding of the social dynamics, specifically aggregation and integration, within these ancient societies.

Communal structures can be the material reflection of population aggregation and social integration in that the construction of such a structure helps a community to establish and maintain social order by providing a central, tangible place for activities that involve all or part of its members (Adler 1989b; Adler and Wilshusen 1990; Lipe 1994:43). Therefore, the fewer the number of communal structures, the more likely it is that the people at a site are integrated. The availability of only one structure for communal activities encourages a larger proportion of the community to interact and reinforces solidarity. Conversely, the higher the number of contemporary communal structures at a site, the more likely that only aggregation is present. In this latter case, ties to a larger community are not necessarily reinforced, and the population is, in relative terms, more segregated. These organizational strategies include the relationships between the social, political, economic, and/or ritual needs of a community in that it is within these buildings that decisions regarding the community are made (Adler 1989b; Adler and Wilshusen 1990; Anyon et al. 1981; Creel and Anyon 2003; Hegmon and Lipe 1989; Leonard and Reed 1993).

Although aggregation and integration can occur simultaneously, one or the other may be more appropriate in response to specific conditions. The following are a series of measures for population aggregation and social integration that I constructed based on my expectations of the architectural manifestations of aggregation and integration in the archaeological record; these form the basis of this research, and the order in which they are presented is consistent from chapter to chapter. Table 1.1 presents a summary of the expected conditions and characteristics associated with communal structures at aggregated and integrated communities.

Table 1.1. Proposed Characteristics of Communal Structures in Aggregated and Integrated Communities.

Measure	Aggregated	Integrated
Frequency	Multiple contemporary communal structures expected at a site.	Fewer communal structures expected at a site, most likely, there would be only one to serve the entire site, regardless of site size.
Location	Multiple structures associated with particular roomblocks or smaller subsets of the community.	One centrally or prominently located communal structure within a community. One spatially or isolated structure associated with one or more communities. Redundant use of the same location at a site to erect a communal structure.
Size	Variability in communal structure size is expected for multiple contemporary structures. Structure size may be dependent on the location of the structure within the site and the size of the groups using the structures.	Usually a relatively large structure, although size can be relative to a site's population size. Isolated structures may also be large and serve to integrate several communities.
Shape	Variation within the contemporary communal structures at a single site.	When there is only one structure at a site, this characteristic is not as revealing of a characteristic, but may be used to reflect regional integration. If there are multiple communal structures, the shape will be consistent throughout the site and the period at an integrated site.
Wall construction technique	Varies from structure to structure at the same site.	This may only be useful at a regional level; however, if there are multiple communal structures at an integrated site there will be consistency in construction. This may be particularly evident in communal structures erected in a specific location over a broad period.
Hearth shape	Hearth shape should vary from structure to structure.	If there are multiple hearths in a structure at an integrated site, there will be more standardization within structures. There will be little or no variation in hearth shape.
Orientation	Variable from structure to structure.	Standardized orientation.

The first characteristic of importance is that of contemporary communal structure frequency at Mogollon sites. Adler (1989b) stated that communal structures are built when there are a minimum of six decision-making entities involved in a group effort. It is true that some sites have more communal structures and communal structure frequency does change through time. I suggest that aggregated sites generally have multiple contemporary communal structures, reflecting a relatively segregated or at least segmented group of inhabitants. I further suggest that an integrated site has fewer contemporary communal structures because this encourages social solidarity in a community. However, in keeping with Adler (1989b), sites with large populations may require multiple structures, although these will have architectural redundancies, which will be discussed below.

The second measure is the location of a communal structure at a site. Location is an important characteristic because the placement of a communal structure can provide information about who has access to a facility. Multiple social groups or communities may share access and use-rights to a communal structure. Communal structures may be located in enclosed roomblocks whereby the inhabitants of the roomblock would limit or at least monitor access to the structure. I suggest that aggregated sites will have multiple communal structures, each located close to a roomblock or section of the community with which it is associated. An integrated community will have one or two structures that are centrally located and/or located in areas where access to them can be controlled.

The third characteristic is that of communal structure size. The size of a communal structure is important because smaller sizes will provide for fewer numbers of participants. On the other hand, a larger facility will allow for greater numbers of people to participate in communal activities. Therefore, aggregated communities will have multiple smaller, contemporary communal structures, and integrated communities will have fewer and larger facilities. It should be noted that, in both of these cases, communal structure size would be influenced by the size of the group using it.

Another important measure of aggregation and integration in a community is communal structure shape. Although there may be certain shapes common during a particular period, aggregated communities should have more diversity in communal structure shape. Shape variation would reflect social diversity within a community, people aggregating on the landscape with different ideas about how a communal structure is shaped. Increasing social integration at a site can also be identified when communal structure shape becomes more consistent at and among sites. As previously discussed, an integrated community may have multiple communal structures because of a community's size, but the structures should be similar in shape. Shape is also important because shapes change with time and can reflect increasing regional integration.

Wall construction technique is another characteristic used to measure aggregation and integration in this analysis. Although people living in the Mogollon region were somewhat limited in the materials for their architecture, construction patterns are associated with population aggregation and social integration. Similar to shape, the construction techniques used to erect contemporary communal structures at an aggregated site should be relatively diverse. Construction techniques at an integrated community will be more standardized, such that if there are multiple communal structures, they will be more similar.

Hearth shape is an interesting characteristic, because the presence of a hearth within a room is often central to the characterization of a room's function. Generally, storage rooms do not have hearths, habitation rooms have at least one hearth (the shape of which varies), and communal structures tend to have a single hearth (Anyon and LeBlanc 1980; Creel and Anyon 2003). Hearth shape is associated with aggregation and integration, in that an aggregated community will have greater diversity in contemporary hearth shape, while contemporary communal structures at an integrated community will have a more standard hearth shape. This characteristic is also important at a regional level, because if integration is occurring within a large area, hearth shape will be consistent from site to site.

Finally, structure orientation is an important characteristic, because diversity in this characteristic may reveal information about aggregation and integration. An aggregated site will have more diversity, including subtle variation, in structure orientation, while a socially integrated site will have a more standardized orientation.

The analysis of the measures discussed in the previous section, which is presented in Chapter 5, uses 206 communal structures from 110 Mogollon sites ranging in age from A.D. 310 to 1425. These sites are from many locations, representing a cross section of the Mogollon region (Appendix II). Not all of the structures included in Appendix II were excavated and as a result, the available data for them are limited. Appendix I provides a coding sheet that can be used to interpret Appendix II. Appendix II includes all of the available detailed information (i.e., dates, sizes, construction technique, and site location) about each structure along with reference information.

Chapter Summaries

Chapter 2 includes a general review of previous research on architecture, aggregation, and integration including a detailed discussion of how aggregation and integration can be identified using architectural evidence. In an effort to accomplish this goal, included in this chapter are examples from the ethnographic and archaeological record. Chapter 3 provides detailed information on the Mogollon region. Specifically, the physical environments of the area are discussed as well as are several archaeological examples of research concerning aggregation and integration. The criteria used to define an architectural feature as a communal structure as well as the methods used to collect, organize, and analyze these data are included in Chapter 4. Chapter 4 also includes an explanation of the theoretical model used to explain community formation, aggregation, and integration in the Mogollon region. Chapter 5 presents the results and discussion of the architectural analyses conducted. The database and coding information used to generate the results presented in Chapter 5 can be found in Appendices I and II. The chapter also addresses questions associated with architectural data and how they can be used to identify, measure, or gauge population aggregation and social integration. Analysis of communal structure data and discussions about Mogollon communities and their communal structures are included in Chapter 5 with regard to the expectations outlined in Table 1.1. Chapter 6 presents conclusions from the analysis as well as some lessons learned about data collection. Issues involved with the study of aggregation and integration, and excavation strategies are included in this chapter. Broader issues related to research concerning aggregation and integration are addressed in the final chapter as well.

CHAPTER 2

AGGREGATION AND INTEGRATION: BACKGROUND RESEARCH ON THE ARCHITECTURE OF SOCIAL ORGANIZATION IN THE MOGOLLON REGION

Aggregation and integration are the two processes central to the research presented in this thesis. This chapter explores the ways in which archaeologists use these two concepts to understand human relationships and communities. Archaeologists working in the southwestern United States and northern Mexico frequently refer to aggregation and integration when evaluating community organization (Adler 1989a, 1989b; Crown and Kohler 1994; Hill 1970; Leonard and Reed 1993). The terms are sometimes used interchangeably although they sometimes appear to be mutually exclusive. In Chapter 1, I define aggregation and integration in very specific ways. In this chapter, I review previous research concerning aggregation and integration, the ways in which archaeologists have defined these terms, and how researchers apply their definitions to analyses of archaeological data.

Archaeologists have long been interested in the conditions under which humans initially come together to form groups and why they remain together as groups for varying intervals of time. Understanding the impetuses for group formation allows researchers to gain information about the decisions people have made in the past and continue to make today. Previous research concerning the concepts of aggregation and integration are considered in this chapter. Background research conducted in the Mogollon region and elsewhere that focuses on these concepts is reviewed in the following sections. Additionally, previous research on communal structures as the architecture of aggregation and integration is also discussed.

Previous Research: Aggregation and Integration

Aggregation and integration are two distinct processes of community formation. Although these two processes differ, they can occur simultaneously or sequentially in ancient, historic, and contemporary communities (Adler 1989a, 1989b; Hill 1970; Ortiz 1970). Aggregation does not necessarily lead to integration. Documented cases exist where population aggregation, social integration, and dispersal oscillate back and forth for extended periods of time or indefinitely (Chagnon 1968, 1992; Creamer 1993; Hill 1970; Schmidt and Nisengard 1998, 2001). For example, some groups come together for a variety of reasons, which include harvests and marriage alliances. Once the goals of their unity have been accomplished, the people who form these groups then return to their smaller communities (Chagnon 1968, 1992; Hard and Roney 1999, 2002a, 2002b; Johnson and Earle 1987; Schmidt and Nisengard 1998). The circumstances under which such movements occur are explored more fully below.

Since the 1930s, archaeologists working in the southwestern United States and elsewhere have considered the concepts of integration and aggregation (Adler 1989a, 1994; Cordell 1994; Hegmon and Lipe 1989; Hill 1970; Leonard and Reed 1993; Steward 1937; Stone and Downum 1999). While the definitions of aggregation and integration used in this research were presented in Chapter 1, in this chapter, I explore previous archaeological explanations for these two phenomenon. Aggregation and integration are measured in this research using communal structures identified at archaeological sites in the Mogollon region. The concepts of aggregation and integration are not new, and many researchers have contributed to the definitions included in this research.

Despite differences in defining these terms, most archaeologists are more explicit in explaining how and why these processes occur (Hegmon and Lipe 1989; Leonard and Reed 1993). Almost all of the models used to explain aggregation and integration incorporate at least one of the following causative factors: population size/density, subsistence strategies, environmental conditions, conflict (either internal or external strife), and social coherence (Adler 1989a, 1989b, 1994; Cordell et al. 1994; Hegmon and Lipe 1989; Leonard and Reed 1993; Stone and Downum 1999). One reason that some of these variables are considered primary is that they can be quantified. Additionally, changes in one or more of these elements can correspond to a visible social response. The background research presented in the following section focuses sequentially on each of the factors listed above as they have been used to explain integration and aggregation.

Aggregation and Integration: Explanatory Models

Population Models

Although they do not specifically define the terms, Fish et al. (1994) propose that, as population growth occurs, it is necessary for people to employ organizational mechanisms such as aggregation and integration in order to incorporate the growing numbers of people living within their communities. To explain site abandonments in the southwestern United States and using an area in southern Arizona specifically, Fish et al. (1994:137) suggest that population aggregation and social integration are two possible responses to increasing population size. Aggregation into concentrated areas on the landscape can lead to increasing social integration, allowing larger numbers of people to occupy densely populated villages in an organized manner. Population concentration into large communities is not necessarily associated with resource depletion or depression but rather with the integration of substantial numbers of people (Fish et al. 1994:138). At the same time, concentrating populations should have some common unifying ideals and goals in order to promote a functioning integrated society (Fish et al. 1994:159). Adler (1989b), however, suggests that the process of integration might also facilitate the need for public architecture such as communal structures. In Adler's (1989b) models, a communal structure can serve as a focal point for the community and in its construction may serve as a mechanism of unification.

Although Adler (1989a, 1989b) and others (Crown and Kohler 1994; Johnson 1982) do not draw a distinction between aggregation and integration, they present density-dependent models to explain the emergence of these phenomena. In such models, population density, as opposed to population growth, is the motivating factor in socio-organizational change including integrative characteristics. Adler (1989b), following Johnson (1982), offers a "scalar stress" model. He uses data from a sample of "non-ranked" societies selected from the Human Relation Area Files (HRAF) to discuss scalar stress. Adler (1989b:39-40) begins with a discussion of how people living in non-ranked societies make decisions, and in general, he finds that decision-making is done via consensus. As the number of decision-making entities increases, reaching a consensus becomes increasingly difficult, resulting in socio-political stress or what Johnson

(1982:38-39) refers to as scalar stress. In an effort to decrease this stress, organizational changes occur. One change Adler (1989b) finds consistently is an increase in social integration, which is manifested in the archaeological record as "integrative facilities" or communal structures. Specifically, Adler notes that when there are at least six decision-making entities involved (e.g., six families, corporate groups), a communal structure is built to facilitate a consensus.

Subsistence Strategy Models

Leonard and Reed (1993:652), in reviewing models that focus on population growth as the motivating factor for aggregation and integration, conclude that population growth is not the most important factor. Instead, these authors suggest, population growth is the result of a successful adaptation already in place. Leonard and Reed (1993:653) focus on increasing levels of agricultural specialization as the major influence on population aggregation. In their model, climatic changes, including decreasing levels of rainfall, lead to increased specialization in agriculture as opposed to foraging, hunting, and non-specialized agricultural endeavors. Subsistence specialization and intensification require a greater labor investment. This encourages population aggregation, allowing for a larger, more organized, and reliable labor pool. Therefore, it is an appropriate response to subsistence changes and climatological variation regardless of trends in population growth (Leonard and Reed 1993:655). This model further suggests that aggregation may occur in the absence of substantial population growth.

Adler (1994:87-89) considers agricultural resource availability in his "curvilinear hypothesis." According to Adler (1994:87), aggregation of household units occurs when there is “moderate resource scarcity” within an area. This aggregation allows previously autonomous household units to pool their resources (i.e., land, water, and labor) and to intensify their agricultural pursuits. However, Adler (1994:87) contends that a cooperative effort does not endure if or when subsistence conditions become more stressful (as determined by ethnobotanical, zooarchaeological, dedrochronological, and other methodologies); the elevated resource stress motivates the aggregated households to return to subsistence autonomy.

Minnis (1985) suggests that “food stress” does not necessarily cause social change, but that it is certainly related to organizational changes like aggregation and integration. Using subsistence and environmental data from the Mimbres Valley in the Mogollon region, Minnis (1985:5-8, 195-197) states that social integration is a strategy used by groups to help decrease the impacts of both chronic and acute episodes of food stress. If shortages and over harvesting of local resources continue over long periods, however, populations disperse (Minnis 1985).

The examples provided in this section focus primarily on subsistence systems and the role that this element plays in aggregation and integration. Subsistence is related to environmental conditions, and the next section explores models that have used the paleoenvironment as the primary force motivating population aggregation and social integration.

Paleoenvironmental Models

The environmental fluctuations characteristic of the desert borderlands are constant, and there is evidence to suggest that ancient borderland peoples used social and economic strategies to plan for expected and unexpected variations in rainfall patterns. Societies must maintain a certain level of flexibility to allow for unpredictable environmental events; this kind of flexibility may be manifested in periods of aggregation and/or integration that are visible on the landscape and in the archaeological record.

Halstead and O'Shea (1989) introduce one model using environmental conditions as the primary factor involved with aggregation and integration. These authors discuss "coping mechanisms" employed by people faced with variation in environmental conditions. According to Halstead and O'Shea (1989), these mechanisms explain the presence of aggregation and integration during times of resource depression. Specifically, humans have a wide range of strategies, including aggregation and integration, which may be related to fluctuations in environmental conditions. These "coping mechanisms" can be quickly employed to help a group of people or a community to endure unpredictable or changing conditions.

As such, the archaeological record of the North America desert borderlands provides a context for understanding the relationship between environmental fluctuations and the strategies of aggregation and integration (Halstead and O'Shea 1989:2; Minnis 1985). Furthermore, the "coping mechanism" model assumes that decisions previously made by groups of people may be predictable within the social context of that group. Obviously, certain strategies for dealing with a set of circumstances help a group or a community to deal with variability while others do not. Therefore, the approaches that have been employed in the past will most likely be the first implemented both in the present and future as similar situations and problems present themselves (Halstead and O'Shea 1989:5; Minnis 1985).

Understanding the environmental factors that play a role in the aggregation and/or integration of a community provides information about the conditions that result in these kinds of social organization. This is the case with Hill (1970:88), who uses environmental factors to explain population aggregation and social integration at sites in east-central Arizona, suggesting that these two mechanisms occur when the need to control concentrated areas of land and water suited for agricultural production increases. These needs are made immediate due to changes in the physical environment, more specifically in fluctuating periods of drought (Hill 1970:95; Longacre 1970). Population levels at small sites in areas of east-central Arizona decreased, and people from these sites moved into more densely populated, aggregated, and integrated larger villages located near required and desired resources. According to Hill (1970), cultural materials recovered from archaeological sites should reflect organizational choices. Specifically, Hill (1970:95) suggests that an increase in communal structures at sites is evidence for population aggregation, and that decreases in these types of structures indicate an emphasis on social integration.

According to Hill's model (1970:95), social integration is necessary during times of resource depression. Integration provides a larger labor pool to contribute to a bountiful harvest. Social integration results from the need to organize these larger numbers of people and to promote social cohesion within the community. Hill (1970:105-109) also suggests that any one particular integrated community can be short lived, but integration and aggregation will continue to be important over time. In other words, concentrated, highly socially integrated communities may not endure for long periods at a single site, but people will form new integrated communities in others areas of the landscape. Ultimately, Hill (1970:106) suggests that the scope of integration may include multiple sites, and sometimes it continues to increase even as smaller sites are abandoned and the people are incorporated into a larger community.

Conflict Models

Models that emphasize internal or external strife as the primary factors that motivate aggregation and integration suggest that competition for resources or ritual or political power create a need for the implementation of aggregative and/or integrative mechanisms (Carneiro 1970; Feinman and Neitzel 1984; LeBlanc 1999; McGuire and Villalpando 2001). In these cases, conflict includes a broad spectrum of everything from competition to threats of violence to actual warfare. For example, Stone and Downum (1999) propose that aggregation occurs as a response to perceived or actual political and economic threats to vital and limited resources. They advocate an alternative to "Boserupian" models (i.e., when increasing population growth results in increasing agricultural productivity [see Boserup 1965 and McGuire 1984 for a discussion of the original model]). Using Wupatki pueblo as a case study, Stone and Downum (1999) state that agricultural intensification was difficult in this area of northern Arizona because of the lack of water (210 to 280 mm annual precipitation) and the relatively concentrated arable land. In contrast, they contend that population aggregation occurred at Wupatki pueblo due to the migration of people into the area.

Aggregation at Wupatki was a response to social strategizing as well as to the concentration of resources favorable for agricultural production in an area that benefited from newly deposited volcanic ash. The area with potential for agricultural production was relatively small, with arable land and water being fairly concentrated, which can lead to extreme resource competition. During the time between A.D. 1065 and 1180, greater numbers of people, an estimated 200, than had ever before inhabited the area were able to establish and maintain control over the arable lands and resources in the Wupatki region. Aggregation at the site served to increase the numbers of people cooperating and participating in a very visible working whole. Population aggregation thereby promoted cooperation and helped decrease external threats to the limited resources by presenting a united front to strangers. The authors refer to the behavior at Wupatki as “extensive farming” because they made the most of their limited resources and farmed areas that were not necessarily the most productive (Stone and Downum 1999:114).

The success of Wupatki agricultural production contributed to population growth and community expansion in the area. In turn, the need to protect valuable and limited resources such as land became increasingly important. In this case, the land control strategies included population aggregation (Stone and Downum 1999:119). Rather than having many relatively autonomous groups of people scattered across the landscape who might pose a threat to one another as possible land competitors, aggregation allowed these groups to come together. Stone and Downum (1999) do suggest that aggregation may occur for a short period, and that an aggregated community would be characterized by social and political communication and cooperation. Concurrently, the land and resource consolidation provided the necessary resources, tangible (e.g., arable land, fuel, labor), social, and political, to carry out farming that is more extensive. Aggregation in this case, as Stone and Downum (1999:119) state, provides "a sociopolitical entity able to back land claims by threat or force." In short, Stone and Downum propose that the people of Wupatki decreased the amount of competition for the consolidated and relatively limited resources in their area by creating a unified aggregated front. This strategy was effective for a group of people faced with the potential for conflict and competition for these resources.

LeBlanc (1999:281-283) suggests that the motivation for large-scale aggregation and social integration was the emergence of "intense warfare" in parts of the Southwest. LeBlanc (1999:288-294) finds that warfare increased dramatically throughout much of the northern North American Southwest during the late thirteenth and early fourteenth centuries. This increase led to population aggregation and social integration by A.D. 1275 and 1325, when almost all residents of the Rio Grande valley and the Colorado Plateau moved from smaller sites into very large aggregated and/or integrated communities (LeBlanc 1999:283).

LeBlanc (1999) provides evidence for aggregation within sites, stating that some communities were actually "hybrids" of several previously autonomous sites (LeBlanc 1999:280-282). LeBlanc (1999:280 and 329) uses the site of Kin Tiel, located on the Colorado Plateau, as an example of a merged site. At the site, two roomblocks were combined architecturally into one by constructing additional rooms that were used to attach two formerly separate units. Even though the two sites became one, they did maintain some degree of autonomy because a spatial separation was maintained in the center of the site (LeBlanc 1999:280). At the same time, LeBlanc (1999) suggests that integrative activities and features, including group construction projects and shared public architecture (LeBlanc 1999:282), were put into place to help newly formed communities deal with their new larger sizes, to limit the amount of internal strife, and to combat the stress of warfare.

Social Coherence Models

Unlike conflict models, some scholars focus on the more peaceful alliance and coherence models to explain population aggregation and social integration (Fish and Fish 1994; Kintigh 1994; Spielmann 1994). These models emphasize the importance of social and symbolic factors. Using Hohokam communities situated on the Salt and Gila Rivers, Fish and Fish (1994) found that, although environmental variables and subsistence strategies are important factors to consider, aggregation and integration are stimulated by social dynamics. The authors (1994:127) suggest that the strength of cooperative social efforts and stable decision-making skills allow communities to weather changing environmental conditions and fluctuating subsistence stress where people at multiple sites cooperated in an aggregated manner. In this area of southern Arizona, community cooperation and aggregation, based on social coherence, allowed for "risk sharing and subsistence exchange," which in turn provided protection, stability, and success for people involved in the group effort (Fish and Fish 1994:127).

Spielmann's (1994) confederacy model is similar to that presented by Fish and Fish (1994). She follows Wilcox (1984) and suggests that population aggregation and social integration result from changes in shared social and political relationships among cooperating groups. Using northern Rio Grande communities as a case study, Spielmann (1994) suggests that there was a balance of power shared by at least eight cooperating communities, or confederacies as she refers to them. Spielmann (1994:48-50) uses ethnographic data from the Huron to create an explanatory model for the sociopolitical aggregation and integration that occurred in the northern Rio Grande pueblos of central New Mexico during the fifteenth century. In this model, aggregated communities become part of a decision-making alliance, which, through a balance of power, promote peaceful interactions and subsequently share control over important resources and trade routes (Spielmann 1994:50).

Kintigh (1994), using communal architecture as his primary data type, suggests that population aggregation and social integration are the result of ties to a broader political and symbolic ideology. His research focuses on sites in the Cibola area, referred to as Chacoan outliers, during the period immediately following the collapse of Chaco (Kintigh 1994:132). Kintigh (1994) cites the merging of these previously unorganized small sites into "…compact clusters of contemporaneous roomblocks…" and the introduction of unroofed kivas into the Ancestral Pueblo areas of the northern desert borderlands as evidence for rapid population aggregation during the late twelfth and early thirteenth centuries (Kintigh 1994:132). Kintigh (1994:138) suggests that aggregation into communities with unroofed kivas was a result of "competitive emulation" between groups to display their affiliation to the Chaco ideology, which displays their connection to this important and dominant community in a symbolic way. At the same time, Kintigh

(1994) points out that altering an easily identified symbol to make it your own reflects your own autonomy as a community or political entity.

Architecture, Aggregation, and Integration

Subsistence, environmental, and social factors associated with aggregation and integration were discussed in the previous section. In the following section, I explore previous research on the architecture of aggregation and integration, specifically the communal architecture of archaeological communities. Architectural evidence has been used to support a variety of models and hypotheses concerning population aggregation and social integration in the ancient North American desert borderlands (Adler 1989a, 1989b; Cameron 1996; Hegmon 1989; Hill 1970; Kent 1990a, 1990b; Kohler and Van West 1996). Many archaeologists look for periods of cultural change defined by variation in architectural forms and community organization to assess the evolution of a community over time. Architectural evidence from the North American desert borderlands is presented in the following section to illustrate how these data have been used to measure degrees of aggregation and integration.

One question that is central to this discussion is how is an analysis of architectural changes used to discuss the occurrence of population aggregation and/or social integration in the archaeological record? Basing changes in population aggregation and social integration on changes in one artifact type can be difficult, because there are numerous political, economic, religious, and social factors involved with change. However, communal structures are useful, not only because they are found throughout the Mogollon region, but also because they have served a variety of roles, including that of community center. For this reason, communal structures can be used to measure degrees of population aggregation and social integration. Researchers have evidence for periods of intensive reorganization that coincide with architectural changes, specifically with changes in communal structures (Adler 1989a, 1989b; Anyon and LeBlanc 1980; Hegmon 1989; Hill 1970; Lipe and Hegmon 1989). Archaeologists working in the desert borderlands have presented a variety of explanations for the presence of communal structures and their measurement of aggregation and integration. This section considers three of the primary models used to relate changes in communal architecture to aggregation and integration.

Population Models

Several archaeologists have suggested that the presence of a communal structure is tied to population density (Adler 1989a, 1989b; Johnson 1982). In these types of explanations, the presence or absence of communal structures is indicative of the size of a community's population and the level of social integration present at a particular site. Adler (1989a, 1989b) suggests that communal structures are added to a site once the population reaches a certain level. Using data collected from the HRAF representing 28 ethnographic groups from around the globe, Adler (1989b:39-41) found that once the population of a community reaches approximately 200 individuals (which may be a result of population aggregation, although he does not discuss this phenomenon), a communal structure is constructed. In Adler's model, population levels are directly correlated with the presence of an integrative structure. In this model, communal structures serve a specific function, which is to integrate a population of individuals. Unfortunately, Adler does not address the variation in different types of communal structures since he is interested in the general principle provided by his equation. While the model attempts to explain the presence of communal structures at some sites, it does not address those structures found at sites with populations of less than 200, sites with multiple contemporary communal structures, or sites consisting of only isolated communal structures.

Steward (1937:96-99), in a widely cited article, uses the ratio of communal structures to the number of rooms to support a model of increasing integration in the Ancestral Pueblo area. Estimating site population levels using the number of rooms, Steward recognizes a trend towards fewer communal structures to serve larger numbers of people. By bringing more people into fewer structures, the people become increasingly integrated rather than segregated. Steward's model is relatively incomplete since it does not offer an explanation as to why integration occurs.

Creamer (1993) proposes a population model for Arroyo Hondo, finding that the increasing number of communal structures corresponded with increasing levels of aggregation. At the same time, the construction of one structure within an enclosed plaza corresponded with a push towards social integration. When northern New Mexico witnessed a period of significant aggregation during the early A.D. 1300s, as people living in other areas of the southwestern United States migrated into northern New Mexico and elsewhere due to severe environmental conditions, integration in these northern areas occurred (Creamer 1993:10). As greater numbers of people congregated at sites along the Rio Grande in northern New Mexico, there was an increase in the number of communal structures at the sites.

Reid's (1989:88) discussion of communal structures looks to internal community dynamics to provide explanations for their presence. Reid's model focuses on the response of people to increasing sedentariness. Groups that become increasingly sedentary deal with the consequences of both sedentariness and with other issues related to population aggregation. These changes require people to make appropriate alterations to their communities and social networks, but they do so within the existing cultural context. Using the site of Grasshopper pueblo, located in eastern Arizona along a tributary of the Salt River, Reid provides evidence for long-term changes in aggregation and integration at the site. Reid proposes that communal structures are added to sites as communities become increasingly stable after periods of rapid population aggregation. According to this model, increases in either the number of communal structures or the elaboration of such structures reflect increases in population aggregation.

Social Models

Hill (1970) provides an alternative model to explain the presence of communal structures. In his analysis of Broken K pueblo, a site located in east-central Arizona on the Little Colorado River and dating between A.D. 1100 and 1300, Hill (1970:7, 107) proposes that the need for aggregation and integration is the result of population growth and a social system based on inheritance. At Broken K pueblo, Hill (1970) uses stylistic attributes in internal features to identify architectural variation. He uses this variation to provide evidence for the existence of two large corporate groups aggregating at the site.

Each of these groups controlled resources and was associated with a communal structure. In this study, Hill (1970:19) proposes that communal structures are intricately linked to the integration of village economics, in that the two autonomous aggregated groups share and distribute the resources during ceremonies conducted at their communal structures.

The residents of sites like Broken K were organized into "corporate groups," and architecture and pottery styles associated with each group displayed stylistic similarities (Hill 1970:107). Hill's explanation uses stylistic evidence and variation or the lack thereof to explain the ways in which people living at Broken K organized themselves. He compares the Carter Ranch site, also located in eastern Arizona, to Broken K in order to establish the degree to which integration was present at these two sites. He concludes that aggregation occurred at both of these sites, although at different times. The conditions that precipitated the kind of population division evidenced at Broken K are not discussed. Citing Longacre (1970), Hill (1970:89-90) makes the argument that with population aggregation into an area or a site there is an increase in the degree of integration. Hill finds evidence for what both he and Longacre refer to as ritual integration in the presence of Great Kivas at Broken K pueblo and elsewhere in the Hay Hollow Valley of eastern Arizona. The Broken K pueblo communal structures reflect the importance of "intra-village integration" and can be associated with social components of the site stylistically and spatially, allowing visibility of corporate groups. Hill's case study provides a more detailed analysis of communal structures than Adler's does, in that he examines individual structures.

Previous research has provided a wide range of definitions of and explanations for population aggregation and social integration. Causal factors include population growth, environmental factors, and changes in economic conditions for a variety of reasons. A general summary of all of the explanatory models for aggregation and integration is provided at the end of this Chapter, as is a discussion of the most useful perspectives as they relate to the data presented in this thesis. First, however, two examples of previous research identifying aggregation and integration in the archaeological record using architecture, specifically communal structures are provided below.

Archaeological Examples of Communal Architecture, Population Aggregation, and Social Integration

As previously mentioned, architectural evidence is one of the most durable artifacts to which we have to assess ancient social organization including population aggregation and social integration. The structures within which people live reflect sociopolitical organization, ideology, and needs of the people who resided within their walls (Gilman 1983, 1987; Hegmon 1989; Rapoport 1969, 1982). Specifically, communal structures allow researchers to understand the aggregative and integrative forces from which they resulted. Archaeological excavations at two northern Rio Grande pueblos provide examples of the use of communal structures to measure aggregation and integration in ancient communities.

It was a rapidly aggregating population that established Pot Creek pueblo (Figure 2.1) in A.D. 1230. The site is located in the northern Rio Grande valley of New Mexico below the Sangre de Cristo Mountains (Creamer 1993:xi). Evidence for aggregation is found in the construction history of the site, which grew by accretion;

clusters of rooms were built around the original roomblock, and there does not appear to have been a premeditated, single episode construction strategy (Crown 1991). During the first 70 to 80 years of occupation, inhabitants constructed at least two small kivas at the site. These structures are associated with specific roomblocks and are partially enclosed within the walls of these clusters (Crown and Kohler 1994). The fact that these kivas are small and have limited accessibility provides further support for Pot Creek pueblo as an aggregated settlement, because these structures seem to be serving small segments of the population, rather than people from the entire site.

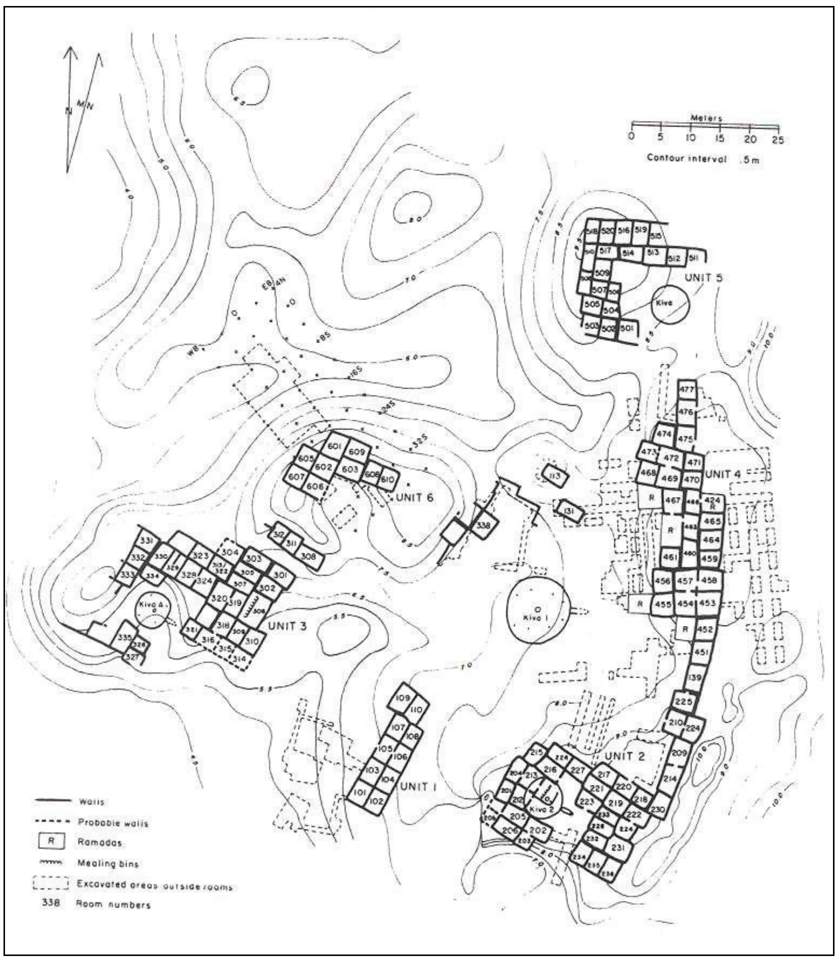


Figure 2.1. Pot Creek Pueblo, A.D. 1268 to 1320 (Crown and Kohler 1994).

The social organization at Pot Creek changed during the final phase of occupation from A.D. 1310 to 1320. In 1318, the people of Pot Creek constructed a large Great Kiva (Kiva 1 on Figure 2.1) in the central plaza at the site (Crown and Kohler 1994). The construction of this facility appears to have been largely symbolic, as it was built shortly before a period of rapid depopulation at the site. Hegmon (1995) provides a possible explanation for this phenomenon when she points out that increased ceremonialism and ritual behavior are characteristic of integrated societies because they reinforce social identity and cohesion (see also Adler 1989a, 1989b; Powell 2001). Kiva 1 is indicative of at least a symbolic effort to show a socially integrated community. I refer to this effort as symbolic, because it is unclear if the facility was ever used or even completed by the people of Pot Creek (Crown 1991:310; Wetherington 1969).

Arroyo Hondo, a large, multi-component northern Rio Grande pueblo, provides an additional example of how communal structures can be used to measure population aggregation and social integration at an archaeological site. As is the case at Pot Creek pueblo, there is architectural and construction evidence for a rapidly aggregating population establishing Arroyo Hondo from A.D. 1300 to 1340 during a period of occupation that researchers have labeled Component I (Figure 2.2) (Creamer 1993:xiii). There are 13 plazas and five kivas that date to Component I. While the construction of each part of the site occurred in a discernable order, all of the communal structures have overlapping dates. Creamer (1993:57, 88-91) suggests that they were contemporary for some period although they were not built at the same time. An evaluation of the construction history and the kinds of structures built at Arroyo Hondo reveals that, like

Pot Creek, the site growth via population aggregation occurred at the site. While the initial inhabitants founded the first roomblock and built a plaza and a kiva at the center of the site, others soon joined them (Creamer 1993:89). Over time, the rapid addition of roomblocks, plazas, and communal structures, each added to the initial roomblock and to other areas of the site, provides evidence for population aggregation at the site. Additional evidence for aggregation, as opposed to integration, is that each of the additional roomblocks, plazas, and communal structures, while similar to the founding ones, had its own unique architectural style.

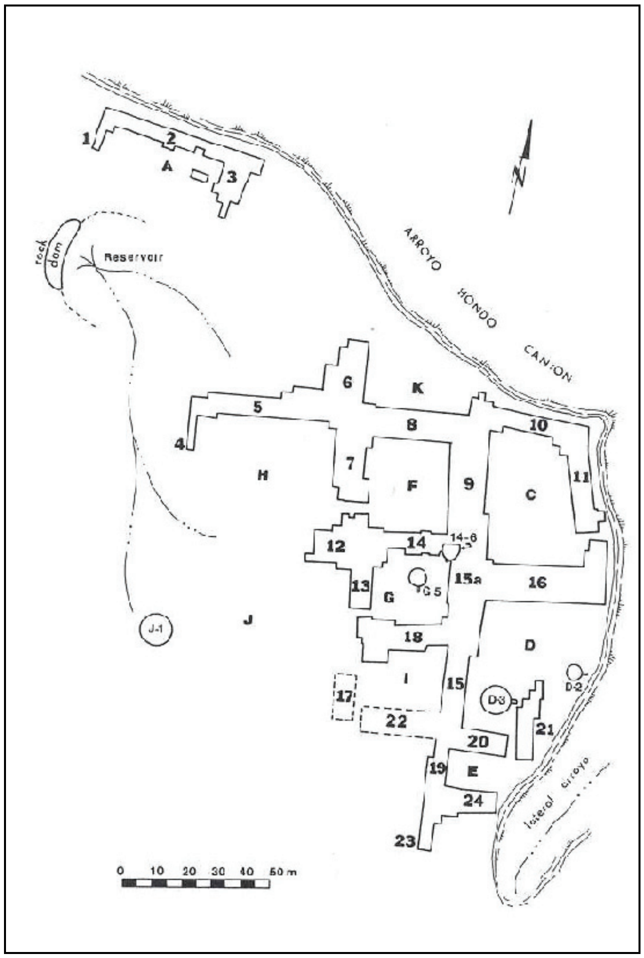


Figure 2.2. Arroyo Hondo Component I Site Plan (Creamer 1993).

An example of the architectural diversity identified at Arroyo Hondo includes the fact that each roomblock at Arroyo Hondo enclosed, or partially enclosed, a plaza (Creamer 1993:57-107). The diversity evidenced at the site also includes the fact that some plazas had communal structures within them, while others did not (Creamer 1993:57-107). Arroyo Hondo's architectural features therefore mirror the population aggregation, or relative social segmentation, of the population. The aggregated community that resided at Arroyo Hondo did not last long, and the site appears to have been largely abandoned within half a century of its establishment.

Reoccupation did occur at the site referred to by Creamer as Component II (Figure 2.3), but only in one area of the site. The roomblocks surrounding plazas C, D, and F were those reoccupied during Component II (Figures 2.2 and 2.3) (Creamer 1993:6-9). The 10 roomblocks, consisting of both new and remodeled rooms along with a single communal structure, represent the architecture of Component II (Creamer 1993:6-9). Architectural data from the site suggest that the population that returned to inhabit Arroyo Hondo was much more integrated than the one that inhabited the site during Component I. For instance, there are three plazas associated with Component II, but only one is enclosed and it contains the only communal structure (Creamer 1993:40). The location of the communal structure is functional and symbolic in that it facilitates integration by requiring participants to enter the plaza and the kiva through an enclosed space (Crown and Kohler 1994:113). Having only one structure to serve the entire community helps to symbolize and reiterate group unity (Crown and Kohler 1994:113; Dozier 1970:209-210).

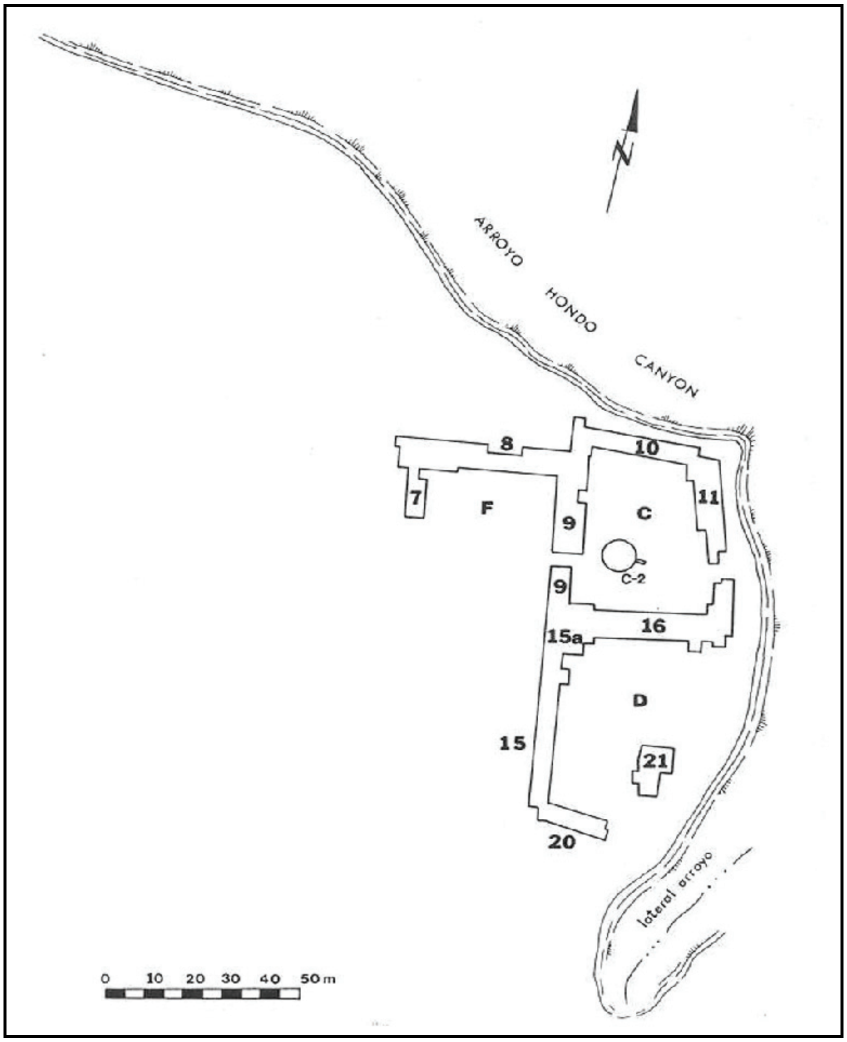


Figure 2.3. Arroyo Hondo Component II Site Plan (from Creamer 1993).

Architectural data from Pot Creek pueblo and Arroyo Hondo provide examples of how communal structures can be used to measure aggregation and integration. Site construction histories and other architectural data contribute to a more complete picture of population aggregation and social integration. However, in both of these examples, the communal structures offer the most revealing information about organizational changes that occurred at the sites. In these cases, the sites formed via population aggregation and the presence of multiple communal structures can be used as an indicator of this aggregation. Social integration was also part of the occupation histories of these sites. The construction, contemporaneousness, and use of the Pot Creek and Arroyo Hondo communal structures provide evidence for social integration in these communities as well. At Pot Creek, integration, as revealed by the construction of the large Great Kiva at the center of the site, became important during the later portion of the site's occupation. Integration at Arroyo Hondo occurred when an abandoned, initially aggregated site was repopulated with people who only used one of the five communal structures initially built at the site.

Chapter Summary

The previous research summarized in this chapter provides a variety of information that is useful to discussions of population aggregation and social integration in the desert borderlands. Many scholars emphasize the impact of fluctuating population size on population aggregation and social integration (Adler 1989a, 1989b; Fish and Fish 1994; Fish et al. 1994). Others scholars (Adler 1994; Leonard and Reed 1993; Minnis 1985) emphasize the role that subsistence strategies employed by ancient groups play in whether a community is aggregated or integrated. Still others (Halstead and O'Shea 1989) consider the physical environment to be the defining factor in the organization of communities. Most recently, LeBlanc (1999) and others (Hard and Roney 2002; Stone and Downum 1999) have suggested that external conflict and/or threats (real or potential) can lead to organizational changes, which emphasize cooperation, specifically aggregation and social integration. Regardless of what causes the changes and patterns these scholars document, many have chosen to use the architecture of a site to provide evidence for such changes (Adler 1994; Crown and Kohler 1994; Hard and Roney 2001; Rautman 1995). For this reason, Chapter 2 has also provided a brief review of literature that focuses on communal structures and their relationship to aggregation and integration.

For the research presented in this thesis, one of the most important contributions to the discussion of population aggregation and social integration is provided by Hill (1970). Unlike many other researchers, who tend to either use the two terms interchangeably or suggest that the two do not describe community organization, Hill differentiates between aggregation and integration, illustrating that the two can occur independently and simultaneously. As discussed in Chapter 1, for my research into communal structures, I also view these two phenomena as individual forms of community organization motivated by different factors. At the same time, Adler (1989) and others (Adler and Wilshusen 1990) suggest that population aggregation may in fact bring about the need for social integration. I am interested in the link between population increase, via internal growth or density increases, and aggregation and integration. Ultimately, I want to know if and when these changes are manifested architecturally in the archaeological record, specifically in the construction of communal structures at Mogollon sites.

I suggest that communal structures can provide evidence for both aggregation and integration and that multiple factors, but specifically population increase leading to social change, external threats, and surplus goods are the causal factors related to population aggregation and social integration in the Mogollon region. I also suggest that following

Adler (1989), initial population aggregation is frequently replaced by integrative mechanisms in an effort to maintain a sense of community, just as we see in contemporary society. I also propose that until surpluses are available, and specific members of a community gain control of those surpluses, integration will be the optimal form of community organization. Chapter 3 provides a detailed discussion of the environmental, cultural, and archaeological characteristics of the Mogollon region, which are also contributing factors to organizational decisions made by communities.

CHAPTER 3

AN ENVIRONMENTAL, CULTURAL, AND ARCHAEOLOGICAL BACKGROUND FOR THE MOGOLLON REGION

The data used in my analysis of aggregation and integration are derived from the communal structures associated with the ancient Mogollon culture of the desert borderlands. As stated in Chapter 1, this area was selected as the case study for the analysis for three primary reasons. First, there is evidence for a long occupational history, which includes communal structures, associated with the Mogollon region. Second, sites from a wide variety of periods have been excavated in the Mogollon region. Third, there is information available for many parts of the area.

This chapter provides detailed information about the environmental, geographic, cultural, chronological, and archaeological characteristics of communal structures in the Mogollon region. These data are important to this research for several reasons. First, the ecological and geographic information allow the reader to develop an understanding of the location of the Mogollon region and the environmental diversity that exists within it. Environmental and geographic factors play a role in the economic, social, political, economic, and religious characteristics of a culture. Second, the Mogollon region is divided into several sub-areas (discussed in a subsequent section of this chapter), each of which is unique in its own way. I conducted an analysis of communal structures from all of the Mogollon areas to determine if the unique nature of these areas is simply material or if it extends to forms of social organization associated with the areas. Third, the analysis presented in Chapter 5 follows a chronological order based on a combination of chronologies proposed by archaeologists who have worked in the Mogollon region. Finally, although there are certain archaeological characteristics that can be used to include or exclude sites from the category "Mogollon," there is a great deal of diversity in the region, and this variability is an important part of the architectural analysis presented in Chapter 5.

Defining the Mogollon

In 1931, at the third annual Pecos Conference, the term Mogollon was used to differentiate the cultural remains associated with this portion of the North American Southwest (Woodbury 1993). Participants decided to use the term Mogollon, from the dominant mountain range in the area (previously named after an eighteenth century New Mexican governor), as a label for this region (Cordell 1997:170). Since 1931, the archaeological remains in the Mogollon region have been described, defined, and discussed by a variety of scholars.

The area traditionally ascribed to the Mogollon culture is quite large (Figure 3.1). Cordell (1997:202) describes the Mogollon area as "more than twice the size of even the most generous estimates of the Colorado Plateau country occupied by the Ancestral Pueblo [Anasazi]." While several sub-areas within the Mogollon region have been subject to rigorous surveys and excavations, other areas have had relatively little research. Cordell (1997:204) has also emphasized that as more research is conducted in the area, the Mogollon culture becomes increasingly well defined. According to many of today's definitions, the Mogollon region is now thought to include southwestern Texas, most of southern New Mexico, parts of southeastern Arizona, and portions of northwestern Chihuahua, and northeastern Sonora, Mexico (Figure 3.1). Many parts of this region are extremely rugged and are geographically, topographically, and vegetatively diverse. Mountains and basin and range dominate the Mogollon region (Brown 1994; Cordell 1997; Martin 1943:6-7; Wheat 1955:1).

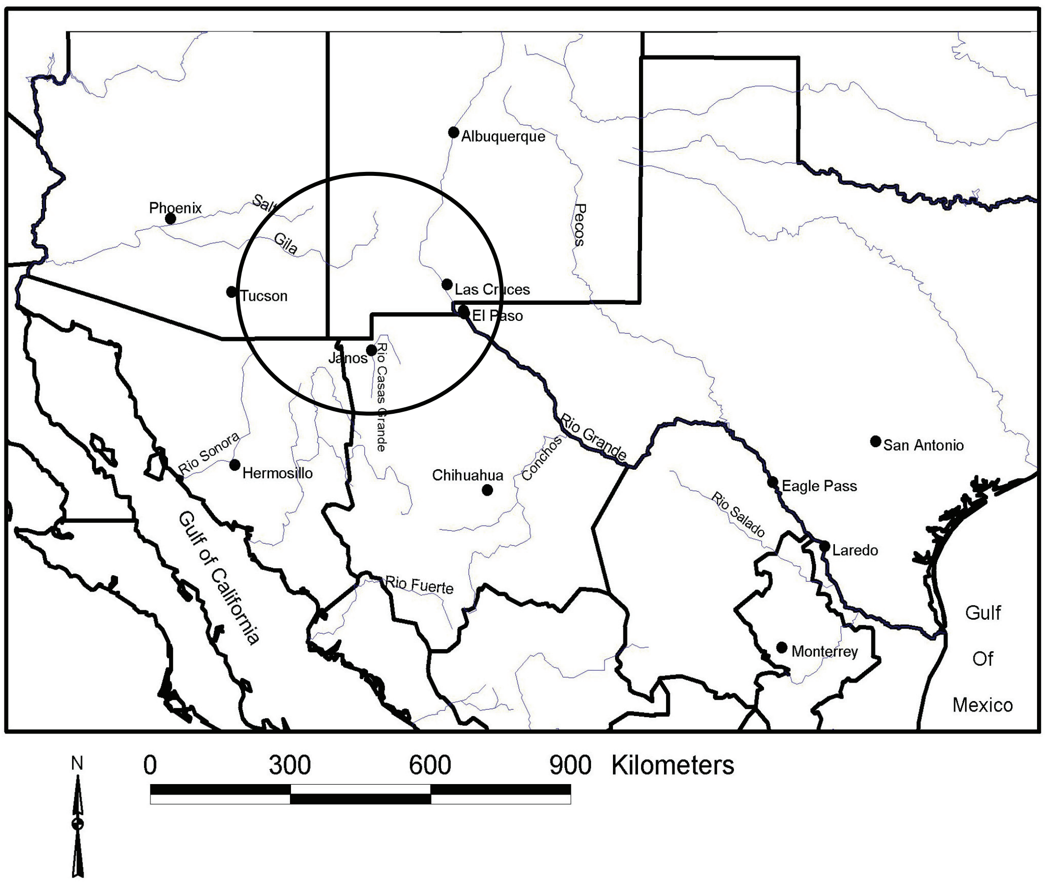


Figure 3.1. Map of the North American Desert Borderlands (From Vierra 2005).

Along with the ecological variation characteristic of the region is a great deal of ancient cultural diversity. As a result, the Mogollon region is divided into multiple sub-areas (Figure 3.2; Cordell 1997:202-203; Haury 1985; Wheat 1955:8), which include but are not limited to the Chihuahuan (Gladwin and Sayles 1936), Forestdale

(Breternitz 1956, 1959; Haury 1940, 1985; Wheat 1954, 1955), Jornada (Lehmer 1948), Mimbres (Haury 1936; LeBlanc 1983), Pine Lawn (Martin and Rinaldo 1947, 1950b; Martin et al. 1940, 1949, 1957) and Reserve (Nesbitt 1931), Cliff/Gila (Cosgrove 1947), Grasshopper (Graves et al. 1982; Haury 1941; Reid 1974, 1989), and San Simon (Sayles 1945). The primary factor motivating these divisions is that the human groups who occupied the regions produced distinct artifacts and were somewhat geographically isolated from one another by the natural topographic and geographic characteristics. Cordell (1997:203) provides an excellent overview discussion of these divisions.

Defining the Mogollon: The Environment of the Region

The Mogollon region straddles two zones, which include the basin and range (an area with isolated mountain ranges and flat basin areas) and the southern Rocky Mountains (Brown 1994; Cordell 1997; Martin 1963: 6-7; Wheat 1955:1). A discussion of the physical environment associated with the Mogollon region is important, because the environment affects the organizational strategies of the people who lived in these areas. Variations across the physical environment may affect the organizational strategies of people, which include aggregation and integration, the focus of the research presented in this thesis.

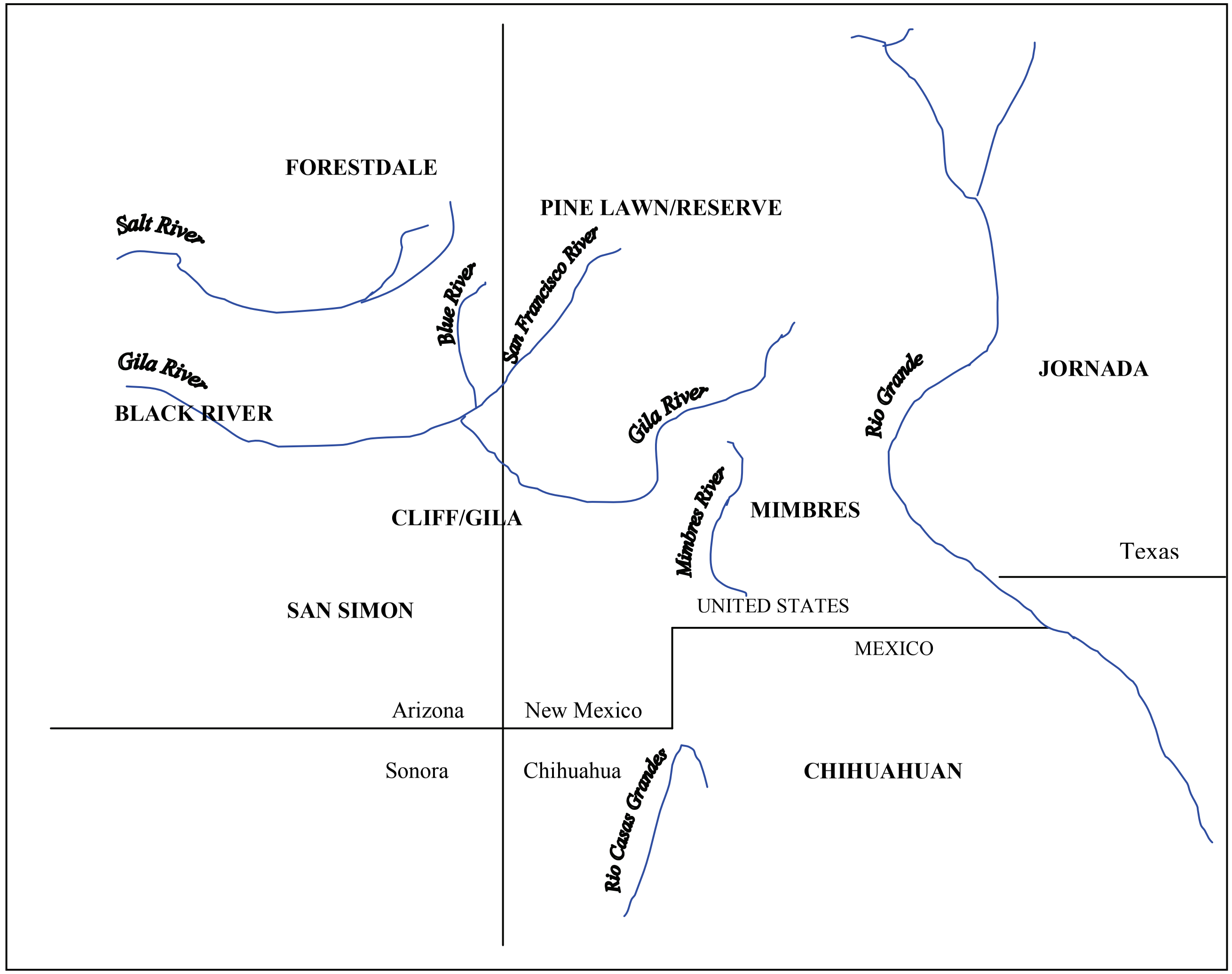


Figure 3.2. Mogollon Divisions and Major Rivers (after Wheat 1955).

The Chihuahuan desert of southern New Mexico, southeastern Arizona, and northern Chihuahua, Mexico, ranges from relatively low (1000 ft above sea level) to quite high in elevation (11,000 ft) (Brown 1994; Cordell 1997:201). The area of the Chihuahuan desert within which much of the Mogollon region is located is characterized as the driest area of the Mexican Plateau located east of the Sierra Madre Occidental (Brown 1994; Gabin 1977; Martin 1963:6-7, 71). It is within the northern part of this vast desert that ancient inhabitants constructed the communal structures used in this analysis of population aggregation and social integration.

Much of the Mogollon region consists of mountains associated with the Colorado Plateau (Wheat 1955:3-4). The Mogollon and White Mountains are the central and most rugged mountain areas of the Mogollon region and climb to an elevation of 3,427 m/11,000 ft (Brown 1994; Cordell 1997:202; Martin 1979:61; Wheat 1955:3-4). The Black, San Francisco, Tularosa, and other smaller ranges are additional mountainous areas and help to account for some of the elevation, topographic, and vegetative variation associated with the area (Wheat 1955:3-6). Elevation differences translate to variation in local vegetation and annual precipitation. The flora and fauna of the area will be discussed below, but variation in precipitation, vital to the lives of all human beings is included here.

Heavily forested mountain areas of the Mogollon region (9500 to 11,000 ft) receive an annual precipitation of 30 to 90 inches (Brown 1994). Runoff from moderate to heavy winter snows can last into the spring and early summer months (Brown 1994; Cordell 1997:39; Gabin 1977). At 8000 to 9500 feet, annual precipitation drops significantly to 25 or 30 inches, and it drops again to 20 to 25 inches at 6500 and 8000 feet (Brown 1994; Cordell 1997:39; Gabin 1977). Between 4500 and 6500 feet in the piñon pine and juniper woodland areas, annual precipitation ranges from 10 to 20 inches (Brown 1994). The desert basins (1000 to 4500 feet) associated with the Mogollon region are dissected by streams and rivers (Brown 1994; Gabin 1977). Basin areas consist of desert grasslands, sand dunes, playas, and river basins. Average precipitation in these areas drops to less than eight inches and up to 12 inches a year (Brown 1994; Cordell 1997:39; Gabin 1977). The majority of the precipitation in the low-elevation areas comes in the form of snowmelt from the mountainous areas and during the July to September monsoon season (Brown 1994; Cordell 1997).

Permanent to semi-permanent water in the area includes the Rio Grande and Mimbres River in southern New Mexico, the Rio Casas Grandes in northern Mexico, the San Francisco and Gila Rivers in southern New Mexico and Arizona and the Blue and Salt Rivers in eastern Arizona (Figure 3.2). The average flows of the rivers vary greatly from year to year and from season to season (Gabin 1977). During the spring season, many of the rivers in the Mogollon region overflow, and water spills out onto portions of associated floodplains. During the hot summer months, rivers can be reduced to dry or nearly dry watercourses. Today, large-scale irrigation, which includes the use of dams in both the United States and Mexico, has had an enormous impact on the integrity, appearance, water flow, and ability of the rivers to flood (e.g., McNamee 1994). These fluctuations likely affected the ability of the Mogollon people to establish and maintain aggregated and integrated communities for extended periods, although these are not part of my analysis. The ecology and environment of this part of the Chihuahuan desert are discussed in this section because they reflect plant and animal diversity. This biodiversity is important to consider; it is an additional factor affecting aggregation and integration. People living in the Mogollon region appear to have established their communities in a variety of areas with access to resources, including but not limited to, arable land, water, plants, and game animals (Cordell 1997).

Flora

Plant life within the Mogollon region is diverse, largely due to changes in elevation and availability of water. Short grasses and desert shrubs occur in basins at the lowest elevations (below 900 m/2890 ft), while alpine areas dominated by spruce and fir trees are found at the highest elevations (to 3427 m/11,000 ft) (Brown 1994; Cordell 1997:202; Martin 1963:66-70). Piñon, oak, and juniper woodlands, ponderosa pine, aspen, and Douglas fir dominate the elevations between the two extremes. These middle elevation arboreal areas are also the locations for many ancient habitation sites, although many others are situated in the desert areas, especially near water sources (e.g., washes, springs) (Cordell 1997:202; LeBlanc and Whalen 1980; Lekson 1982; Wheat 1955). Cottonwoods and willows can be found along the banks of rivers (e.g., Mimbres and Gila rivers) and some drainages in the Mogollon region (Brown 1994). The desert basins are found in the lowest areas (1000 and 4500 ft) where grasses, yucca, ocotillo, cholla, and various other cacti reside (Brown 1994).

The diverse plant life found in the lower elevations of the Mogollon region includes cat-claw, creosote, saltbush, gramma grasses, and mesquite. Cacti and succulents, common in both lower and upper elevations, include ocotillo, prickly pear cactus, cholla, yucca, and agave. Domesticates, associated with archaeological communities, are primarily found in the lower and middle elevations in the archaeological record, but some domesticates have been identified in upper elevations (Haury 1985; Martin 1963:34-56). Domesticates include, but are not limited to, corn, beans, and squash.

Fauna

The faunal diversity found in the Mogollon area is also influenced by the diversity of ecological zones. For example, most large game animals, including mule deer, white-tailed deer, bighorn sheep, and pronghorn antelope, are often found at higher elevations (Cannon 2001). However, deer and antelope are found in the desert areas as well. Coyote, fox, bear, bobcat, and mountain lion represent the majority of the carnivorous animals, and as with large game, the latter three are usually found in the more mountainous areas of the region. Bison and the domesticated dog have also been recovered from archaeological sites in this area (Cannon 2001; Haury 1985:147; Sanchez 1996).

Although larger game animals are an important part of the Mogollon archaeofaunal assemblages associated with aggregated and integrated communities, some medium and small animals were central to the subsistence systems. Medium animals, which dominate most archaeofaunal assemblages, include jackrabbit and cottontail rabbit (Schmidt 1999; Shaffer 1992; Shaffer and Schick 1995; Stein 1962; Szuter and Gillespie 1994). Small animals identified in archaeofaunal assemblages, but for which there is no evidence for their inclusion in the diet (e.g., no cut marks or burning), are pocket gophers, pocket mice, kangaroo rats, and cotton rats (Cannon 2001; Schmidt 1999; Schmidt and Nisengard 1998, 2001; Shaffer 1992; Shaffer and Schick 1995; Stein 1962).

Birds may have played a role in subsistence systems, but the majority of evidence from sites in the region suggests that these animals were instead an important part of the socio-religious lives of ancient Mogollon peoples (Burden 2001; Creel 2000; Haury 1985). At some sites (e.g., Old Town and NAN Ranch ruins both located in southwestern New Mexico), the bones of raptors and other birds have been used as termination objects, which are objects used as burial items in structures that are purposefully destroyed (Anyon and Creel 2002). These items appear to have been placed into communal structures upon their abandonment (Anyon and Creel 2002; Creel 2000). In addition, bird depictions are commonly found on ceramic vessels recovered from Mogollon sites. Birds found today, and in the archaeofaunal assemblages of the Mogollon region, include roadrunner, Gambel's quail, Harlequin quail, owls, hawks, and turkey (Anyon and LeBlanc 1984; Cannon 2001; Haury 1985; Sanchez 1996; Schmidt 1999; Schmidt and Nisengard 1998). Near waterways, ducks and geese are relatively common as well (Sanchez 1996; Schmidt 1999; Schmidt and Nisengard 1998).

Reptiles and amphibians are common throughout the Mogollon region today and in the archaeofaunal record. It is unclear if the reptile remains recovered from sites are part of the ancient diet or if they are a more recent intrusion, due to an absence of evidence for the human manipulation (e.g., burning and cut marks). The arid environment of the Chihuahuan desert, within which are archaeological remains associated with the ancient Mogollon culture, provides an excellent habitat for a wide variety of lizards, venomous and non-venomous snakes, and turtles, although turtles are more commonly found near well-watered areas.

Summary

The plants and animals discussed in this section are found in varying ubiquities in faunal and floral assemblages from Mogollon sites, largely dependent on site elevation. The faunal and floral data provide evidence to suggest that people living in the Mogollon region relied primarily on locally available resources (Cannon 2001; Haury 1985; Minnis 1985, 1992; Schmidt 1999; Schmidt and Nisengard 1998, 2001). These data are important to the study of human aggregation and integration because floral and faunal availability has important consequences for the people who established their communities in the Mogollon region. As previously discussed, aggregation may initially occur in resource rich areas, but if and when local resources become scarce or become increasingly concentrated, the organization within the community may change as well (e.g., population dispersal or integration). For this reason, it is important to understand the environmental factors that played a role in population aggregation and social integration in the Mogollon region.

Subsistence strategies, including harvesting wild plants and animals, and food production, are affected by population aggregation in various areas of the region and by changing degrees of social integration within Mogollon communities (Cannon 2001; Cordell 1997; Minnis 1985; Schmidt and Nisengard 1998). Variations in the physical environment should affect the organizational strategies (e.g., aggregation and integration) of the Mogollon people; most researchers make a distinction between “the Mountain Mogollon and the Desert Mogollon” based on ecological variables (Bussey 1972:19). Previous research has demonstrated that, in general, changes in annual precipitation and resource availability have an impact on aggregated and integrated communities (Anyon and LeBlanc 1980, 1984; Cordell 1997:97; Minnis 1985; Schmidt and Nisengard 1998, 2001).

Defining the Mogollon: Culture and Geography

One question posed by archeologists is whether the Mogollon region is a geographic entity, an overarching cultural category, or both (Cordell 1997:202-210; Martin 1979). The region includes architectural diversity and other artifacts that can be difficult to categorize as something from another culture area (e.g., Hohokam or Ancestral Pueblo) (Haury 1936). Defining a Mogollon “culture area” is a complex issue because there are a number of geographic divisions within the area, as there are in most cultural areas. In many ways, the Mogollon region is defined by what it is not (Cordell 1997:169-172).

At pit structure village sites like Mogollon village, Harris site, and Bear ruin, Haury (1936, 1950, 1985:xviii) found materials, specifically red and brown coiled ceramics that he could not characterize as Hohokam or as Ancestral Pueblo [Anasazi] (Haury 1936). Haury (1985:xviii) was cautious about differentiating a cultural group on ceramics alone. However, when he looked at the ceramic and architectural diversity in Mogollon pueblo communities that were contemporary with the Hohokam and Ancestral Pueblo sites, he found that people in the region produced unique pottery, differed from the other areas in their architectural styles, and had unique burial practices unlike those identified at Ancestral Pueblo and Hohokam sites. The pottery types Haury (1936) identified at these sites were very different, in material and design, from those he had seen in contemporary northern or western culture areas. As a result, Haury and other researchers decided that the pre-A.D. 1000 period in the Mogollon culture area was different from the Ancestral Pueblo [Anasazi] to the north and the Hohokam to the west (Bradfield 1931; Cosgrove and Cosgrove 1932; Gladwin and Gladwin 1934; Haury 1936, 1950).

Haury (1936, 1985:xvii) and others considered that the differences they saw among Mogollon, Hohokam, and Ancestral Pueblo [Anasazi] sites could be the result of environmental diversity, specifically in resource variation and the relative geographic isolation of people living in the Mogollon region (Bussey 1972; Martin 1979:62; Wheat1955:7). Ultimately, however Mogollon ceramic types, in addition to architectural evidence, human cranial morphology, specifically occipital deformation resulting from cradleboard use, and inhumations, particularly a preference for flexed burials, provided evidence for the establishment of the Mogollon as a distinct southwestern cultural entity (Bussey 1972; Haury 1936).

Not all archaeologists working in the Mogollon region agreed that a single cultural designation was appropriate for all sites within the area (Cordell 1997; Haury 1936; Martin 1979; Martin and Rinaldo 1947; Wheat 1955). Martin was one of the first processual archaeologists to work in the Mogollon region (Cordell 1997:54). Martin's work at the SU site, located in southwestern New Mexico, revealed notable architectural differences among pit structure sites in the Mogollon region, specifically in construction material, site structure organization, and the presence and absence of large communal structures (Martin and Rinaldo 1947). Haury (1936), Martin (1979), and other researchers (Cordell and Plog 1979; Di Peso 1979; Wheat 1955) have stated that there is enough variability within the Mogollon region to sub-divide it even further.

For many years, some researchers suggested that the Mogollon culture was considered the "country cousin" of the Ancestral Pueblo people or at least was greatly influenced by their architectural and ceramic styles (Bussey 1972; Cordell 1997: 206; Gladwin and Gladwin 1934; Haury 1936; Martin 1979; Wheat 1955:206). This idea was supported by the fact that while the Mogollon had pueblo architecture and black and white pottery similar to that associated with Ancestral Pueblo communities, they were not as elaborate as those found in northern Ancestral Pueblo villages (Haury 1936, 1985:xvii). While evidence certainly supported the idea that the architecture and artifacts associated with sites in the Mogollon region are distinct from those in the Ancestral Pueblo, they by no means display a lesser form of architectural design, and some forms, including large communal structures, pre-date Ancestral Pueblo remains (Haury 1936; Martin 1979; Wheat 1955:206). Once researchers decided to identify the Mogollon as a unique entity, they began to develop a chronology that captured changes within the area. Beginning in 1940, archaeologists have suggested a variety of chronologies for the region in general (Wheat 1955) and for specific areas (Anyon et al. 1981; Haury 1940; Reid 1989; Stafford and Rice 1980).

Mogollon Chronology

A review of Mogollon chronology must include at least a brief discussion of the Archaic period of occupation, because they contribute the formation of the Pueblo cultures including that of the Mogollon (Cordell 1997:102). Martin (1979:64-65) and others have stated that the foundation of the subsistence system, which included a mixture of foraged and domesticated foodstuffs, used by the Mogollon people was established as early as 3,000 years ago (Adams and Hanselka 2001; Hard and Roney 1999; Irwin-Williams 1979; Martin et al. 1957; Schmidt and Nisengard 1998). The chronology presented here also includes a detailed summary of the differences in both the architecture and the artifacts between the Pithouse (A.D. 200 to 950/1000) and Pueblo (A.D. 950/1000 to 1400) periods (Anyon et al. 1981; Haury 1985). This summary is important because changes in the material remains associated with a particular group of people are indicative of social transitions, as well as, potentially shown in Mogollon communal structures over time (Anyon and LeBlanc 1980). While there are obvious differences between the Pithouse and Pueblo periods, many scholars have made more finely tuned chronological distinctions within these two broader categories (Table 3.1).

Late Archaic

There are four recognized cultural traditions associated with the Archaic period in the Greater Southwest; these include the San-Dieguito-Pinto, the Oshara, the Cochise, and the Chihuahua (Cordell 1997107-111). Irwin-Williams (1979) suggests that the Cochise were likely the ancestors of the Mogollon. However, it is likely that interactions among Archaic peoples in general could make it difficult to isolate any one "tradition," based largely on tool kits, as *the* quintessential Mogollon ancestor. What is clear is that economic changes that occurred during the Late Archaic period had important consequences during the later Pit Structure periods.

The Late Archaic period marks a change in the ways in which people living the United States Southwest made a living (Vierra 2005). It is during this period that researchers have been able to point to an increase in the number of and use of domesticated plants in the diet of people living in this area (Irwin-Williams 1979; Minnis 1992; Wills 1988). Recent research throughout the Greater Southwest has provided evidence that by the Late Archaic, 1500 B.C. to A.D. 200, domesticates, primarily maize but also cheno-ams, beans, and some squash, had become part of the subsistence base throughout much of what later became the Mogollon region (Adams and Hanselka 2001; Cordell 1997:119-126; Hanselka 2000; Hard and Roney 1999). Late Archaic sites contain evidence for domestication, population growth, increased sedentism, including ephemeral pit structures, and some degree of population aggregation (Cordell 1997; Gilman 1997; Vierra 2005). Examples of this have been identified at sites in northern Chihuahua and southern Arizona (Hard and Roney 1999, 2000, 2001, and 2002a, b; Huckell 1999).

In some cases, Late Archaic sites, such as Cerro Juanaqueña in northern Chihuahua, Mexico (Hard and Roney 1999) and the Costello-King site (Ezzo and Deaver 1996) and McEuen Cave sites in southern Arizona (Huckell 1999), are located on hilltops and on other defensible landforms (i.e., sites with limited accessibility and/or natural barriers). Information from sites dating to this time provides data important for understanding the social and subsistence systems of Late Archaic peoples (Hard and Roney 1999, 2000, 2001, 2002a, b; Huckell 1995, 1999; Schmidt and Nisengard 1998; Vierra 2005). These data provide a foundation for understanding the early development of population aggregation and social integration. Although to date there are no known communal structures that date to the Late Archaic period, there is evidence for population aggregation (e.g., large semi-permanent to permanent communities) at sites, dating to this period (Gilman 1997; Hard and Roney 1998, 1999, 2000, 2001, 2002a, b; Huckell 1999; Schmidt and Nisengard 1998).

There are data that support the idea that at least seasonal population aggregation and/or social integration (e.g., the construction of terraces at Cerro Juanaqueña) was part of the lives of Late Archaic peoples living in northern Chihuahua and southern Arizona (Huckell 1999). Evidence for integration includes architectural and agricultural endeavors that required a community, or part of a community, effort to accomplish (Hard and Roney 1999, 2000, 2002b). While data from Late Archaic sites are currently somewhat limited, there are data to suggest that aggregation and integration began to become important at sites like Cerro Juanaqueña during this period.

Table 3.1. A Sample of Cultural Chronologies Used in the Mogollon Region.

Dates	Mogollon (Wheat 1955)	Pine Lawn (Stafford and Rice 1980:15)	Forestdale (Haury 1940; Haury and Sayles 1947)	Mimbres (Anyon et al. 1981; Nelson and LeBlanc 1986:2)
A.D. 1500				
A.D. 1400			Canyon Creek	Cliff Phase (A.D. 1300 to 1450)
A.D. 1300		Tularosa	Pinedale	
A.D. 1200			Carrizo	Black Mountain Phase (A.D. 1130/50 to 1300)
A.D. 1100	Mogollon 4	Reserve		Classic Mimbres (A.D. 1000 to 1130/50)
A.D. 1000			Dry Village	
A.D. 900		Three Circle	Corduroy	Three Circle (A.D. 750 to 1000)
A.D. 800	Mogollon 3	San Francisco	Forestdale	
A.D. 700				San Francisco (A.D. 650 to 750)
A.D. 600		Pine Lawn	Cottonwood	Georgetown (A.D. 550 to 650)
A.D. 500	Mogollon 2			Early Pithouse
A.D. 400		Archaic (Cochise)		
A.D. 300	Mogollon 1		Hilltop	(Cumbre A.D. 200 to 550)
A.D. 200				
1500 B.C. to A.D. 200			Late Archaic	Late Archaic

The following sections provide summaries for the Pithouse and Pueblo periods as I have organized them for this analysis (Table 3.2). I have chosen to use parts of several previous chronologies, but I have constructed more specific periods (e.g., Early, Middle, and Late Pit Structure) to convey architectural, social, and, sometimes environmental changes that occurred in the Mogollon region. Table 3.2 provides important dates and period designations for the communal structures included in my analysis. In some cases, communal structures were dated in a very general way (e.g., Mogollon, Pueblo), and as a result, I have included date ranges that capture these generalities. The Pueblo period is divided into three categories in Table 3.2; as I discuss in a subsequent section, I separated the Late Pueblo period into Early and Late sub-periods because there are substantial architectural and ceramic differences. Unfortunately, only relative dates were available for many of the structures, and for this reason, I included dates for both the Early Late and Late Late Pueblo periods and a general date range for the Late Pueblo period.

Table 3.2. Mogollon Chronology Used in the Analysis of the Appendix II Communal Structures.

Period Designation	Dates (A.D.)
Early Pit Structure (EPS)	250 to 700
Middle Pit Structure (MPS)	700 to 850
Late Pit Structure (LPS)	850 to 1000
General Pit Structure	250 to 1000
Late Pit Structure to Early Pueblo	900 to 1150
Early Pueblo (EP)	1000 to 1150
Early Late Pueblo (ELP)	1150 to 1300
Late Late Pueblo (LLP)	1300 to 1450
Late Pueblo (LP)	1150 to 1450
General Pueblo	1000 to 1450
General Mogollon	250 to 1450

The Pit Structure Period

The Pit Structure period begins with the introduction of ceramics in the Mogollon region (Cordell 1997:203). Remains associated with this early period of village life are the first to be specifically referred to as the Mogollon culture. At these early habitation sites, researchers (Haury 1936; Wheat 1955) identified "typical" Mogollon pit structures and both decorated and undecorated brown, red, and black-on-white wares (Anyon and LeBlanc 1980; Cordell 1997; Haury 1936; Wheat 1955:35-37). At many sites, the pit structures vary in size and number and do not appear to be arranged in an obvious pattern (Haury and Sayles 1947; Martin 1979:66-67). However, at other sites, settlement clusters within villages display some formal patterning (Creel 1996, 1997a, 1998, 1999a; Haury 1936). Such patterning is not visible at sites dating to the EPS period, but was present by the LPS period at sites in the Jornada region (Whalen 1994), in the Mimbres valley (Anyon and LeBlanc 1984; Bradfield 1931; Creel 1998, 1999; Shafer 2003), in the Gila valley (Lightfoot and Feinman 1982), and at Mogollon village located in the San Francisco valley (Haury 1936).

As previously stated there are several variations of the Mogollon chronology (Table 3.1). In an effort to construct a chronology that I could apply to the Mogollon region in general, I divided the 750-year Pit Structure period into three sub-periods, the Early, Middle, and Late Pit Structure periods. There are distinct architectural features and ceramics associated with each. Although there are a number of similarities between the early and late portions of the period, there are also differences. This chronology also allowed me to consider long-term change, for example, some changes often attributed to the Late Pit Structure period began to emerge during the Middle Pit Structure period. Each of the Pit Structure period divisions is discussed in detail in the following sections.

The Early Pit Structure Period (A.D. 250 to 700). For my analysis of Mogollon communal structures, I have combined the Early Pithouse (or Cumbre) and Georgetown periods/phases into one Early Pit Structure period. I combined the two for three reasons. First, because of the presence of plain and red pottery with no painted pottery at sites dating to this period. Second, one of the earliest Mogollon communal structure, at Winn Canyon, dates to A.D. 310 and this structure marks the beginning of the tradition in the Mogollon region, in that the structure is very similar to others identified at sites dating between A.D. 250 and 700 (Anyon and LeBlanc 1980). The third reason for grouping these periods is that the Georgetown phase (Anyon and LeBlanc 1980) relates specifically to the Mimbres valley and not to the Mogollon region as a whole. In an effort to present a broader picture of aggregation and integration, I consider this early period across the entire Mogollon region.

Early Pit Structure period ceramics. Early Pit Structure period ceramics are relatively crude, consisting primarily of plainware vessels, including bowls and jars (Cordell 1997). Some red pottery was identified at sites in the Mogollon region (Cordell 1997; Haury 1936). No decorated pottery was associated with EPS period sites although some red-on-brown ceramics (i.e., San Francisco red-on-brown) do appear towards the end of the EPS period (Cordell 1997).

Early Pit Structure period community location. Traditionally, archaeologists working primarily in the Mimbres valley suggested that the majority of sites dating to the

Early Pit Structure period were located atop isolated knolls, cliffs, and bluffs (Anyon et al. 1981; Anyon and LeBlanc 1980, 1984; Cordell 1997:202-205; Diehl and LeBlanc 2001; Haury 1940; LeBlanc 1980, 1983, 1999; Linse 1999a, 1999b; Martin and Rinaldo 1950a, 1950b). Defense was the most common explanation for this choice of site location (Cordell 1997:204-205; LeBlanc 1999). Recent research concerning Early Pit Structure period sites has shown a great deal more variability in site location (Gilman 1997; Linse 1999a; Oakes 1999). It can also be suggested that sites situated in defensible locations may be a continuation of a Late Archaic settlement preference evidenced in some areas of the Mogollon region (e.g., Cerro Juanaqueña in northern Chihuahua; Hard and Roney 1999; Oakes 1999; Rice 1980).

In her 1999 study of EPS period sites, Oakes (1999:163) found that during the Pine Lawn phase in the Reserve area (A.D. 200 to 550) site locations included valley bottoms, knolls, ridges, terraces, and isolated locales (see also Rice 1980). Oakes (1999:165) provides elevation data that show Early Pit Structure period communities, on average, were often located 1000 ft lower in elevation than their Late Archaic counterparts, although they continued to be situated at relatively high elevations (Anyon and LeBlanc 1980; Cordell 1997:205-206; Haury 1985; Martin and Rinaldo 1947). The decision to occupy sites at higher elevations may have been influenced by the continuation of the Late Archaic lifestyle.

Early Pit Structure period domestic architecture. In general, Early Pit Structure period architecture consists of pit structures with entries oriented to the east. Communities dating to this period range in size from small (i.e., 6 to 10 structures) to large (i.e., 30 to 60 structures) (Anyon and LeBlanc 1984; Diehl and LeBlanc 2001; Martin 1979:66). Pit structures are commonly shallow (i.e., 0.5 to 1.5 m), circular and oval, and relatively small (i.e., smaller than 5 m in diameter) and, in general, do not appear to have been organized in an identifiable intra-site pattern (Cordell 1997). However, there is architectural variation among sites (Martin 1979:66; Martin and Rinaldo 1947).

As previously stated, Martin's (1979:66) work at the SU site in western New Mexico revealed a wide range of variability in pit structure size and shape (Wheat 1955:13-25; Wills 1991a). Martin (1979) and others (Wills 1991a) have suggested that variation in village patterns reflects differences in mobility patterns and subsistence strategies and represents differences in site use strategies.

It is also possible that the inhabitants of Early Pit Structure period sites resided in their homes on a seasonal, rather than a full-time, basis (Anyon and LeBlanc 1984; Diehl 1990, 1997; Gilman 1983, 1997; Nisengard and Schmidt 2000; Schmidt and Nisengard 1998; Wills 1991a). The lack of hearths and fire pits in many of the early structures suggest that they may have only been occupied during the summer months (Martin 1979:67). Gilman (1995, 1997) has suggested that people living in Early Pit Structure period communities in the San Simon valley practiced residential mobility. Gilman (1997) also suggests that all people who reside in pit structures practice such mobility to some degree.

Early Pit Structure period communal structures. Beginning in the Early Pit Structure period, communal structures are part of some Mogollon communities.

Square, circular, and D-shaped communal structures, many of which are quite large, at least 70 m^2, compared to habitation features, have been identified in the Mogollon region as early as A.D. 310 (Anyon and LeBlanc 1980; Creel and Anyon 2003; Fitting 1973; Haury 1985; Haury and Sayles 1947; Hogg 1977). Traditionally, archaeologists suggested that these structures were Ancestral Pueblo traits that had diffused into the Mogollon area (Haury 1936; Wheat 1955). Subsequent research has provided numerous examples of Mogollon communal structures from sites like the Bluff (Haury and Sayles 1947), Winn Canyon (Anyon and LeBlanc 1980), and LA 19075 (Anyon and LeBlanc 1980) that predate those identified in the Ancestral Pueblo sites of northern New Mexico and Arizona and southern Colorado. Largely based on their size, these have been interpreted as communal structures and are often referenced as "Great Kivas" (e.g., Bluhm 1957; Martin 1979:66-68). Large circular and oval communal structures with "ritual" features (e.g., sipapus; Creel and Anyon 2003) are found at many Early Pit Structure sites throughout the Mogollon region (Anyon and LeBlanc 1980; Cordell 1997:205-206; Fitting 1972; Wheat 1955:57).

EPS period communal structures are commonly large, circular to oval structures, many of which have earthen lobes surrounding them. Very few Early Pit Structure period communal structures are alone on the landscape; instead, they are often at an equal distance between two pit structure villages (Anyon and LeBlanc 1980; Cordell 1997:205; Fitting 1982). The function of isolated communal structures may have been to serve as a meeting place for several small communities. Wheat (1955:13-33) suggests that Early Pit

Structure period communal structures occur at a ratio of one per site; I will present the results of my own analysis of communal structure frequency in Chapter 5.

Early Pit Structure period subsistence. During the EPS period, people living in the Mogollon region practiced a mixed foraging and agricultural subsistence base, with an emphasis on hunting and gathering, particularly during the winter months (Cordell 1997). The lack of hearths within EPS period structures provides evidence for seasonal occupation of Mogollon villages at this time. Subsistence remains recovered from sites dating to this period also provide evidence for a subsistence economy with a dependence on foraged foodstuffs (Cordell 1997:204; Huckell 1995).

The Middle Pit Structure period (A.D. 700 to 850). The Middle Pit Structure period is a time when, although some aspects of the Mogollon culture remain the same (e.g., subsistence strategies; Cannon 2001), others are marked by change (e.g., community size, pit structure shape and size, and the introduction of painted pottery; Anyon and LeBlanc 1980; LeBlanc and Whalen 1979). In some areas, Middle Pit Structure period sites are remarkably similar, in both architectural and ceramic styles, to Early Pit Structure sites (e.g., Mogollon Village). In other areas (e.g., the Mimbres valley), there are visible increases in the number of people living in Middle Pit Structure period communities (e.g., Galaz and Harris).

Middle Pit Structure period ceramics. The relatively crude ceramics associated with the EPS period were replaced with more “finished” pottery types during the MPS period (Cordell 1997:206-207). In general, by the Middle Pit Structure period, ceramics, which include bowls and jars, identified across the Mogollon region consist of polished, slipped, red and red-on-brown ceramics (Cordell 1997:204-206; Haury 1936). The red-on-brown ceramics were sometimes decorated, particularly towards the end of the MPS period.

Middle Pit Structure period community location. Middle Pit Structure period consists of small pit structures (i.e., smaller than 5 m in diameter) that are primarily rectangular, a change from the circular Early Pit Structure period pit structures (Cordell 1997:205). MPS period communities were no longer situated on knolls or bluffs, but rather were situated closer to land appropriate for agriculture (Cordell 1997:206).

Middle Pit Structure period domestic architecture. These communities appear to have been occupied on a more consistent basis than were those dating to the EPS period. More MPS period domestic pit structures have hearths than did EPS period structures, suggesting that they were occupied on a more full time and less seasonal basis, which may have something to do with the increase in the number of people living in the region at this time (Cordell 1997:205). Population increase appears to have occurred in many areas of the Mogollon region during the Middle Pit Structure period.

Population increase, either internal or via migration, occurred in the Mimbres, Pine Lawn, and Forestdale areas, where average site size increases three-fold (Anyon et al. 1981; Haury 1936; Wheat 1955). Communities that date to the Middle Pit Structure period include Black's Bluff, Galaz, Gallita Springs, Harris, and Old Town (Anyon and LeBlanc 1980; Bradfield 1931; Creel 1991, 1996, 1997a, 1998, 1999a). In the Reserve area, Turkey Foot Ridge was an important MPS period center (Haury 1936;

Wheat 1955:13-14) and in the Jornada region, Turquoise Ridge dated to the Middle Pit Structure period (Whalen 1994).

Middle Pit Structure period communal structures. Communal structures associated with the Middle Pit Structure period are as large as those that date to the EPS period, and are primarily circular to oval. At the same time, communal structure shape diversity increases during the MPS period, and D-shaped, rectangular, and square communal structures are found in the Mogollon region. However, the earthen lobes associated with EPS period communal structures disappear during the MPS period.

Several of Middle Pit Structure period sites continued to be occupied through the Late Pit Structure period and into the Pueblo period. The establishment of sites that continue to be population centers in the Mogollon region for hundreds of years is what makes the MPS period an important one to consider. The MPS period ends when architectural and ceramic changes occur at Mogollon sites.

Middle Pit Structure period subsistence. During the Middle Pit Structure period, maize continues to be an important part of the subsistence base throughout much of the Mogollon region. However, in places like the Jornada area, a mixed foraging diet supplemented with cultigens is the norm (Lehmer 1948). As was the case during the EPS period, hunting likely remained a consistent part of the Mogollon diet (Anyon et al. 1981). However, recent research by Cannon (2001) has suggested that during the MPS period, deer and pronghorn became quite limited at least in the Mimbres region. This decline was somewhat permanent and numbers did not rebound in this area, even during subsequent periods (Cannon 2001). These data may help to explain the increasing reliance on agriculture in this area of the Mogollon region.

The Late Pit Structure period (A.D. 850 to 1000). According to many researchers (Anyon et al. 1981; Haury 1936; LeBlanc and Whalen 1979), important changes at many pit structure sites occur from A.D. 850 until A.D. 950/1000 (Cordell 1997:206; Stokes and Roth 1999). Sites dating to this period are generally larger than Early and Middle Pit Structure period communities, which were quite small (i.e., five to thirty structures) (Anyon et al. 1981). One example of a Late Pit Structure period site is Luna village (Hough 1907; Wheat 1955:23-24), in far western New Mexico. Situated on a tributary of the San Francisco River, it consists of 100 pit structures and a large (96 m^2) communal structure. Occupation of Crooked Ridge village, situated in eastern Arizona along the Black River, continued from a small 20 pit structure Middle Pit Structure period community into the Late Pit Structure period, when 100 pit structures and two communal structures were built at the site (Wheat 1954).

Late Pit Structure period ceramics. During the LPS period, decorated red-on-brown ceramics, including bowls and jars, are quite common, although polished and red slipped ceramics are also identified at LPS period sites (Cordell 1997:206). By the end of the LPS period, people living in some areas of the Mogollon region (e.g., the Mimbres valley) produced white slipped bowls and jars with black paint decorations (Cordell 1997:207-208). Mimbres Boldface Black-on-white would later become Classic Mimbres Black-on-white, which became one of the most recognizable characteristics of the Early Pueblo period (Cordell 1997:206-207; LeBlanc 1983; Powell 2001).

Late Pit Structure period community location. Many LPS period sites are continuously occupied from the MPS period (Cordell 1997:206-207). These sites are larger than EPS and MPS period sites and more sites are associated with the LPS period than ever before (Anyon et al. 1981; Cordell 1997:206-207). Because there are more sites that are larger during the LPS period, diversity in site location increases. Overall, the majority of LPS period sites are situated next to arable land (Cordell 1997:205).

Late Pit Structure period domestic architecture. Rectangular pit structures become the norm at LPS period sites (Anyon et al. 1981; Cordell 1997:205). LPS period pit structures are larger than those associated with EPS and MPS period sites, and are commonly greater than 5 m in diameter (Anyon et al. 1981). In the Mimbres region, people began to construct their LPS period pit structures using cobble stone masonry (Anyon et al. 1981). Although there is regional variation (e.g., Jornada), almost all LPS period domestic pit structures have hearths, suggesting that they were occupied year-round as opposed to seasonally.

Late Pit Structure period communal structures. Large communal structures continued to be common at Late Pit Structure period sites (Anyon and LeBlanc 1980; Cordell 1997:206), but large structures situated at some distance from sites are not present. Smaller communal structures, referred to as “kin kivas” by some researchers (Adler 1989a, 1989b) appear in the archaeological record during the LPS period as well. Diversity in communal structure shape decreases during this period and rectangular structures are the most prevalent.

Late Pit Structure period subsistence. Subsistence remains (e.g., increasing numbers of leporid remains and decreasing amounts of large game animals; Cannon 2001) from LPS period sites, architectural remains (Anyon et al. 1981), and settlement patterns (Anyon et al. 1981) are similar to those associated with the subsequent Pueblo period (Anyon and LeBlanc 1980; Gilman 1980; Hegmon and Brady 2001; Nisengard 1995; Shafer and Taylor 1986; Whalen 1980, 1981).

Although in the past some researchers have suggested that the pit structure period in the Mogollon region was relatively stable and largely unchanging (Cordell 1997:206), it appears that architectural style and organization, and changes in ceramic artifacts, traditionally associated with the Early Pueblo period, had their foundations in the Late Pit Structure period (Anyon et al. 1981). Architectural and ceramic changes did not occur in all areas of the vast Mogollon region. In the Jornada area, pit structures continued to be the architectural norm at habitation sites until A.D. 1100 (Cordell 1997:360-361; Lehmer 1948; Rocek 1994; Whalen 1981, 1994). In some Mogollon areas, there is evidence that during the Late Pit Structure period community size increased from the Early Pit Structure and Middle Pit Structure period sites (Anyon et al. 1981; Cordell 1997).

The Pueblo Period

Several changes occurred between the Pit Structure and Pueblo periods (Anyon and LeBlanc 1980; Anyon et al. 1981; Cordell 1997:205). One of the most marked changes associated with the Pueblo period is the move from pit structures into surface room blocks composed of cobblestone masonry (Anyon et al. 1981; Anyon and LeBlanc 1980; Cordell 1997:206-207; Gilman 1980; LeBlanc 1989; Martin 1979:68-70).

The move from pit structures to above ground roomblocks did not occur in all of the Mogollon areas (Lehmer 1948; Reid 1989).

In areas like the Jornada and San Simon regions, people resided in pit structures until A.D. 1050 to 1100 (Cordell 1997:360-361; Gilman 1997; Lehmer 1948; Whalen 1994). In the Jornada region, adobe structures are common (Cordell 1997:360-361; Kelley 1984). Additional changes in pottery styles, including the development of Mimbres Black-on-white, a ceramic type that was initially developed as early as A.D. 800/850 (Anyon and LeBlanc 1980; Cordell 1997) is associated with the Early Pueblo Period, referred to as the Classic Mimbres period, in the Mimbres Valley of southern New Mexico. Settlement patterns changed as well. Specifically, by A.D. 950/1000 in many areas of the Mogollon region, people began to construct larger, architecturally planned sites situated closer to permanent water sources and arable land (Anyon et al. 1981; Anyon and LeBlanc 1984; Cordell 1997; Wills 1991a, 1991b; Woodbury 1961). Subsistence strategies, specifically a greater reliance on agricultural foodstuffs, had changed by this time throughout many areas of the Mogollon region as well (Anyon et al. 1981; Anyon and LeBlanc 1984; Cannon 2000; Cordell 1997; Wills 1991a, 1991b; Woodbury 1961).

The Early Pueblo Period (A.D. 1000 to 1150). During the Early Pueblo period, many Mogollon communities witnessed settlement and social changes (e.g., the construction of larger, more concentrated communities) (Anyon and LeBlanc 1980; Cordell 1997). One area that experienced a cultural florescence (e.g., trade of locally produced goods, trading into the communities of non-local goods, trademark cultural styles, and patterns) was that of the Mimbres valley, situated in southern New Mexico (Anyon and LeBlanc 1980, 1984; Creel 1989; Shaffer 2003). Important evidence (e.g., architecture, ceramics, the presence of non-local goods at sites in the area) for social, political, and economic changes was recovered from Mimbres valley sites such as the Galaz ruin (Anyon and LeBlanc 1984), NAN Ranch ruin (Shafer 1981, 1983, 1990, 2003), and Old Town (Creel 1989, 1990, 1991, 1996, 1997a, 1998, 1999a, 1999b, 1999c). Because the largest sites of this period are concentrated along the Mimbres River, this area is commonly referred to as the "heartland' of the Classic Mimbres people (LeBlanc 1983) and has sometimes been the sole focus of summaries of Early Pueblo period Mogollon sites (e.g., see Cordell 1997:348-355).

The general trend during the Early Pueblo period is toward higher population levels, which began during the Late Pit Structure period (Anyon and LeBlanc 1980, 1984; Cordell 1997; Creel and Anyon 2003). Another trend is large, spatially organized, surface room communities, which replaced earlier pit structures villages (Anyon et al. 1981; Anyon and LeBlanc 1984; Blake et al. 1986; Fish and Fish 1984; Gilman 1980, 1990; Hard 1986, 1990; Holliday 1996; Lekson 1988a 1988b; Lightfoot and Plog 1984; Shafer and Taylor 1986; Whalen 1980). Despite this trend, some Mogollon areas, including the east side of the Black Range in southern New Mexico (Brady and Clark 1999; Nelson 1999), the Jornada region (Lehmer 1948), and other mountain areas (Peterson 1988) did not experience similar changes (Cordell 1997:360-361).

In the Jornada region, people continued to practice a subsistence strategy, which included less agriculturally produced goods and more hunting and gathering.

Pit structures continued to be used in the Jornada region during the Early Pueblo period, and large communities were not created in the area (Cordell 1997:206-207; Lehmer 1948; see Kelley 1984 for an alternative). They appeared to live a more mobile lifestyle, occupying their villages on a seasonal basis (Lehmer 1948). The fact that people living in the Jornada region did not have continuous access to more permanent water resources may have contributed to this lack of population concentration (Lehmer 1948).

In the Mimbres, Pine Lawn, and Reserve areas, Early Pueblo period sites were often constructed directly atop Late Pit Structure period sites, which were situated in areas with access to arable land and permanent to semi-permanent water resources (Anyon and LeBlanc 1984; Creel 1998, 1999a, 1999b, 2000; Shafer 2003). This is certainly the case in the Mimbres valley, where many pit structure villages were replaced with variously sized masonry pueblos (Cordell 1997:206-207, 350-351; LeBlanc 1983; Lekson 1992).

Early Pueblo period ceramics. Red and white wares were present in assemblages recovered from sites in the Grasshopper, Jornada, San Simon, and Point of Pines regions during the Early Pueblo period. Decorated red wares also continued to be present in EP period ceramic assemblages (Cordell 1997:205-208). However, the addition of the truly spectacular Classic Mimbres Black-on-white ceramics also occurs at this time (Anyon and LeBlanc 1984; Cordell 1997:206-207; Crown 1994; LeBlanc 1983; Powell 2000; Shafer and Brewington 1995; Shafer and Taylor 1986). Cordell (1997:207-208) points out that Mimbres Black-on-white is a continuation of the LPS period Mimbres Boldface

Black-on white, however, the designs associated with the EP period are far more elaborate and detailed than their earlier counterparts.

Early Pueblo period community location. There is a great deal of diversity in EP period site choice. In some areas (e.g., the Mimbres valley), EP period communities were constructed atop LPS period villages (Anyon et al. 1981; Creel 1998, 1999a, 1999b, 1999c, 2000; Creel and Anyon 2003). There are more sites on the landscape during the EP period than previously documented in the Mogollon region. In general, EP period communities are larger than Pit Structure period villages and they are situated very close to arable lands, specifically adjacent to permanent rivers and other water sources (Minnis 1985). However, there are some indications that population increase during the EP period resulted in an expansion of settlements into areas that were less favorable for agricultural pursuits (Minnis 1985).

Early Pueblo period domestic architecture. During the EPS period, one of the most recognizable changes that defined the period, and those that followed, is the move from subterranean pit structures to above ground masonry roomblocks (Anyon et al. 1981; Cordell 1997:206-207). This change occurred relatively quickly and the result was a great deal more organization within those Mogollon communities that built pueblo roomblocks. Masonry rooms associated with the EP period vary quite a bit in size (e.g., 3 by 3 m, 3 by 5 m), are rectangular or square, and are most commonly attached to other rooms in a linear pattern (Cordell 1997:208). A majority of EP period habitation rooms have hearths suggesting year-round occupation of these sites. Mealing bins, storage pits, and other forms of domestic “furniture” are also common in EP period rooms. These features, in addition to site location, provide evidence for the importance of agriculture during this period.

Early Pueblo period communal structures. Very large "Great Kivas" were constructed during the EP period, although these structures were not as large as many of the Pit Structure period counterparts. Small "kin kivas" also become more frequent during the EP period. As was the case during the LPS period, rectangular communal structures are the most common. In addition to subterranean to semi-subterranean communal structures at sites, open plazas were added to EP period communities, often in the center of a roomblock or a site (Cordell 1997:205-207).

Early Pueblo period subsistence. The Mogollon subsistence base also changed during the Early Pueblo period. Specifically, an increasing reliance on and production of domesticated foodstuffs occurred in many areas of the Mogollon region (Cordell 1997:203; Hard et al. 1996; Martin 1979:65; Shafer 2003). However, people living in areas that experienced a growing reliance on domesticates never completely abandoned their foraging practices in favor of complete reliance on maize production (Cannon 2001; Schmidt 1999; Szuter and Bayham 1989, 1996; Szuter and Gillespie 1994). Food production and foraging continued to be used in combination in many Mogollon areas into the Late Pueblo period (Cannon 2001; Creel 1994), although settlement patterns seem to reflect increased variability in site location choices and site architecture (Creel 1994; Nelson 1999; Nelson and LeBlanc 1986).

The Early Pueblo period ends at approximately A.D. 1150 (Cordell 1997:207). Many of the large pueblos that date to the Early Pueblo period are abandoned or experience a period of rapid depopulation (LeBlanc 1989; Minnis 1985). While some areas of the Mogollon region do not experience population decrease, the areas that were the most densely occupied during the EP period (e.g., the Mimbres and Gila rivers valleys) did. The reasons for these changes are explored in the next section.

The Late Pueblo Period. As was the case during the Early Pueblo period, there is a great deal of diversity in architectural and ceramic elements throughout the Mogollon region during the Late Pueblo period (Cordell 1997:208-209). In general, however, the Late Pueblo period (A.D. 1150 to 1450) is characterized by declining population levels in areas of southern New Mexico, including the Mimbres valley (Anyon and LeBlanc 1980). The amount and frequency of external influences on communities in the Mogollon region increases during the Late Pueblo period (LeBlanc 1999; Nelson and LeBlanc 1986). Population increase also occurs at this time, particularly in the western portion of the Mogollon region (Anyon and LeBlanc 1980; Blake et al. 1986; Nelson and LeBlanc 1986; Rautman 1996; Ravesloot 1979; Riggs 2000, 2003; Shafer 1999). Adobe architecture and polychrome pottery (e.g., Salado and Chihuahua) are produced in several areas of the Mogollon region during the Late Pueblo period (Cordell 1997:416-417; Crown 1991; Lekson 1992; Nelson and LeBlanc 1986). Population movements out of the Mogollon region and into other areas (e.g., into areas of eastern Arizona and the northern Rio Grande) are common during this period (Cordell 1997: 207-208, 378-380; Creamer 1993; Martin 1979:65; Nelson 1999; Reid 1989; Reid and Shimada 1982; Riggs 1999, 2000, 2003).

In some areas, people in the large communities that were prevalent during the early part of the Pueblo period dispersed, and many people relocated to other parts of the southwestern United States (Cordell 1997; Nelson 1999; Nelson and LeBlanc 1986). In other areas, particularly to the eastern Black Range in southwestern New Mexico (e.g., the Animas valley), sites were rather small, although located in proximity to one another (Anyon and LeBlanc 1984; Nelson 1999; Nelson and LeBlanc 1986). In areas of eastern Arizona, new sites were constructed, many of which were rather large (e.g., Grasshopper) (Cordell 1997; Reid 1989, 1974; Riggs 1999, 2000, 2003; Reid and Shimada 1982).

Some researchers (Cordell 1996; Nelson and LeBlanc 1996; LeBlanc 1999; Woodson 1999) suggest that some Late Pueblo period settlements are a result of external architectural, political, economic, and social influences. Some of these influences are from Ancestral Pueblo peoples to the north (LeBlanc 1999; Woodson 1999). Other Late Pueblo period influences are believed to come from the south, from sites like Paquimé (DiPeso 1974), a large ancient trade center located in what is today Chihuahua, Mexico (Cordell 1997:208-209, 389; LeBlanc 1999:250-253; Nelson and LeBlanc 1986; Shafer 1999; Whalen and Minnis 1996; Woodson 1999). LeBlanc (1999:250-251) suggests that warfare was rampant, during the Late Pueblo period, and that this had an impact on site organization and settlement plans. Others researchers (Creel 1997b; 1999b; Nelson 1999:47-71) suggest that the Late Pueblo period reflects the socio-political and material diversity seen throughout the Mogollon region for centuries, and that external influences are not responsible for the changes in architectural and ceramic styles.

In some parts of the Mogollon region (e.g., the Mimbres valley), Late Pueblo period villages are much smaller than their earlier counterparts. In other areas (e.g., eastern Arizona), however, the Late Pueblo period communities were larger than those that date to the Early Pueblo period (Cordell 1997:378; Reid 1989; Riggs 2000). Because there is a great deal of site diversity across space, I divided the Late Pueblo period into the Early Late Pueblo period (A.D. 1150 to 1300) and the Late Late Pueblo period (A.D. 1300 to 1450).

Early Late Pueblo Period (A.D. 1150 to 1300). In many areas of the Mogollon region, the Early Late Pueblo period is a time of population dispersal and reorganization; for example, large Mimbres communities shrink or are abandoned, with people constructing smaller roomblocks and ceasing to make Mimbres black-on-white pottery (Anyon and LeBlanc 1980; Creel 1999a, 1999b; Nelson and LeBlanc 1986). During this time, there is a great deal of architectural and ceramic variation present in the Mogollon region. Researchers disagree on why variation exists; some (Nelson and LeBlanc 1986; Shafer 1999) have suggested that people from other parts of the Southwest come into the Mogollon region and, in effect, colonize the area. Others (Creel 1999a, 1999b, 1999c) suggest that architectural and ceramic variation is a result of internal change within existing populations. It is clear that change does occur between the Early and Early Late Pueblo periods (Anyon et al. 1981) and I review these changes below.

Early Late Pueblo period ceramics. The spectacular Mimbres Black-on-white ceramics associated with the Early Pueblo period do not continue during the Early Late Pueblo period. However, black-on-white ceramics do not completely disappear from

Mogollon ceramic assemblages (Cordell 1997:207; Reid 1989). Brown wares, white wares, and red slipped wares continue to be produced by people living in many areas of the Mogollon region (Cordell 1997:207). In some cases, specifically at sites in eastern Arizona, non-local ceramic types were recovered from Early Late Pueblo period sites (Crown 1991).

Early Late Pueblo community location. ELP period sites are found in a variety of locations. ELP period communities in general are smaller than EP period villages. Sites are situated close to arable land and semi-permanent to permanent water resources, as agricultural production remains a high priority during this period. At the same time, large, multi-room pueblos that characterized many areas of the Mogollon region during the EP period are not present during the ELP period in many of the same areas (Cordell 1997; Haury 1985). In the Jornada region, a majority of the settlements are abandoned by the ELP period and do not appear to be reoccupied again (Cordell 1997; Lehmer 1948).

Early Late Pueblo domestic architecture. Domestic architecture associated with the EP period is similar to previous periods in that it is relatively diverse depending on which area of the region it is found. Cobble masonry continues to be a common form of masonry in the Black Range in southern New Mexico and in the Point of Pines region of eastern Arizona (Reid 1989). At the same time, architectural styles of masonry construction resemble those associated with Ancestral Pueblo sites in eastern Arizona (e.g., “dressed” stone masonry) and sites in northern Chihuahua (e.g., course adobe) at the beginning of the thirteenth century (e.g., Mimbres, Nelson and LeBlanc 1986; Point of Pines region, Reid 1989).

Early Late Pueblo period communal structures. Communal structure frequency appears to decrease during the ELP period (Haury 1985). There is a great deal of diversity in the communal structures dating to the EP period. Rectangular communal structures continue to be common; however, circular structures are equally as common. Square communal structures dating to the ELP period have also been identified. Haury (1985:391) suggested that Great Kivas are absent from Mogollon sites dating to the ELP period. He suggested that the plaza, within which communal structures were situated during the ELP period in eastern Arizona, had taken the place of the Great Kiva in Mogollon communities (Haury 1985:391). However, at sites like Grasshopper (Reid 1989; Riggs 2000, 2001) and Turkey Creek (Lowell 1991) there are large communal structures as well as smaller structures that date to the ELP period.

Early Late Pueblo period subsistence. In general, subsistence patterns appear to remain relatively consistent with those associated with the EP period during the ELP period (Cordell 1997). However, the scale of agricultural production does appear to decline during the ELP period in some areas (e.g., Mimbres and Gila River valleys). This decrease is likely associated with diminishing numbers of people living in these areas. In eastern Arizona, however, large sites with people dependent on a mixture of agriculture, hunting, and foraging continue to be occupied (Reid 1989; Riggs 2001).

Researchers (Cordell 1997:375-383; LeBlanc 1999; Wilcox and Haas 1994) have provided a variety of explanations for the presence of large late thirteenth and early fourteenth century pueblos; many of these explanations focus on defense and warfare. Others (Adams 1991; Crown 1994) have chosen to focus on social explanations, suggesting that the well-organized, large, Late Pueblo period communities are a result of more complex socio-political relationships throughout the southwestern United States.

Some researchers (Blake et al. 1986; Cordell 1997) have suggested that resource depletion combined with a drought, which began in A.D. 1270, may have brought about the need for people to reorganize. This reorganization would have had social consequences for people living in the Mogollon region. One remedy for this was the implementation of social controls within large communities. The origins of the Katchina cult, which promoted social cohesion by ridiculing improper or anti-social behavior, are believed to date to the Late Late Pueblo period (Adams 1991; LeBlanc 1999). Some researchers (Adams 1991; Cordell 1997:423-428; Crown 1994) have suggested that the cult arose to provide a common socio-religious bond as people from diverse backgrounds came together to inhabit larger pueblos.

Small sites (e.g., Phelps and Buckaroo), lacking communal structures, were built during the Early Late Pueblo period in areas like the eastern Mimbres area of southwestern New Mexico (Nelson 1999). However, by A.D. 1300, some areas of the Mogollon region, including the Jornada area, were largely abandoned (Cordell 1997:413-415). Between A.D. 1300 and 1450, the intense reorganization, discussed above and below, occurred and large communities once again emerged in the Mogollon region, albeit in different areas than their earlier counterparts were located (Cordell 1997:413-421; Reid 1989; Reid and Shimada 1982; Riggs 2003).

Late Late Pueblo period (A.D. 1300 to 1450). In some areas of the Mogollon region (e.g., the Animas valley and the eastern part of the Mimbres area), the Late Late Pueblo period was a time of population dispersal and movement into smaller communities. For instance, Nelson (1999) has provided evidence for a continuation of occupation in the eastern part of the Mimbres region, albeit in smaller communities. Survey and excavation data from the eastern part of the Mimbres area provide evidence that, although people left the large Early Pueblo period Mimbres communities of Galaz, NAN Ranch, and Mattocks, people did not abandon the area altogether, but moved into smaller villages in the eastern part of the region (Nelson 1999:187-193). The large communities that characterized the Early Pueblo period in the Mimbres area were replaced with what Nelson (1999:189-191) refers to as hamlets, where populations were small and communal structures were not part of the area's settlement pattern. Other areas of the Mogollon region (e.g., Jornada) appear to have been completely abandoned by the people who made it home for hundreds of years (Lehmer 1948).

Late Late Pueblo period ceramics. Late Late Pueblo period ceramic assemblages reflect even more diversity than those associated with the Early Late Pueblo period. Locally produced red, white, and brown wares are found at sites in the Black Range and at sites like Grasshopper in eastern Arizona (Reid 1989). At the same time, Ancestral Pueblo, Hohokam, and Chihuahuan ceramics appear in Mogollon assemblages. Polychrome designs from the site of Paquimé in northern Chihuahua have been identified at sites in the Mimbres valley and elsewhere (Nelson and LeBlanc 1986). While these ceramics were likely traded into the area, Ancestral Pueblo ceramics were probably made locally at sites like Grasshopper Pueblo, by migrants forced to move south during what is the Late Late Pueblo period in the Mogollon region (Woodson 1999). Ceramics from the Late Late Pueblo period provide evidence for a period marked by a great deal of cultural change within the region as a whole.

Late Late Pueblo period community location. The locations of Late Late Pueblo period communities are relatively diverse, as they were during the Early Late Pueblo period. At the same time, many LLP period sites are situated close to arable lands and permanent water supplies, as were their EP period counterparts. Some LLP period sites appear to have been constructed in defensible locations, on ridges overlooking valleys (LeBlanc 1999). Sites are also found in the more rugged, mountainous areas of the Mogollon region (e.g., the Black Range); these site location choices may suggest a return to a more mixed foraging diet for people living in these areas.

Late Late Pueblo period domestic architecture. During the Late Late Pueblo period in the Mogollon region, people in some areas of the Mogollon region constructed large communities, often with central plazas (e.g., the Late Late Pueblo period at Grasshopper and in the Point of Pines and Forestdale areas of eastern Arizona). Cobblestone masonry, which was common during the Early Pueblo and Early Late Pueblo periods, was replaced in some areas (e.g., eastern Arizona) with masonry characteristic of Ancestral Pueblo architectural styles (Cordell 1997:207; Woodson 1999). In other areas (e.g., the Mimbres valley), adobe walls, like those identified at sites situated in northern Chihuahua, became increasingly common (Cordell 1997:207-208).

The organization of Late Late Pueblo period communities did not reflect diversity, in fact the appearance of these sites provided evidence that, in some of these communities, there was an increased emphasis on social cohesion during this period (Cordell 1997:210; Creel 1997b; Herr 2001:42-59; LeBlanc 1989; Nelson and LeBlanc 1986; Wasley 1952). Many Late Late Pueblo period sites were quite large and spatially concentrated (e.g., Grasshopper pueblo). These changes may reflect the stresses that Late Late Pueblo communities had to cope with when faced with a period of rapid depopulation, followed almost immediately by an influx of immigrants from other areas of the desert borderlands.

Some LLP period sites were quite large, for example, Turkey Creek pueblo, located along the creek of the same name in the Point of Pines region of central Arizona, consists of more than 300 rooms and several communal structures and plazas (Haury 1989; Johnson 1961; Lowell 1988, 1991). Unlike Turkey Creek, some Late Late Pueblo period sites, like those located in the eastern Mimbres region of southwestern New Mexico, were smaller than those that date to the Early Pueblo period and had no communal structures associated with them (Hegmon et al. 1999; M. Nelson 1999; B. Nelson and LeBlanc 1986).

Late Late Pueblo period communal structures. At LLP period sites, large plazas were enclosed within roomblocks, which sometimes housed communal structures. Large, spatially concentrated sites with only one communal structure, to which access is controlled, provide evidence for an effort by Late Pueblo period people to promote group solidarity (see Hill 1970). Communal structure shape diversity diminishes and almost disappears during the LLP period and almost all communal structures are rectangular. Both small and large communal structures are present at LLP period sites, as are the plazas first constructed during the Early Pueblo period in many areas of the Mogollon region.

Late Late Pueblo period subsistence. As previously stated, some LLP period Mogollon sites are situated in areas where intensive agriculture would have been difficult (Nelson 1999). It is likely that people living in these areas did not rely as heavily on agricultural food production as those who lived in large Early Pueblo period communities. In other areas, however, agriculturally produced foods remained the primary subsistence base for Mogollon peoples. At places like Grasshopper pueblo (Reid 1989) and Turkey Creek pueblo (Lowell 1991), large numbers of people relied on the successful production of corn, beans, squash, and other domesticates. Complex irrigation systems, grid gardens, check dams, and other agricultural features were constructed to aid agricultural pursuits at some LLP period sites (Cordell 1997; Riggs 2001). At the same time, hunting and foraging activities continued to support agricultural diets (Lowell 1991).

Explanations for Late Late Pueblo period population reorganization and dispersals are varied (Cordell 1997:378; LeBlanc 1989; M. Nelson 1999:186-193; B. Nelson and LeBlanc 1986). LeBlanc (1989) and B. Nelson and LeBlanc (1986) have used the Mimbres example to suggest that external forces, specifically warfare, led to the population dispersals and reorganizations associated with the Late Pueblo period (Cordell 1997:378). LeBlanc (1989) and others (Reid 1989; Wilcox and Haas 1994) have used site locations, architectural characteristics (e.g., features that limit access to a community), increased projectile point frequency, and skeletal evidence of violence to support the idea that warfare was part of life in the region (Cordell 1997:375-383). Cordell (1997:375-376) in her discussions of Ancestral Pueblo peoples, living to the north of the Mogollon region, has stated that Puebloans may have been subject to raids by non-pueblo peoples or may have gone to battle with other Pueblo groups.

Researchers (LeBlanc 1999; Wilcox and Haas 1994) have speculated that resource depression and population increase, associated with the Early Pueblo period, and subsequent expansion may have led to an increase in warfare in the Mogollon region and elsewhere during the Late Late Pueblo period. While this issue is certainly a contentious one, warfare models may help to explain settlement reorganizations during the Late Pueblo period.

Mogollon Communal Structures: A Current Debate

Smaller communal structures become more prevalent in the Mogollon region during the Late Pit Structure period, and they continue to dominate the assemblage until the Early Late Pueblo period (Anyon and Creel 2002; Anyon and LeBlanc 1980; Herr 2001; Lekson 1989). As a result, one current debate among Mogollon archaeologists is whether smaller pit structures serve communal roles (Anyon and LeBlanc 1989; Gilman 1998; Gilman and LeBlanc n.d.; Lekson 1989). Roberts (1929) and others (Adler 1989a, 1989b; Anyon and LeBlanc 1980; LeBlanc 1989) suggest that these smaller pit structures serve to integrate the room blocks with which they are associated. The function of these smaller structures is primarily based on ethnographic records and fieldwork. Small communal structures are found at many contemporary pueblos (e.g., Zuni) and are used by moieties and clans for ceremonial, religious, and communal functions (Dozier 1970a, 1970b; Ferguson 1996; Ladd 1979; Woodbury 1979).

Lekson (1989) is one of the researchers to question the characterization of these smaller "out of sequence" pit structures as kivas. Lekson (1989:161), in his study of Ancestral Pueblo kivas, suggests that smaller structures may be pit structures that continued to be used for habitation even after people began living in above ground roomblocks. One reason that Lekson (1988a, 1988b, 1989) has questioned the integrative function of these smaller structures is that they are so plentiful even after above ground structures became the primary architectural form. Gilman (1998) has also offered an alternate explanation for the presence of these smaller pit structures, suggesting that they were temporary homes for people as they constructed above ground roomblocks.

Researchers also continue to discuss and debate the roles served by the structures called "great kivas" as well as the importance of smaller communal structures in the lives of ancient peoples living in the Mogollon region (Adams 1991; Anyon and LeBlanc 1980; Cordell 1997; Hegmon 1989). Some researchers (Adler 1989b; Hegmon 1989) suggest that the primary role of communal structures is for community integration. It is also possible that only men had access to and were able to use Mogollon communal structures, as is the case in many contemporary Pueblo communities (Dozier 1970a, 1970b; T. Martinez, Lieutenant Governor San Ildefonso Pueblo, personal communication, 2004; Ortiz 1970). Even in some areas of the Southwest today, women are prohibited from entering these structures, whether they are archaeological or modern

(T. Martinez, Lieutenant Governor San Ildefonso Pueblo, personal communication, 2003). On the other hand, communal structures may be the primary locations for activities such as social networking (Adler 1989a, 1989b) and the redistribution of food resources (Lightfoot and Feinman 1982; Lightfoot and Upham 1989). Martin (1979) proposed that the large structures were used to facilitate multi-community cooperation; in this context, such a role would be interpreted as inter-site integration. Still others (Lipe 1978; Plog F. 1984) have presented the idea that the redistribution of resources within a community is organized and conducted within the walls of great kivas.

Chapter Summary

This chapter is an overview of environmental and cultural information for the Mogollon region, which is important for understanding the data presented in Chapter 5. This chapter also provides a backdrop for Chapter 4, which includes a detailed discussion of the research methods used to conduct this analysis. One goal of the background information included in this chapter is to relay the amount of cultural and environmental diversity that characterizes the Mogollon region. Recent research, conducted throughout many areas of the region, has added to and expanded our understanding of both the diversity and similarities that exist in the Mogollon culture (Creel 1997a, 1997b, 1999a, 1999b; Gilman 1997; Hard and Roney 1999, 2000; Herr 2001). Recognizing this diversity allows for the development of a broader understanding of aggregation and integration in the Mogollon region between A.D. 250 and 1425.

CHAPTER 4

RESEARCH METHODSAND MEASURES OF AGGREGATION AND INTEGRATION

The focus of this chapter is on the methodological approach and the measures of aggregation and integration used for this analysis. In order of appearance, these measures include the frequency of communal structures, their location, size, and shape; communal structure hearth shape; structure orientation; wall construction techniques; and dismantling and/or destruction and/or burning of communal structures. While I do not deal specifically with the analysis of site size, topography, or vegetation, I collected these data to look for patterns in site selection; each is discussed in Chapter 5 as they related to issues of aggregation and integration. I also considered evidence of the structure having burned. In their 2003 article, Anyon and Creel discussed the significance of intentional destruction of communal structures. The authors suggest that the construction and dismantling of Mogollon communal structures are symbolic acts that reflect the socio-religious and political conditions of their communities. In an effort to determine how many of the structures in the Appendix II database had been purposefully burned, I collected these data. I present results from the analysis of all the data listed above in Chapter 5.

My analysis of Mogollon communal structures across a wide expanse of land and over an 1100-year period required a systematic approach. I constructed a data collection form (Figure 4.1) in an effort to be consistent while amassing data from a wide variety of published and unpublished resources, including site reports, articles and books, archival materials, and data from excavations in which I have participated. Ultimately, I was interested in assessing the architectural patterns in Mogollon communal structures through time. Subsequently, I was able to develop an interpretation based on the information collected for this analysis to discuss issues of aggregation and integration.

Communal Structure Collection Form
Revised 8 June 1999

Today's date: ________________________
Reference(s): ____
Site Number: ____________________ Site Name: __________________________________
Structure Number/Name: ____
Phase Designation: ____________________Estimated Dates: _____________________
Absolute Date (A.D.): _________ Type of Date (i.e., radiocarbon): ____________________
Shape: __ circular; __circular with lobes; __ D-shaped; __oval; __ rectangular; __square; __irregular; __other. Shape notes: ____
Structure orientation: _____________________________Size (m^2): ____________
Entryway: __ramp; __stepped__; __roof; __ other
Depth (meters from the floor to the top of the remaining wall): ___________________
Wall construction: __subterranean; __ masonry; __ adobe; __ earthen; __ other
Notes on wall construction: ____
Structure floor: __ plastered __ not plastered __ other
Floor notes: ____
Structure roof: ____
Internal features: Sipapu_____; Vent_____; Deflector_____; Niche_____; Pit_____; Storage Pit _____; Foot drum_____; Floor Vault_____; Human Burials_____; Faunal Burials_____;
Other____
Notes on internal features: ____
____
Number of hearths_____; Shape(s): ____________________________________
Evidence for reuse/remodeling of communal structure: ____________________________
____
Structure burning __Burned; __ Not burned; __ Unknown
Site size: ____
Topographic location: ____
Vegetation: ____
Closest permanent or semi-permanent water: ___________________________________
UTMs: Northing: _________________ Easting: ________________
Elevation (meters): ____________________
Quad name: ____
Additional information: ____
____

Figure 4.1. Communal Structure Data Collection Form.

Criteria for Identification of Communal Structures

A central question of this analysis is, which buildings qualify as communal structures? The definition I employ is that a communal structure is a facility specifically designed and designated for use by people to conduct ceremonies, rituals, meetings, and/or activities that involve members of their community, or the community as a whole. The structure will be differentiated from non-communal structures in its frequency, location, size, shape, and/or internal features. While I have developed my own definition of what a communal structure is, I ultimately decided to include all structures described by Mogollon researchers as kivas or communal structures in my analysis because these data have been collected by so many archaeologists over the course of almost a century. I did not feel that I could remove a communal structure from its status without revisiting and or re-excavating these features. I did opt not to include any structure that researchers called “kivas” without providing construction, size, or any other details.

Table 4.1 includes an abbreviated list of the structures included in the analysis; the table is abbreviated in that not all of the information collected for each structure is included (for these data, see Appendix II). Specific data concerning the kinds of dates available for each structure is available in Chapter 5 and in Appendix II. The designation *xxx* is used to indicate missing or unavailable data. It is possible to debate the idea whether some of these structures are communal structures, but archaeological site reports and published data indicate that at some point researchers had evidence to suggest that they did serve communal functions. As a result, it would bias the analysis to disregard these structures arbitrarily because they are controversial.

Table 4.1. Mogollon Communal Structures by Period (xxx designates missing or unavailable data). Dating information is from site reports, published articles and books, personal communications.

Site Number	Site Name	Structure Number	Period	Size (m2)
AZ P:16:1	Bear	Kiva No. 1	EPS	86
LA 103907	Bluff	House 5	EPS	83
W:10:15	Crooked Ridge	Pithouse 9	EPS	82
W:10:15	Crooked Ridge	Structure 19	EPS	111.6
LA 32536	Cuchillo	1	EPS	41
LA 6538	Diablo	Feature 5	EPS	31.9
LA 6538	Diablo	Feature 14	EPS	36.3
LA 635	Galaz	Unit 8	EPS	37
LA 1867	Harris	House 14	EPS	44
Lagoon	Lagoon		EPS	35.3
LA 12110	McAnally	Unit 11	EPS	23.8
LA 11568	Mogollon	House 5A	EPS	82.5
LA 1113	Old Town	A67	EPS	39
LA 9713	Promotory	House B	EPS	86
LA 127260	Ridout Locus	House F	EPS	35.84
LA 5421	Saige-McFarland	Pithouse 1/Great Kiva	EPS	57.7
LA 64931	SU	House V	EPS	78.5
LA 64931	SU	Pithouse A	EPS	84.9
LA 53	Three Circle	Room 19	EPS	53.2
LA 53	Three Circle	2A	EPS	57.2
LA 34813	Winn Canyon	Room 2/Kiva	EPS	63.5
LA 19075			EPS	40.3
W:9:10	Stove Canyon	Kiva 1	EPS/MPS	62.64
LA 34787	Black's Bluff	Pit House 1	MPS	37.1
LA 6083	Gallita Springs	Feature 40	MPS	20
LA 1867	Harris	House 23	MPS	45.5
LA 1867	Harris	8	MPS	70.9
LA 11568	Mogollon	House 3	MPS	55.4
LA 1113	Old Town	A71	MPS	52
LA 10411	San Francisco	19	MPS	53.2
LA 10411	San Francisco	2A	MPS	57.2
LA 9709	Turkey Foot Ridge	Pithouse K	MPS	59.2
	Turquoise Ridge	Structure 35	MPS	30
LA 127260	Wind Mountain	House O	MPS	28.24
LA 127260	Wind Mountain	House AK	MPS	29.85
LA 127260	Wind Mountain	House AB	MPS	40.5
LA 18888	Beauregard	Structure 1	LPS	64
LA 78337	Bradsby	1	LPS	16.2
LA 190	Cameron Creek	105	LPS	13.3
LA 190	Cameron Creek	127	LPS	13.7
LA 190	Cameron Creek	112	LPS	18.1
LA 190	Cameron Creek	119	LPS	35.3
LA 190	Cameron Creek	Kiva	LPS	85.3

Table 4.1 continued, *xxx* designates missing or unavailable date.

Site Number	Site Name	Structure Number	Period	Size (m2)
LA 5841	Cooney Ranch #1	Communal Structure 1	LPS	64
LA 635	Galaz	42A	LPS	175.3
LA 6083	Gallita Springs	Feature 38	LPS	16
LA 1867	Harris	House 10	LPS	143
LA 71877	Lake Roberts Vista	Great Kiva	LPS	60
LA 6000	Lee	21	LPS	12
LA 6000	Lee	23	LPS	12
LA 6000	Lee	20	LPS	16
LA 6000	Lee	18	LPS	18
LA 6000	Lee	19	LPS	19
LA 6000	Lee	22	LPS	22
LA 2465	NAN Ranch	91	LPS	20
LA 2465	NAN Ranch	52	LPS	43.2
LA 2465	NAN Ranch	43	LPS	58
AZ W:10:111	Nantack	Pithouse 10	LPS	60
AZ W:10:111	Nantack	Great Kiva 1	LPS	152.8
LA 1113	Old Town	A16	LPS	78
LA 104065	Ponderosa Ranch		LPS	xxx
LA 9657	Sawmill/Fox Farm	Kiva	LPS	75.6
LA 84657	Squaw Canyon		LPS	xxx
LA 38624	Starkweather	Pithouse B	LPS	99
LA 64931	SU	Pithouse Y	LPS	12.5
LA 1691/LA 15002	Swarts	Room 2	LPS	27.5
LA 1691/LA 15002	Swarts	Room W	LPS	76
LA 1691/LA 15002	Swarts	Room AE	LPS	109.4
LA 4424	Wheatley Ridge	House 7	LPS	100.44
LA 127260	Wind Mountain	House XX	LPS	27.95
LA 127260	Wind Mountain	House Y	LPS	29.84
LA 127260	Wind Mountain	House U	LPS	36.9
LA 127260	Wind Mountain	House X	LPS	70.5
LA 3099	WS Ranch/McKeen	Kiva C	LPS	39.7
LA 3274		Great Kiva	LPS	232.2
LA 3921			LPS	xxx
LA 39261			LPS/EP	25
LA 34787	Black's Bluff	Kiva 7	EP	14
LA 34787	Black's Bluff	Great Kiva 13	EP	28
Carter Ranch	Carter Ranch	Kiva 1	EP	8.1
Carter Ranch	Carter Ranch	Room 16	EP	8.4
Carter Ranch	Carter Ranch	Great Kiva	EP	235
LA 5066	Cottonwood Creek Pueblo		EP	xxx
LA 6538	Diablo	Feature 7	EP	16.8
LA 6783	Dinwiddie	Feature 14	EP	12.8
LA 6783	Dinwiddie	Feature 11	EP	13.3
W:6:5	Dry Prong	Kiva 1	EP	192

Table 4.1 continued, *xxx* designates missing or unavailable date.

Site Number	Site Name	Structure Number	Period	Size (m2)
LA 78963	Elk Ridge	Kiva	EP	100
LA 635	Galaz	Kiva 107	EP	12.8
LA 635	Galaz	73 (Parrot Kiva)	EP	146.8
LA 11075	Gatton's Park		EP	xxx
LA 6536	Graveyard Point	Feature 8	EP	11.4
LA 6536	Graveyard Point	Feature 9	EP	16.8
LA 33642	Jennie Riley Stallworth	Great Kiva	EP	xxx
LA 33642	Jennie Riley Stallworth		EP	xxx
LA 676	Mattocks	Unit 410	EP	13.8
LA 676	Mattocks	Kiva 48	EP	14.8
LA 2465	NAN Ranch	58	EP	17.82
LA 2465	NAN Ranch	57	EP	32.2
LA 2465	NAN Ranch	39	EP	36
LA 2465	NAN Ranch	18	EP	38.76
LA 2465	NAN Ranch	45	EP	95
LA 86310	Ojo Caliente G	Great Kiva	EP	113.04
LA 3639	Pine Creek	Room 1	EP	12.7
LA 3639	Pine Creek	Room 4	EP	15.9
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Pithouse/Kiva 2	EP	13.5
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Pithouse/Kiva 1	EP	28.4
LA 5412	Redrock		EP	189.43
LA 1118	Rock House	Feature 8	EP	11.6
LA 1118	Rock House	Feature 7	EP	11.6
LA 5421	Saige-McFarland	Pithouse 3	EP	9.8
LA 66782	Sand Flat		EP	4.65
LA 54955	TJ	Great Kiva	EP	200
AZ P:16:2	Tla Kii	Kiva 2	EP	12
AZ P:16:2	Tla Kii	Kiva 52	EP	260.2
AZ P:16:2	Tla Kii	Kiva 1	EP	287.56
LA 16241	Treasure Hill	Room 6	EP	14.3
LA 16241	Treasure Hill	Room 8	EP	14.6
LA 8675	West Fork	10	EP	9.8
LA 8675	West Fork	6	EP	16
LA 18903	Wheaton Smith	Unit 34	EP	28.8
LA 127260	Wind Mountain	Room 15	EP	8.96
LA 127260	Wind Mountain	Room 3	EP	9.06
LA 127260	Wind Mountain	House V	EP	15.27
LA 127260	Wind Mountain	House P2	EP	18.24
LA 127260	Wind Mountain	Room 7	EP	37.9
LA 2454	Woodrow		EP	120
LA 2454	Woodrow		EP	279
LA 1294	Yeo 194	Great Kiva	EP	279
LA 18753			EP	15.24
LA 66686		Kiva	EP	42
LA 5389			EP	xxx
LA 5405			EP	xxx

Table 4.1 continued, *xxx* designates missing or unavailable date.

Site Number	Site Name	Structure Number	Period	Size (m2)
LA 68709			EP	xxx
LA 14883			EP	xxx
LA 3272			EP	xxx
LA 6079			EP	xxx
LA 2949	Apache Creek	Great Kiva	ELP	50
AZ P:14:24	Chodistaas	Room 2a	ELP	33.75
AZ P:14:24	Chodistaas	Room 18a	ELP	50
LA 68188	Fox Place		ELP	18.5
LA 4913	Gila Cliff Dwellings	Room 27	ELP	25
LA 4913	Gila Cliff Dwellings	Room 17	ELP	31.5
LA 4026	Goesling Ranch		ELP	46.12
AZ P:14:8	Grasshopper Spring	Room 7/Protokiva	ELP	39
LA 8682	Higgins Flat	Kiva 1	ELP	99.75
LA 8682	Higgins Flat	Great Kiva	ELP	128.4
LA 467	Hulbert		ELP	30.48
LA 15075	Montoya	Room 4	ELP	37.75
W:10:51	Point of Pines	Pithouse 13	ELP	10.6
W:10:50	Point of Pines	Kiva 5	ELP	xxx
LA 5391	Pueblo Cordoval		ELP	xxx
LA 8891	Schoolhouse Canyon	Kiva	ELP	22.09
LA 1119	Small House North of Arroyo Seco		ELP	xxx
LA 2112	Smokey Bear/Block Lookout	Feature 4	ELP	32.8
LA 6565	Taylor Draw	Feature 15	ELP	12
LA 6565	Taylor Draw	Feature 22	ELP	16
LA 6565	Taylor Draw	Feature 7	ELP	16
AZ W:9:123	Turkey Creek	Room 152-K1	ELP	11.6
AZ W:9:123	Turkey Creek	Room251-K3	ELP	13
AZ W:9:123	Turkey Creek	Room 237-K2	ELP	14
AZ W:9:123	Turkey Creek	Great Kiva	ELP	180
LA 3271	Valley View	Room 2	ELP	29.3
LA 88889	Victorio		ELP	xxx
LA 88889	Victorio		ELP	xxx
LA 88889	Victorio		ELP	xxx
W:10:37		Kiva 5	ELP	7.5
W:10:37		Kiva 3	ELP	9.6
W:10:37		Kiva 2	ELP	10.5
W:10:37		Kiva 1	ELP	10.6
W:10:65		Kiva 2	ELP	10.9
W:10:65		Kiva 1	ELP	11
W:10:37		Kiva 4	ELP	17.3
W:10:57		Kiva 1	ELP	21.1
LA 3274			ELP	xxx
LA 8780	Grasshopper	Room 341	LLP	12.48
LA 8780	Grasshopper	Room 246	LLP	29.19
LA 8780	Grasshopper	Great Kiva	LLP	181.83
LA 5793	Ormand	Room 79	LLP	17.1
W:10:50	Point of Pines	Kiva 1	LLP	220

Table 4.1 continued, *xxx* designates missing or unavailable date.

Site Number	Site Name	Structure Number	Period	Size (m2)
W:10:50	Point of Pines	Kiva 2	LLP	263
W:10:47		Kiva 1	LLP	19
W:10:52		Kiva 1	LLP	20.1
W:10:52		Kiva 2	LLP	20.1
W:10:48		Kiva 1	LLP	21.2
LA 3275	Aragon Highway Salvage		LP	xxx
AZ Q:15:3	Casa Malpais		LP	xxx
LA 8682	Higgins Flat	Kiva 2	LP	48
LA 3279	Hough site	Room 1	LP	12.23
LA 3279	Hough site	Great Kiva	LP	97.38
LA 5390	Largo Creek		LP	xxx
LA 5793	Ormand	Room 97	LP	71.07
LA 3099	WS Ranch/McKeen	Kiva G	LP	13
LA 4031			LP	xxx
LA 68709			LP	xxx
LA 11075	Gatton's Park		Pit Structure	81
LA 11076	Gatton's Park		Pit Structure	121
LA 71877	Lake Roberts Vista		Pit Structure	16.72
W:9:83	Lunt		Pit Structure	xxx
LA 19071	Warm Springs	Kiva	Pit Structure	62
LA 43840			Pit Structure	21
LA 47626			Pueblo	112
LA 5404			Pueblo	xxx
LA 3259	WNMT 41		Mogollon	14
LA 3278	WNMT 92/Glenwood Highway Salvage #1	Kiva	Mogollon	15.9
LA 39261		Structure H	Mogollon	31.2
LA 39261		Structure K	Mogollon	33
LA 39261		Small Kiva 1	Mogollon	xxx

In Chapters 5 and 6, I discuss how my definition of a communal structure came to change during this analysis. I also discuss whether my initial ideas about what defined communal structures were accurate or not. What became clear during the course of this analysis is that, in general, there is a great deal of location, size, and architectural diversity in the assemblage of Mogollon communal structures (Appendix II).

Some researchers referred to unexcavated depressions at sites as “possible kivas,” but in the absence of additional evidence to support the claim, such structures were not included in the database. The structures at the end of Table 4.1 were included because they were referenced in the literature as communal structures or kivas and because there was some additional information available for them (see Appendix II). In general, consistent and comprehensive information about internal architectural features, construction technique, and structure size was not always available for each of the 206 structures. Structures for which there were missing data are included in the database (and as previously stated, *xxx* was used as the designation for missing data). A more detailed list of the available data for all of the structures included in the analysis is provided in Appendix II.

Architectural Analyses

Each of the variables presented in this section was used in the analysis because each helps to measure the level or degree of aggregation or integration present at a site. Some of these variables were easier to analyze than others were; for example, site reports that provided the size of an excavated communal structure were relatively straightforward. However, a variety of factors, including the kind of original investigation (survey, testing, or large-scale excavation), influenced the amount and nature of the data obtained from any given site. For example, an excavation strategy that involved testing a structure rather than complete excavation influenced the ability of researchers to calculate the size and shape of a communal structure accurately.

Although it is extremely important to my analysis, another variable that was often difficult to evaluate was that of communal structure contemporaneity. Radiocarbon, archaeomagnetic, and/or tree-ring dates were available for fewer than half of the communal structures in the database (n = 93) (Table 4.1, Chapter 5, and Appendix II).

All of the other structures were dated via ceramics and construction histories at specific sites. In some instances, researchers have provided a detailed construction history for the communal structures at their sites (Creel 1998, 1999a), and it is clear that although structures may date to the same period, they were not necessarily used at the same time. Unfortunately, in many cases, the use dates for structures are provided simply in terms of a phase or period range. In such instances, it is difficult to ascertain whether the multiple communal structures found at sites were contemporary. Variations, discrepancies, and inconsistencies in these communal structure data are detailed in the "notes" column in Appendix II. Appendix II also provides all additional information, including the sources for these data.

Communal Structure Frequency

The issue of communal structure frequency is perhaps one of the most important in this analysis (Anyon and LeBlanc 1984; Hill 1970; Longacre 1970; Steward 1937). Adler (1989b), following Johnson (1982), has suggested that increasing population size that results in an increase in the number of decision-making entities accounts for the appearance of a communal structure within a community. The number of communal structures found at a site is used as an indicator of the presence of population aggregation and/or social integration (Hill 1970).

In my analysis, I predict that aggregated sites should have multiple contemporary communal structures. The communal structures at an aggregated site should also display a great deal of architectural variation (i.e., size, shape, and number and kinds of features) because they are built by autonomous groups of people who reside within the same community (see below for a more detailed discussion of this variation). The inverse of this is that integrated sites will have fewer contemporary communal structures, and that when there are multiple contemporary structures at an integrated site, they will be similar, if not identical, architecturally. Sites that have multiple contemporary communal structures may reflect the presence of aggregation and integration at a single site. In these cases, I would expect one large, centrally located communal structure and one or more, smaller communal structures.

In order to calculate communal structure frequency, I included all of the communal structures for which phase or period dates were available (Appendix II); I did not include structures with dates that spanned multiple periods (i.e., A.D. 600 to 1200). I subsequently calculated communal structure frequency averages for each period and displayed them in a single figure, in an effort to depict long-term frequency trends (Figure 5.1). Averages for each of the Early, Middle, and Late Pit Structure periods, as well as for the Early and Late Pueblo periods, all of which were defined in Chapter 3, are also provided (Table 5.1). I subdivided the Late Pueblo period into Early Late Pueblo (A.D. 1150 to 1300) and Late Late Pueblo (A.D. 1300 to 1400) to obtain a better perspective on the changes that occurred during the Late Pueblo period. The Early Late Pueblo period is essentially before the beginning of a significant drought that affected some of the Mogollon region. The Late Late Pueblo period is the period that follows a significant drought throughout the region (circa A.D. 1270). I created bar graphs for each of the periods in order to depict communal structure frequency.

Communal Structure Location

The location of a communal structure within a site is also an important component of this research. If the structure is located in an area that is physically separated from the habitation structures at a site or away from a site, it may serve more than one group of people. In these cases, the people using an isolated communal structure may have a regular cycle of gathering for communal activities, perhaps during particular times of the year. An isolated structure can serve an integrative function, as it provides a centrally located structure within which regional integration may take place. For communal structures found within sites (e.g., attached to a roomblock, situated near a particular roomblock, or centrally located at a site), the location of these structures is important because it can provide evidence for aggregation and integration.

Ethnographers have provided evidence to suggest that the distribution of kivas in contemporary pueblos has a great deal of socio-ceremonial significance (Dozier 1970b:126; Eggan 1950). For instance, ethnographic data collected from Pueblo of Acoma in western New Mexico during the mid-twentieth century, shows that there are two kivas in the pueblo, and each structure is located in the center of the roomblock with which it is associated (Ladd 1979:725). In this instance, I interpret the location of the structures as representative of population aggregation at the site, as was the case at the beginning of the occupation of Pot Creek Pueblo (Crown and Kohler 1994). In fact, ethnographic work with the people of Acoma Pueblo provides evidence for aggregation (in the form of two moieties) within this community (Ladd 1979). A site with multiple contemporary communal structures associated with specific areas of the site, or one with a single communal structure associated with a particular roomblock is evidence for population aggregation at a site. In the latter case, the communal structure is likely used by the roomblock's inhabitants, who have chosen to segregate themselves in this manner. It is possible that some of the people aggregating at a site build a communal structure, while others do not (Cordell 1997).

As stated in Chapters 1 and 2, the people who form an aggregated community do not necessarily share common socio-political or religious views. These differences are visible in the archaeological record. For example, I have excavated sites in the northern Rio Grande area, dating to the Classic Ancestral Pueblo period (A.D. 1235 to 1600) that are situated less than 500 meters from one another and display differing architectural patterns (Nisengard n.d., Schmidt 2006; Vierra et al. n.d.). Architectural diversity also exists within a site if there are people from different social or ethnic groups.

Location data were available for 133 of the communal structures (Appendix II). Location data were analyzed using a coding system (Appendix I). Isolated communal structures, those that are at least 50 meters from habitation structures at a site, were coded with an 'I.' Communal structures associated with particular roomblocks were coded with an 'A.' Structures located in a prominent area of the site and not associated with a particular roomblock or set of habitation rooms were coded with a 'P.' Communal structures that were spatially separated from the habitation structures at a site were coded with an 'S.' Using the location codes, average frequency for each location was calculated by period, which are illustrated with graphs and tables. These illustrations depict trends in communal structure location through time and provide evidence that I use to show changes in aggregation and integration, in that isolated, spatially separated, and prominent communal structures provide evidence for social integration, and communal structures adjacent to or within particular roomblocks are indicative of population aggregation.

Communal Structure Size

The variable "size" is also important and is in many ways impacted by the same factors (e.g., problems with reporting) that influence frequency and location. Most basic to a discussion of aggregation and integration in an area not characterized by social hierarchy is that smaller structures provide meeting places for fewer people, while larger buildings are more likely to serve larger groups. It is important to recognize the fact that smaller structures may be used by multiple groups of people at different times, as is the case in many contemporary Pueblo communities including San Ildefonso Pueblo, located in northern New Mexico, and Zuni Pueblo, located in western New Mexico (Dozier 1979a, 1979b). In this analysis, however, the use of smaller structures by a number of groups cannot be determined, as I have found no discussion in my review of the existing literature that would provide evidence for such behavior. Therefore, the presence of numerous contemporary small or large communal structures is indicative of population aggregation.

As was discussed in the previous section (i.e., communal structure location), if there is only one small communal structure at a site it may be indicative of one of two phenomena. If the small structure is centrally located at the site, the structure may indicate social integration at a site with a relatively small population. If, however, the structure is associated with a particular area of a site, or with a specific roomblock, the small structure provides evidence for population aggregation, with other groups at the site not building communal structures. Evidence specifically for social integration comes in the form of a single large communal structure, which indicates a high degree of integration, because all members of a community are able to interact in the same space at the same time.

Communal structure size was available in many of the published and unpublished reports. However, in an effort to include data from as many structures as possible, I sometimes had to calculate measurements based on plan views of these structures. Size averages for each period were calculated and are depicted in graphs and in tables, which also include standard deviation data.

Communal Structure Shape

Another variable considered is that of structure shape. Shape is an important aspect when considering within-site architectural standardization. I began with the idea that it is possible that the shape of communal structures is associated with temporal changes in the architectural techniques used to build habitation rooms (e.g., the change from circular to square and rectangular pit structures) and is not related to aggregation and integration. However, it was important to analyze this characteristic to help address the possibility that contemporary variations in structure shape are related to aggregation and integration. One of the factors used to evaluate the three hypotheses presented in Chapter 1 is that if a community is aggregated then there should be greater variation in contemporary communal structure shape because the people at the site do not necessarily share the same backgrounds. On the other hand, if a community is socially, politically, ritually, and economically integrated, there will be less architectural variation present, because underscoring similarities would be important to an integrated community. Shape data were available for those communal structures that had been subject to testing and for some that had not been, shape was based on the way in which the unexcavated structure looked (e.g., Woodrow ruin [Lekson 1990]), located in the Gila valley of southwestern New Mexico). Appendix II provides information about the structures for which shape was projected by researchers who visited the site but did not excavate, and for excavated structures.

Communal structure shapes were grouped into six categories; rectangular, circular, D-shaped, oval, square, and irregular (Appendix II). I then created a chart depicting the number of communal structures of each shape by period. This Chapter 5 chart depicts the six shapes and illustrates shape change through time. I also charted structure shape for each period to provide a more detailed picture of the variability that existed during the Pit Structure and Pueblo periods.

Communal Structure Hearth Shape

Changes in hearth shape have been an important aspect of communal structure research in the Mogollon region (Anyon and LeBlanc 1980, 1984). Shafer (1995:40-41) has provided evidence that changes in hearth shape are largely temporal and linked to changes in subsistence strategies. Given the research conducted by Shafer (1995) and others (e.g., Anyon and LeBlanc 1980), I decided to look for patterns, or a lack thereof, in communal structure hearth shape. Specifically, I was interested in the ways in which hearth shape could be related to issues of aggregation and integration. As it follows, aggregated sites are expected to have multiple contemporary communal structures with variation in the shapes of the hearths, because they are a result of autonomous groups coming to live together in a single community while maintaining their traditional distinctive construction techniques. Integrated sites will have fewer contemporary communal structures, with a standard hearth shape found in each. Standardization in construction is one way to shed uniqueness and to identify with the integrated group. If hearth shape is indeed time dependent, I expected to find changes in hearth shape across time.

Hearths were grouped into six categories, including rectangular, circular, oval, square, irregular, and no formal hearth. The final category is interesting because some of the communal structures in this assemblage are cited as having no formal hearths. A figure depicting communal structure hearth shape through time is provided in Chapter 5, as is a detailed discussion of the kinds of hearths that have been found in Mogollon communal structures to assess the degrees of population aggregation and social integration at sites in the region. This discussion includes period information on structures that have no hearths and a discussion of the significance, or lack thereof, of the absence of a formal hearth.

Communal Structure Orientation

The orientation of a communal structure is a useful measure of aggregation and integration when considered in terms of consistency and variation. For this analysis, redundancy in architectural orientation is suggested to be indicative of the presence of integration, although some researchers have argued that redundancy in structure orientation relates to function (i.e., to facilitate solar energy harnessing and/or to promote thermal efficiency; Kang 1989). While structure orientation may be related to thermal efficiency, it is important to consider patterns. I expect that greater variation in contemporary structure orientation will indicate population aggregation, and increased standardization should be associated with social integration. Structure orientation for the sites included in Appendix II was available for the majority of the structures. Orientation was largely based on the direction of ramp or stepped entryway. In some cases, there was no evidence of an entryway; hearths and sipapus within communal structures are sometimes aligned, in cases when these data were known, I used them to determine structure orientation (Creel and Anyon 2003).

The analysis of communal structure orientation is presented in a table in Chapter 5, as is a discussion of variation. I included eight categories for orientation (north, northeast, east, southeast, south, southwest, west, and northwest). There is certainly a temporal trend in overall orientation data; however, I am interested in a more synchronous analysis of these data. As a means to this end, I include a chart of structure orientation by period and a discussion of how redundancy in this characteristic relates to aggregation and integration.

Communal Structure Wall Construction

Initially, I thought that detailed information concerning wall construction characteristic of communal structures, including wall height and wall, floor, and roof materials, would be useful components of this analysis. This type of information can be used to aid in the initial definition of what a communal structure is, which can be related to issues of aggregation and integration. For example, communal structures may be differentiated from other structures at a site because they are deeper, and the walls are more elaborately constructed than habitation rooms. Very elaborate rooms would be indicative of specialization in construction.

Architectural research has provided evidence that can be used to suggest that specific kinds of materials may be used to build communal facilities (e.g., non-local woods, clays, sands, stones; Anyon and Creel 2002; Creel 1998). These materials may at times be difficult to procure or may require people to travel long distances to obtain such items (see Anyon and Creel 2002). If the techniques employed to construct particular kinds of buildings are significantly different from those used to build habitation structures, they lend credence to the idea that these structures are communal in nature (Anyon and Creel 2002; Diehl 1990).

In my analysis, variation in wall construction techniques at a site is indicative of population aggregation. In these cases, the people coming together to live at a site remain relatively autonomous and build their communal structure in a manner that is in some way unique to them. Roof, wall, and floor construction are important, because they are evidence for identifiable patterns in techniques associated with specific groups of people. Socially integrated sites should display more standardization in construction technique. If there are multiple contemporary communal structures at an integrated site, they should be constructed using similar techniques. My discussion of construction technique includes an investigation of individual communal structures and the ways in which they were built, as well as a chart depicting the most common construction techniques used to build Mogollon communal structures. Again, I expect to see variation in communal structure construction technique at aggregated sites and very little or no variation at integrated sites. Sites with one communal structure will be difficult to analyze, and in such cases, construction technique will be assessed in conjunction with size, location, and frequency.

An initial review of the available archaeological literature concerning construction techniques and materials revealed that there is a great deal of inconsistency in data recording. In some cases, researchers state that communal structure walls are subterranean but fail to discuss specifics about these walls (i.e., plaster or masonry). In other reports, there is an absence of any data relating to construction. Many scholars identify these structures only as subterranean and do not provide any additional information about specific construction techniques. Many of the reports that provided other information for this analysis simply did not include these kinds of data. Ultimately, as is the case with several other categories, this one is not complete. However, I did collect construction material data when available; these data are presented in Appendix II. Although collection inconsistencies prevent a detailed analysis, a general discussion of construction variation is included in Chapter 5, as it is an important measure of aggregation and integration.

Dismantling, Destruction, Burning, and Burials

Anyon and Creel (2003) discuss the purposeful destruction of Mimbres Mogollon communal structures. The authors provide evidence some communal structures were built with destruction in mind, and when they had served their purpose within their communities, they were either collapsed or burned. I wondered if purposeful destruction was a practice only associated with the ancient Mimbrenos, or if this occurred in other areas of the region. I looked at evidence for dismantling, burning, and/or destruction in all Mogollon communal structures. I also felt that communal structure destruction relates to aggregation and integration.

If multiple communal structures are used at a site simultaneously and have no evidence of dismantling or burning, they are likely indicative of aggregation at the site. If however one communal structure is destroyed at a site before a new one is built and used it can be indicative of social integration in that the community feels that one communal space must be ruined before a new one can take its place (see Creel and Anyon 2003).

I also looked at burials as indicative of the ritual closing of a communal structure. As is the case with dismantling, destruction, and burning, burials within the walls of a communal structure provide information about aggregation and integration. If the residents of a community destroy one communal structure, and/or use it for burials, such that it would not be reused, before building a new structure, there is an indication of social integration at the site. If multiple structures are in use at the same time, there are indications of population aggregation.

Methods for Communal Structure Data Collection

Each of the variables presented in this section was used in this analysis because each helps to measure the level or degree of aggregation or integration present at a site. These data are presented in Appendix II. In some cases, I found it useful to code data, and coding information can be found in Appendix I.

As previously stated, information about the 206 communal structures from 110 Mogollon sites included in this analysis was gathered from published and unpublished reports, journal articles, and books. A great deal of the information about these architectural features was available from the Archeological Records Management Section (ARMS) of the Historic Preservation Division at the Laboratory of Anthropology in Santa Fe, New Mexico. The Mogollon region is subdivided in a variety of ways; these divisions are discussed in Chapter 3.

In my analysis, I use the Mimbres Valley, Forestdale, and Western Pueblo areas that include Grasshopper pueblo, and the Jornada areas to discuss differences in communal structures found in the Mogollon region. There are certain areas of the region (i.e., the San Simon) for which there are no recorded communal structures, and they are not discussed in my analysis.

Chapter 5 presents the analysis of 206 communal structures, located at sites that represent many of the diverse areas of the Mogollon region. By studying sites from across a broad area, I am better able to present a discussion of patterns of population aggregation and social integration in the Mogollon region as a whole over a 1200-year period. In a perfect world, the database would include only those communal structures that are architecturally distinct from all other buildings at a site. However, this was not always the case and I have included all structures identified as communal in the analysis presented in Chapter 5. Even those small communal structures that have been the subject of debate and discussion are included in the analysis for three reasons. First, because field researchers characterized these structures as communal while in the field, it seems presumptuous to remove structures arbitrarily because their identifications are contentious. Second, small communal structures are associated with all of the Pit Structure and Pueblo periods, including some Late Pueblo period communities that did not have pit structure components. Finally, small communal structures are found in contemporary Pueblo communities and appear to reflect aggregation at these sites (Ladd 1979). In the final section of Chapter 5, I discuss the alternative results I achieved when I removed all structures smaller than 20 m^2 (n = 63) from my analysis in an attempt to determine if their presence has affected my interpretations of aggregation and integration in the Mogollon region.

CHAPTER 5

AN ANALYSIS OF MOGOLLON COMMUNAL STRUCTURES

As discussed in previous chapters, I am using the frequency of communal structures at sites, the spatial location of communal structures within or between sites, the size of Mogollon communal structures, communal structure shape, wall construction techniques, internal communal structure features, communal structure hearth shapes, and communal structure orientation to measure aggregation and integration. I discussed the importance of each of these factors and their relationships to aggregation and integration in depth in Chapter 4. In this chapter, each variable is presented with a brief review of its relationship to these phenomena. The results from the detailed analysis of the communal structure data are discussed by topic in order by period (Table 5.1).

Table 5.1. Number of Sites and Communal Structures in the Assemblage by Period. († Communal structures not dated to a specific period are not included in the analyses presented in this chapter. Please note that some sites are listed in multiple periods and therefore the total number of sites is 136 and not 110 as indicated in the text and in Appendix II.

Period Designation	Dates (A.D.)	Number of sites	Number of communal structures
Early Pit Structure (EPS)	250 to 700	18	22
Middle Pit Structure (MPS)	700 to 850	7	10
Late Pit Structure (LPS)	850 to 1000	23	36
General Pit Structure †	250 to 1000	7	6
LPS to Early Pueblo †	900 to 1150	4	7
Early Pueblo (EP)	1000 to 1150	36	60
Early Late Pueblo (ELP)	1150 to 1300	21	39
Late Late Pueblo (LLP)	1300 to 1450	10	14
Late Pueblo (LP) †	1150 to 1450	5	5
General Pueblo †	1000 to 1450	2	2
General Mogollon †	250 to 1450	3	5
Totals		**136**	**206**

Table 5.1 provides the number of communal structures dating to each period and reiterates the Mogollon chronology used to analyze these data. A structure was analyzed when specific or period dates were available (e.g., EP period). However, structures that could not be associated with a particular period (e.g., those dating to the general Pit Structure period) were excluded from the analyses.

Specific dates were not available for 25 of the communal structures from 21 sites (e.g., structures with date ranges that span the General Pit Structure, LPS to EP, LP, General Pueblo, and General Mogollon periods); while they are included in the database (Appendix II), they are not analyzed here (Table 5.1). The majority of these structures, (n = 20) are not analyzed because the analysis is conducted chronologically and without this control, they lack a cultural and/or temporal context. I included them in Table 5.1 and in Appendix II, because they are Mogollon communal structures, and someone else conducting research on these structures may find them useful. The five structures that date to the Late Pueblo period are included in some of the analyses and are noted in such cases.

As stated in previous chapters, there are 110 sites in the Appendix II database. However, some sites have multiple structures that date to multiple periods and are therefore counted in more than one period (Figure 5.1). As a result, as indicated in the notes, the total number of sites listed in Table 5.1 is 136 and not 110. Again, general information including site numbers, names, dates, structure sizes, and room numbers was presented in Table 4.1 in Chapter 4. Detailed information about each individual structure is provided in Appendix II.

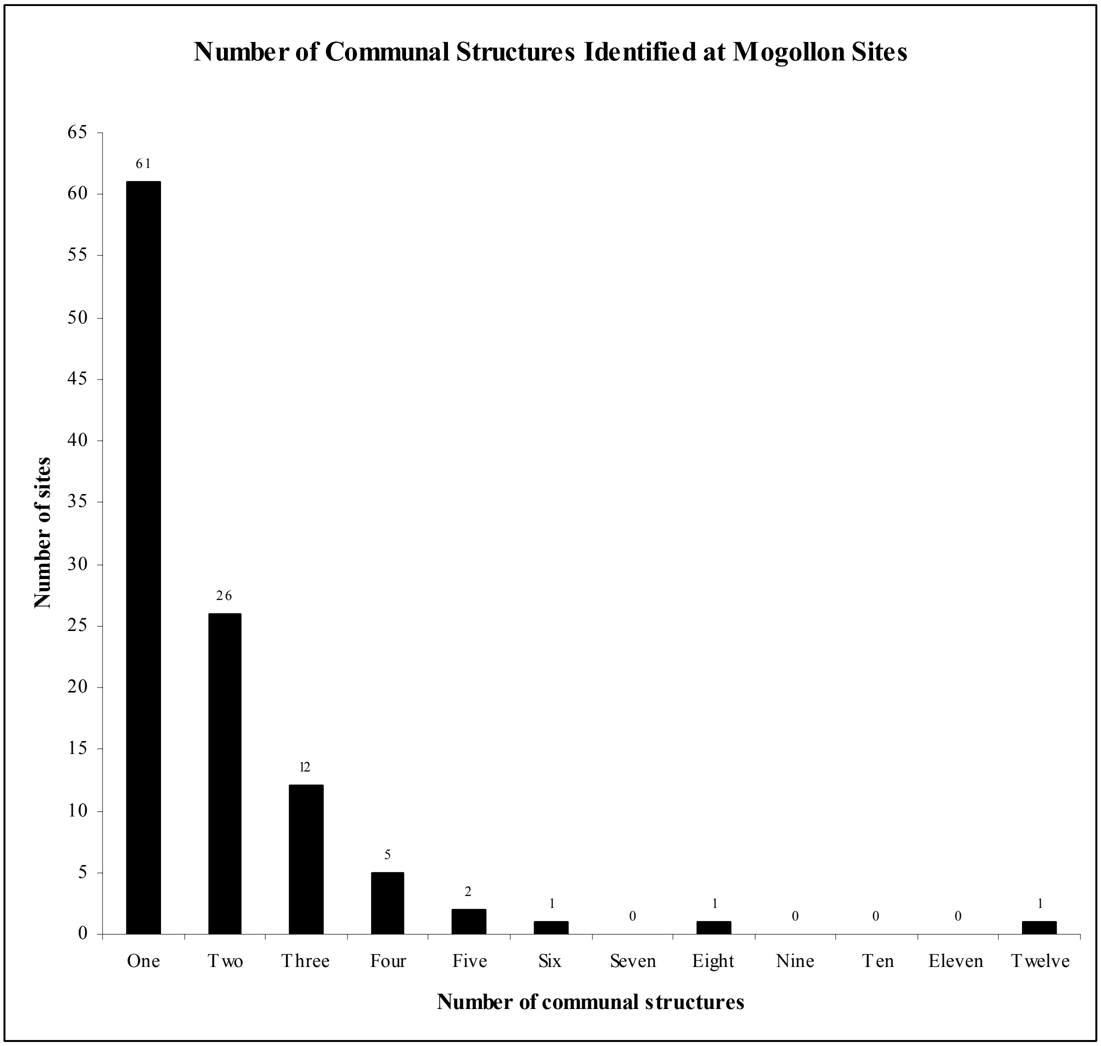


Figure 5.1. General Communal Structure Frequency for Mogollon Sites (109 of the 110 sites and 205 of the 206 communal structures from the Appendix II database are included here, because it is not clear from site reports, provided by researchers, how many communal structures are present at the Lunt site).

In an effort to consider the architectural diversity present in the Mogollon region, the communal structures included in these analyses are from sites situated in all areas of the region as discussed and defined in Chapter 3. These sites represent the diversity in topographic location, vegetation, and elevation characteristic of sites located within the Mogollon region.

Figure 5.2 differentiates between a hill top, a mesa top, a terrace, and a ridge because all of these terms have distinct, commonly known geographic and geological definitions. A hill is a geological feature that is higher than all surrounding features, but it is smaller than a mountain. A mesa is an elevated feature with a flat top and is surrounded by steep cliffs on all sides. A terrace is an elevated geological feature that forms over time by deposits from a water source (e.g., a stream or a river). Finally, a ridge is a long, narrow crest, which is elevated above surrounding features. These definitions are standard United States Geological Survey definitions and are commonly used by archaeologists to describe a site's topographic location. While there may be some overlap in the use of ridge, terrace, mesa, and hill, each is a distinct formation, so I opted to use each in Figure 5.2, as noted by the reporting archaeologist (Appendix II).

As has been previously pointed out by researchers (Anyon and LeBlanc 1980; Cordell 1997), terraces and ridges are the most common topographic locations for Mogollon sites across time (Figure 5.2). Such locations, particularly first terraces above rivers and drainages, provide relative ease of access to water and arable land, while simultaneously providing views of surrounding areas. Sites situated on flood plains, mesa tops, hill tops, and hill slopes are relatively rare (Figure 5.2). Flood plain locations may have left residents vulnerable to both natural hazards and outsiders (LeBlanc 1999). Mesas and hills may not have provided access to local resources, although the majority of mesa top locations date to the EPS period and may reflect a continuation of one Late Archaic settlement pattern discussed by Hard and Roney (1999, 2001) and others (LeBlanc 1999).

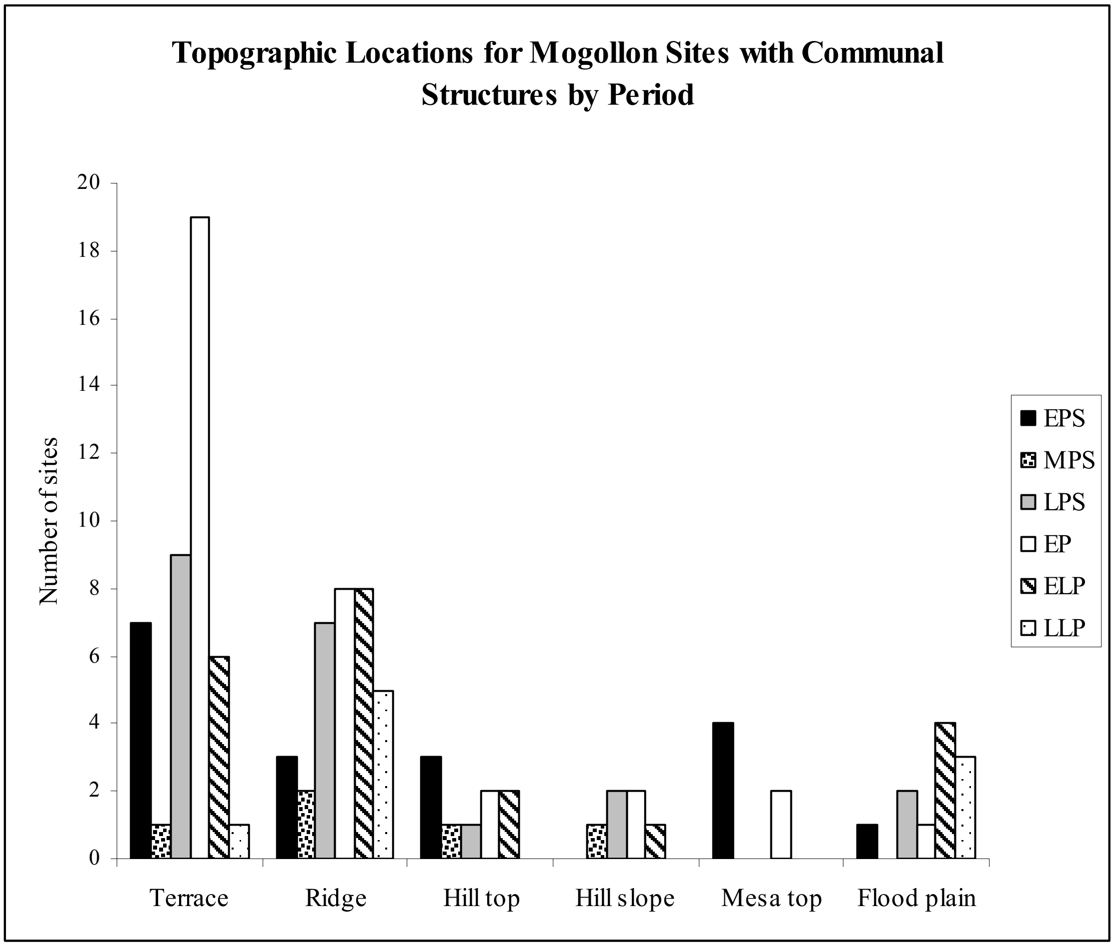


Figure 5.2. Topographic Locations of Mogollon Sites with Communal Structures by Period.

In Figure 5.3, I use four vegetation types, woodland, forest, scrubland, and grassland. I differentiate between woodland and forest vegetation because woodland areas are dominated by piñon/juniper and oak (the distribution of which is dependant on site location), while a forest has a preponderance of conifers, spruce, aspens, and other trees. Mogollon sites tend to be situated in areas dominated by woodland and grassland vegetation. However, a few sites, are located in higher elevations (e.g., in the Jornada region), others are situated in forested areas, and still others are in desert scrublands.

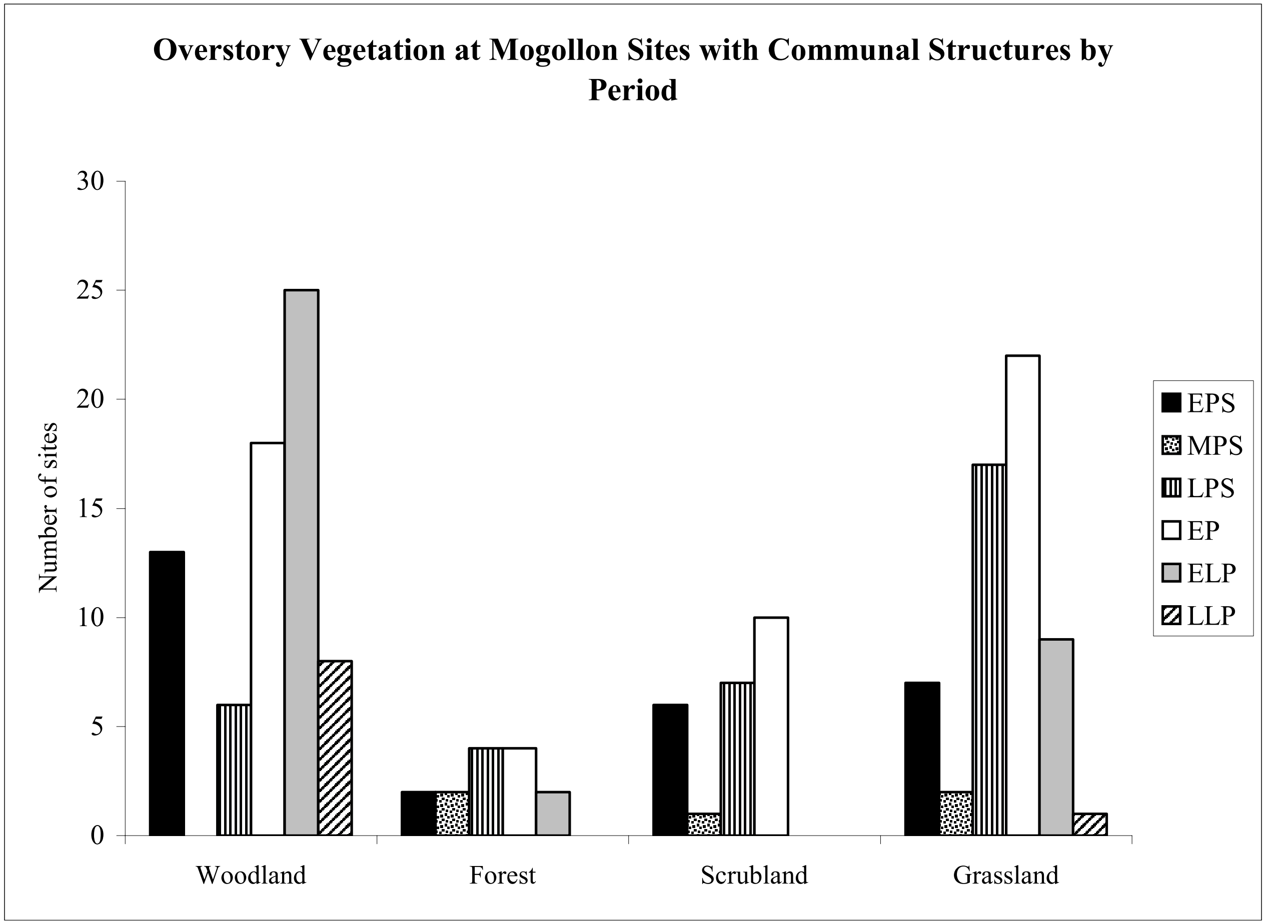


Figure 5.3. Prominent Vegetation Types for Mogollon Sites with Communal Structures by Period.

The greatest variation in site location, in terms of vegetation, occurs during the EPS, LPS, and EP periods (Figure 5.3). While woodland and grassland locations continue to be popular during these three periods, other site preferences are visible in the data as well. It is during the LPS and EP periods that some researchers (Anyon and LeBlanc 1980) have suggested that population increase occurred in many areas of the region.

Figures 5.4 to 5.9 display elevation variation for 100 Mogollon sites dating from the EPS period to the LLP period (elevation data were collected from the Laboratory of Anthropology, http://potsuii.arms.state.nm.us/index). Mogollon sites are situated in areas with a great deal of elevation variation, although no EPS or LLP period sites were built at very high mountainous areas (7000 to 8000 ft) or very low (3500 to 4500 ft) elevations frequently associated with floodplains (Figures 5.4 and 5.9). During the EPS period, all sites are clustered between 4500 and 7000 ft in elevation (Figure 5.4). This kind of grouping does not occur during any other period, this provides evidence for regional integration, as consistency in site location is one piece of evidence for integration listed in Table 1.1. Sites situated at an elevation of 5500 to 6500 ft, most frequently on terraces and ridges, are the most common across time (Figures 5.4 to 5.9). The greatest elevation variation (i.e., 4000 to 8000 ft) occurs during the EP period when Mogollon sites are established on terraces, ridges, hill tops, hill slopes, mesa tops, and flood plains. This diversity is not surprising as site density in the Mogollon region is the highest during this period (Anyon and LeBlanc 1980, 1984; Cordell 1997).

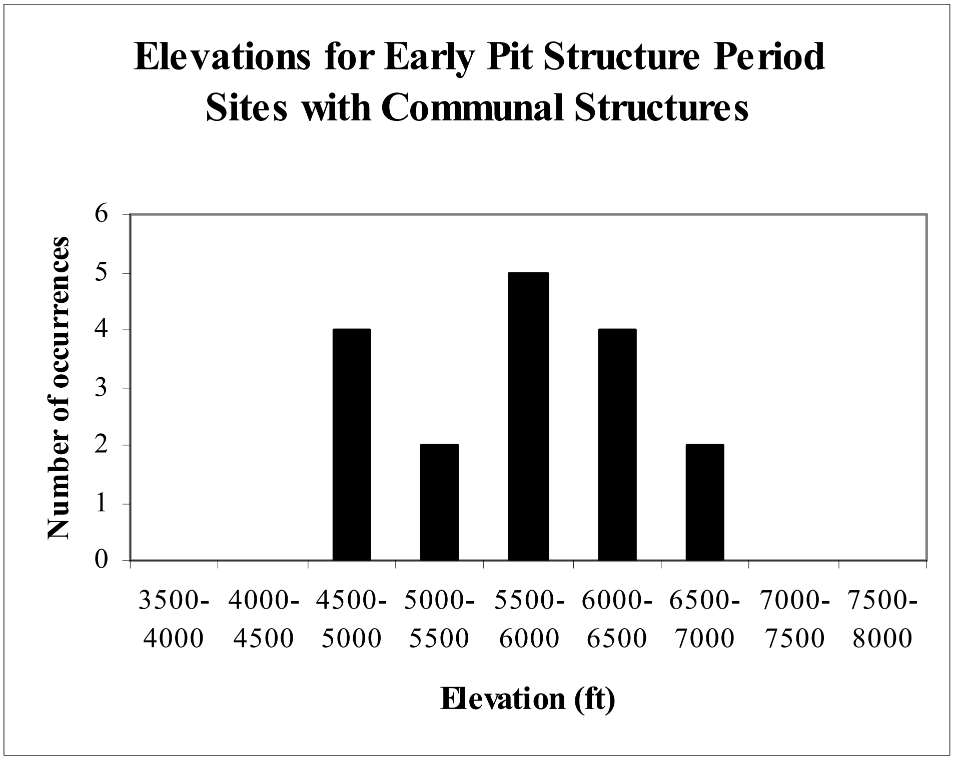


Figure 5.4. Elevations for EPS Period Sites with Communal Structures.

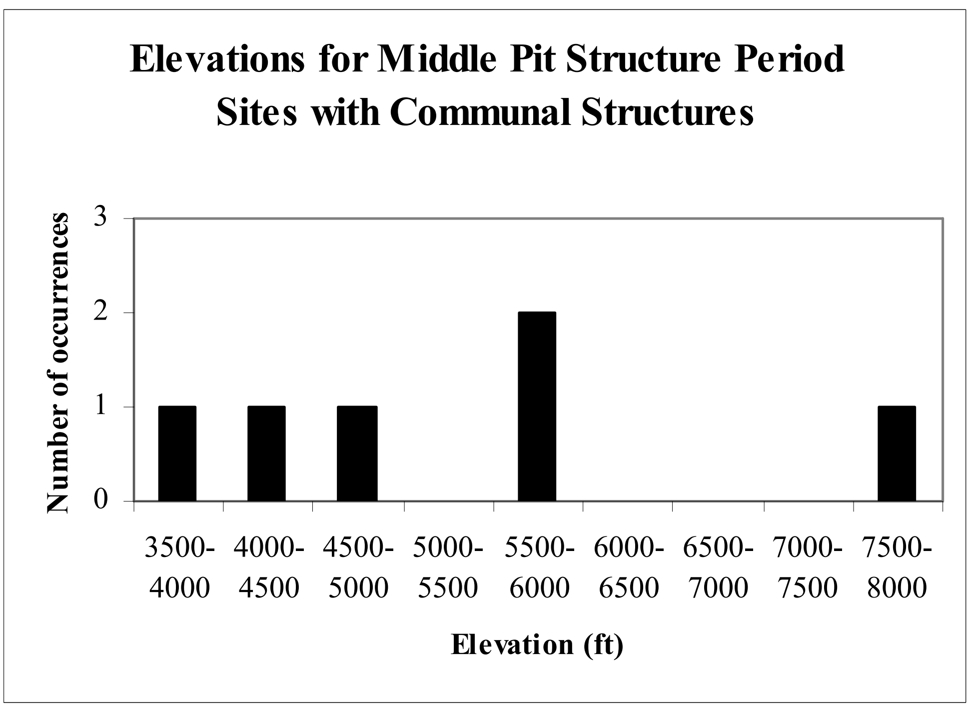


Figure 5.5. Elevations for MPS Period Sites with Communal Structures.

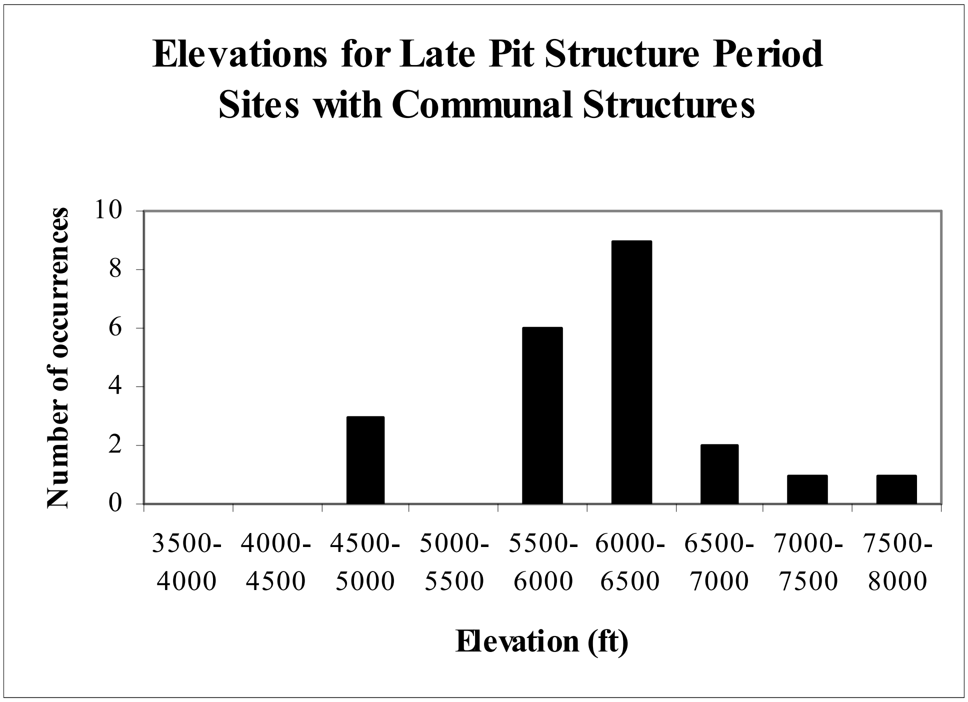


Figure 5.6. Elevations for LPS Period Sites with Communal Structures.

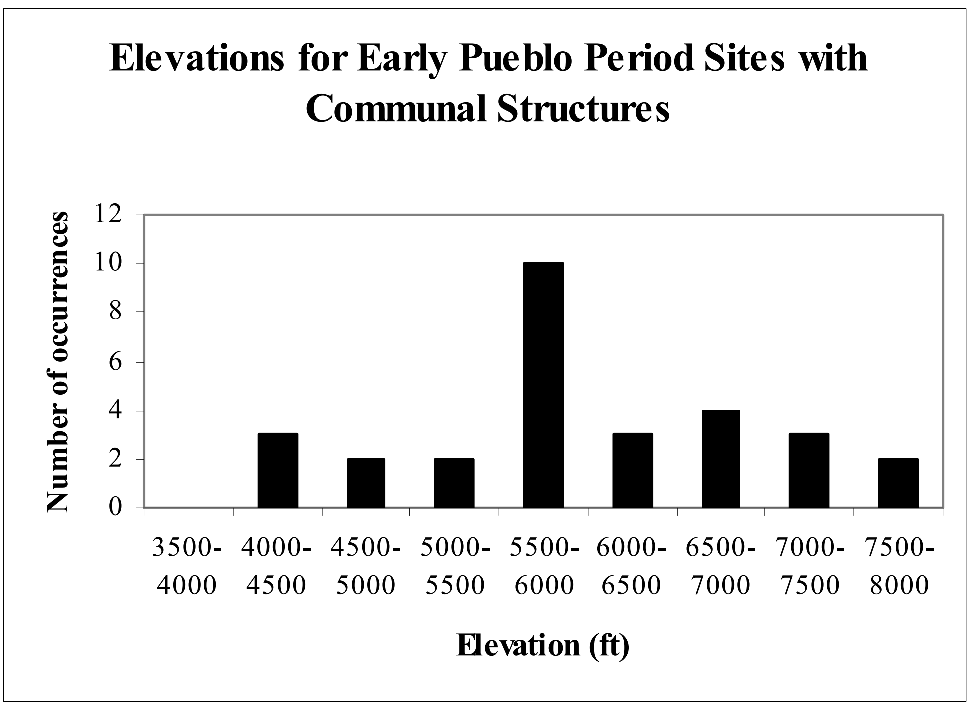


Figure 5.7. Elevations for EP Sites with Communal Structures.

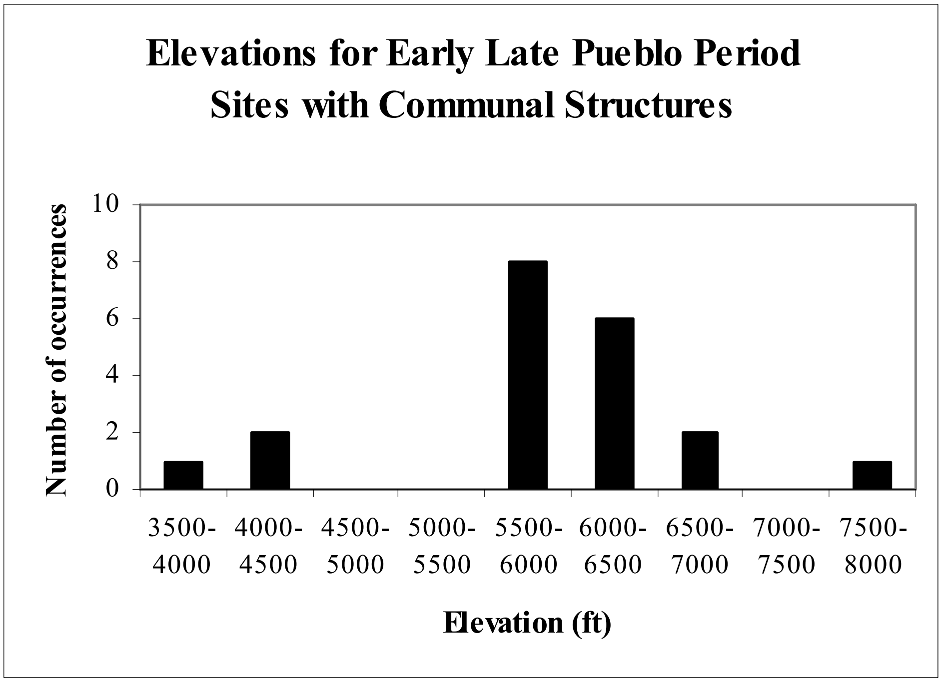


Figure 5.8. Elevations for ELP Period Sites with Communal Structures.

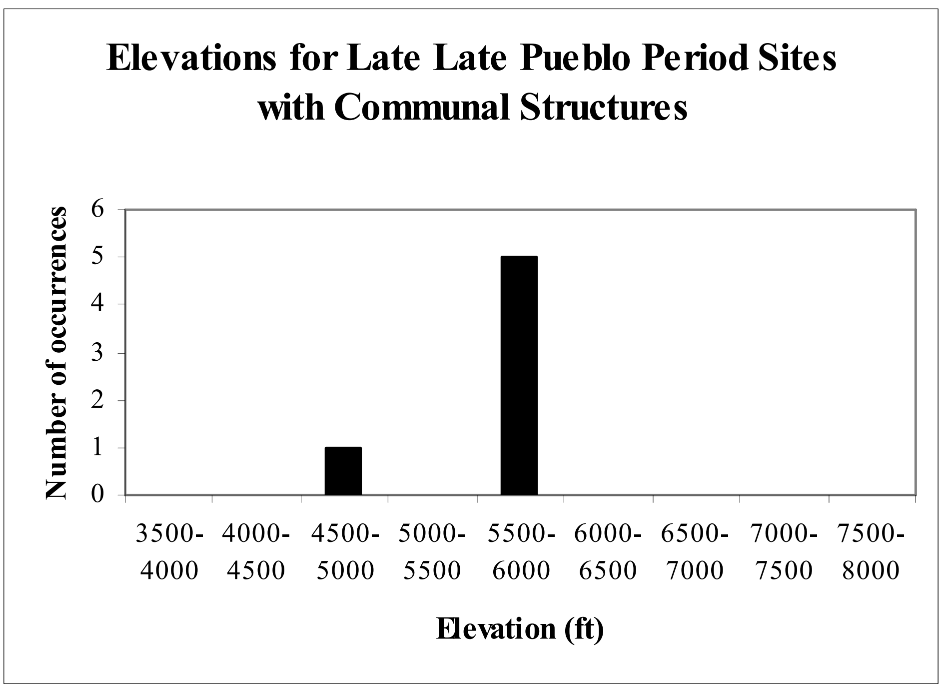


Figure 5.9. Elevations for LLP Period Sites with Communal Structures.

The importance of the topographic, vegetation, and elevation data presented in these sections is not only in reflecting site selection diversity, but also because these data are useful for evaluating traditional views regarding location preferences as they relate to issues of aggregation and integration in the Mogollon region across time (e.g., Anyon and LeBlanc 1980). If population aggregation occurred at sites in the Mogollon region across time, I would expect to see greater variation in site topography, vegetation, and elevation as people aggregating in the region will bring preferences from elsewhere into the area. If social integration occurs most commonly at sites, I expect greater concentrations of sites in areas with the greatest access to resources.

Topography, Vegetation, and Elevation in the Mogollon Region: A Summary

An analysis of topography and vegetation from Mogollon sites revealed a great deal of consistency in site preference and little data that could be used to address issues of aggregation and integration. Topographically, the majority of Mogollon sites are situated on terraces and ridges; this site preference remains relatively constant across time (Figure 5.2). Vegetative variation also remains relatively constant across time from the EPS period into the ELP period (Figure 5.3), with people selecting woodland and grassland locations for their sites across time. While topography and vegetation do not reveal a great deal about aggregation and integration, elevation data do appear to reflect differences that may be associated with these phenomena (Figures 5.4 to 5.9). Elevation data for the EPS period provide evidence for a preference for site location between 4500 and 7000 ft. LeBlanc (1999:68) has pointed out that almost all EPS period sites are situated on hilltops, mesa tops, or in some defensible location. This site location preference provides evidence for social integration during the EPS period because people living in these communities are building a structure (e.g., a wall) to support a communal effort.

In contrast to the EPS period clustering of sites at middle range terraces, mesas, and hilltops, during the EP period, site elevation varies the most. It is during this time that researchers (Anyon and LeBlanc 1980; Cordell 1997) suggest that population aggregation occurred in many areas of the Mogollon region. While the majority of sites dating to the EP period are situated at an elevation of 5500 to 6000 ft, site elevation varies from 4000 to 8000 ft (Figure 5.7). This variation appears to reflect at least some degree of aggregation during the EP in that variation in site location choice may be indicative of increasing population levels via aggregation. These data are somewhat ambiguously related to aggregation and integration. However, the following sections include analyses of characteristics more useful for measuring population aggregation and social integration.

Frequency of Communal Structures

The frequency of communal structures is directly related to population aggregation (Adler 1989a; Hill 1970; Johnson 1982; Longacre 1966) and social integration (Adler 1989b; Hegmon 1989; Hill 1970). The hypotheses posed in this research are that sites with multiple contemporary communal structures are associated with high degrees of population aggregation, while sites with fewer contemporary communal structures or more likely only one structure represent socially integrated communities. At issue is whether there are changes in communal structure frequency over time (Figure 5.10). A second issue deals with differences in aggregation and integration at contemporary sites in various areas of the Mogollon region, which relates to organizational diversity in the region. In some cases, sites have multiple small communal structures and one large one, in these cases it is likely that integration occurred within an aggregated community, but this is discussed in detail throughout this section. There are 206 communal structures from 110 sites in the Appendix II database, but specific dates were not available for 25 of the communal structures (the 25 structures are indicated with an † or a * on Table 5.1). Five of the LP period structures cannot be dated to the early or later part of the period, but they are included in portions of the frequency analysis (Figures 5.10 and 5.11). The remaining 20 structures, for which specific dates are not available, are not included in any of the analyses of average communal structure frequency.

An analysis of the 188 structures for which dating information was available (including the five structures that date only to the LP period) revealed that the average frequency of communal structures per site increases from the EPS period to the EP period (Figures 5.10 and 5.11). The average frequency of communal structures per site during the LP period appears to increase (Figure 5.10); however, when the period is separated into early (A.D. 1150 to 1300) and late sections (A.D. 1300 to 1450**;** Figure 5.11), there is an increase followed by a decrease. There is an increase in average communal structure frequency during the ELP period (A.D. 1150 to 1300). However, the average frequency decreases during the LLP period (A.D. 1300 to 1450) to an average similar to those seen during the EPS and MPS periods.

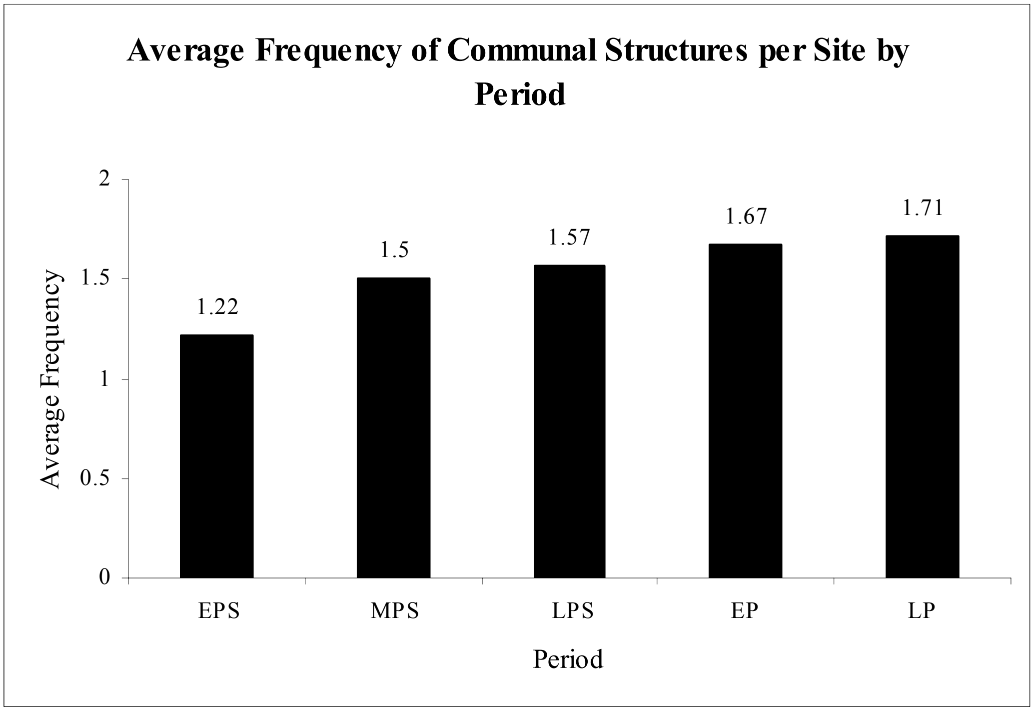


Figure 5.10. Average Communal Structure Frequency per Site by Period.

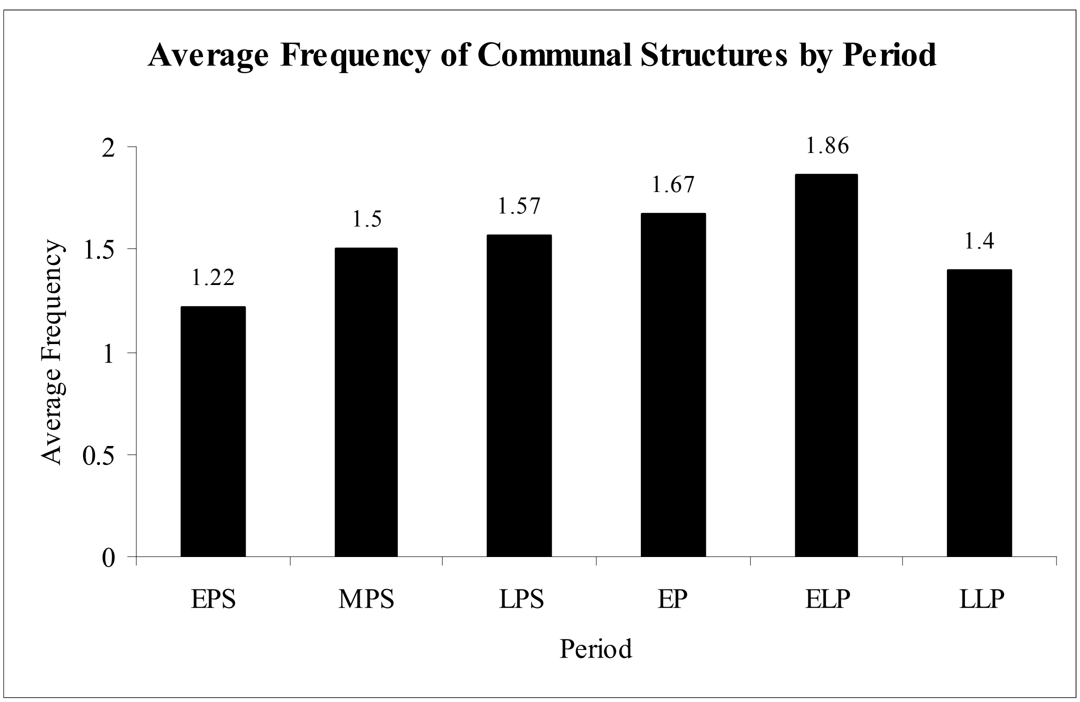


Figure 5.11. Average Communal Structure Frequency per Site by Period, with the LP Period Sub-divided into ELP (A.D. 1150 to 1300) and LLP (A.D. 1300 to 1450). The five structures dated only to the LP period have been removed.

The decrease in average communal structure frequency between the ELP and LLP periods is not statistically significant (p = .259), however, there is an identifiable trend towards an average frequency of one communal structure per site (Figure 5.11). In fact, while there is a visible trend across time (Figure 5.11), results from the student's t-Tests for all periods indicate that these differences are not statistically significant (Table 5.2). The only t-Test result that indicated a possible relationship or trend although it is not significant (p = .138), was the comparison of Pit Structure and Pueblo periods. ANOVA results comparing all periods (p = .458; F = .9405) were not significant. Statistical analyses of this are since neither the periods nor the sample sizes from each of the periods were equal. At the same time, however, given the detailed analysis of which follows in chronological order from early to late in the following sections, it is possible that communal structure data indicate that there is not a great deal of change in aggregation and integration across time.

Table 5.2. Results from unpaired *t*-Tests.

Periods Compared	**Standard Deviation**	***p* value**
EPS to MPS	.544	.241
MPS to LPS	1.17	.893
LPS to EP	1.18	.619
EP to LP	1.01	.207
EP to ELP	1.13	.664
ELP to LLP	1.03	.259
EP to LLP	1.04	.391
Pit Structure to Pueblo	1.02	.138

Table 5.3. EPS Period Sites with Communal Structures.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes and/or alternative dates	Number of communal structures
LA 19075	NM Y:4:6	None	305+/-85	Radiocarbon date	1
LA 34813	Winn Canyon	Room 2/Kiva	310+/-75	Radiocarbon date	1
LA 103907	Bluff	House 5	320v	Tree-ring cutting date	1
LA 12110	McAnally	Unit 11	580 +/- 60	Radiocarbon date	1
LA 1867	Harris	House 14	582r	Tree-ring cutting date	1
LA 127260	Ridout Locus; Wind Mountain	House F	620 to 710	Archaeomagnetic date range	1
LA 1113	Old Town	A67	650+/-	Archaeomagnetic date	1
AZ P:16:1	Bear	Kiva 1	667 +/- 60	Radiocarbon date 657vv Tree-ring non-cutting date	1
LA 5421	Saige-McFarland	Great Kiva Unit 1	672+/-	Archaeomagnetic date range 645 to 770	1
LA 635	Galaz	Great Kiva 8 Pithouse 8	650+/-60	Radiocarbon date	1
LA 64931	SU	Pithouse A	200 to 550	Ceramic dates	2
LA 9713	Promotory	House B	250 to 600	Ceramic dates	1
W:10:15	Crooked Ridge	Pithouse 9	400 to 600	Ceramic dates	2
W:10:15	Crooked Ridge	Structure 19	400 to 600	Ceramic dates	2
LA 6538	Diablo	Feature 5	400 to 650	Ceramic dates	2
LA 32536	Cuchillo	1	550 to 650	Ceramic dates	1
LA 6538	Diablo	Feature 14	550 to 650	Ceramic dates	2
	Lagoon	None	550 to 650	Ceramic dates	1
LA 11568	Mogollon	House 5A	550 to 750	Ceramic dates	1
LA 64931	SU	House V	550 to 750	Ceramic dates	2
LA 53	Three Circle	Room 19	550 to 750	Ceramic dates	2
LA 53	Three Circle	Room 2A	550 to 750	Ceramic dates	2

*Dating information is from site reports, published articles and books, and personal communication; see Appendix II for references.

Pit Structure Period

Early Pit Structure Period (A.D. 250 to 700). Twenty-two communal structures from 18 sites (Table 5.3 and Figure 5.12) are associated with the EPS period (A.D. 250 to 700), with an average of 1.22, just slightly more than one communal structure per site (Figures 5.10). Four of the EPS period sites have two communal structures each, but no site has more than two. As discussed in Chapter 4, in general, the number of communal structures dating to this period may be slightly underrepresented because some of these early sites have been subject to reuse and/or remodeling for decades. When EPS sites were abandoned and reoccupied, new structures were sometimes erected atop the earlier structures. The majority of EPS sites, n = 14 or 78 percent, have only one communal structure, providing evidence for integration at most sites during this period.

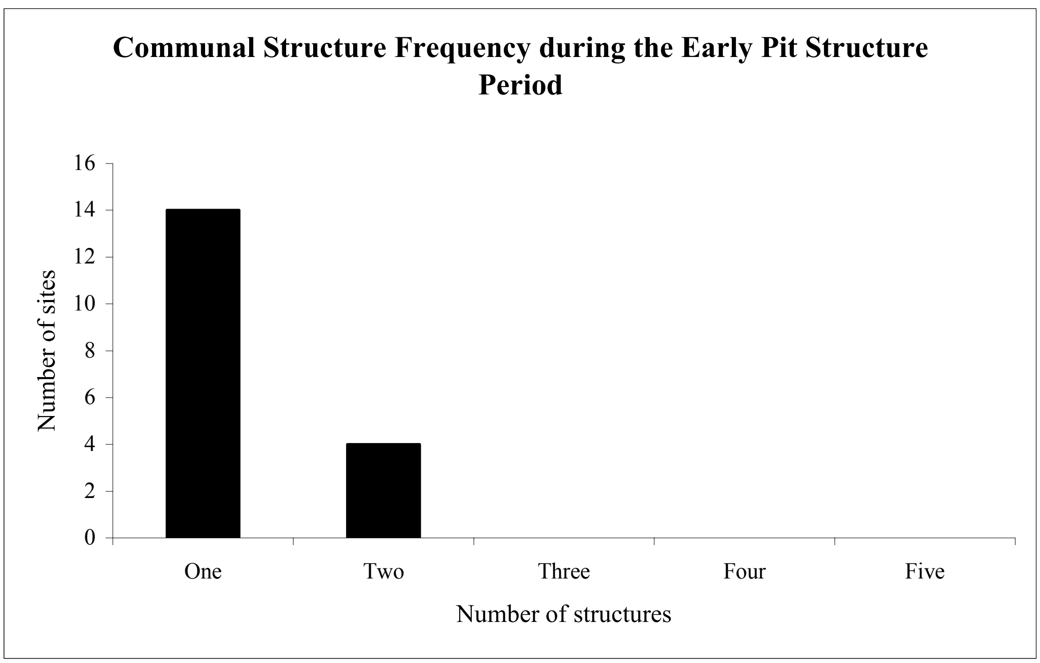


Figure 5.12. Communal Structure Frequency during the EPS Period.

In some cases, dating issues make it difficult to know if the communal structures at EPS sites with multiple structures were contemporaneous, or if structures were used sequentially. While there are radiocarbon and/or tree-ring cutting dates available for some of the EPS sites with only one communal structure, there are only relative dates for those that have two (Table 5.3). However, the available data can be used to suggest that at four EPS sites (Crooked Ridge, Diablo village, Three Circle, and SU) two communal structures may have been used contemporaneously, these sites are discussed below.

At Crooked Ridge village, located in eastern Arizona along the Black River, there are two communal structures with ceramic dates spanning 200 years (A.D. 400 to 600) (Wheat 1955:58-64). There are 100 pit structures at the site, making it one of the largest EPS period communities in the Mogollon region. As a result, there may have been two communal structures to provide space for all of the site's residents in communal activities and/or rituals. If the structures were contemporary, data from Crooked Ridge provide evidence for population aggregation at the site during the EPS period.

Interestingly, both of the Crooked Ridge communal structures, Pithouse 9 and structure 19, are quite large (82 and 112 m^2). It is possible, although Wheat (1955) does not suggest this, that the smaller structure may have been replaced by the larger one as the communal structure for the village if the community grew over time. In the absence of absolute dates for the site, it is difficult to assess the contemporaneity of the two structures.

The second site with two EPS period communal structures is Diablo village (Creel and Anyon 2003; Dycus 1997; Hammack 1966). Situated along the upper Gila

River drainage in New Mexico, the site has two communal structures, Features 5 and 14, which date to the EPS period. Ceramic dates for Feature 5 range from A.D. 400 to 650, and Feature 14 dates from A.D. 550 to 650. Hammack (1966) does not state why he assigned different ceramic dates for the features, and no other reports for the site specify the reasons for the difference. However, the overlap in the dates for Features 5 and 14 provides evidence to suggest that the two Diablo village structures may have been used contemporarily for 100 years.

Recently, Dycus (1997) used architectural evidence to provide a construction history for the site, which shows that Feature 14 was constructed before Feature 5. He has suggested that the earlier feature was abandoned when the second structure was built and that the two were not contemporary. Interestingly, Feature 5 is smaller than Feature 14; I discuss the importance of these data in the subsequent size section. If the construction history provided by Dycus (1997) is reliable, Diablo is another example of EPS period integration.

The Three Circle site, situated in the northern Mimbres River valley in southwestern New Mexico, has two EPS period communal structures, Rooms 2A and 19 (Creel and Anyon 2003). Both structures have ceramic dates of A.D. 550 to 750 and are approximately the same size, although 2A is the largest of the 24 pit structures at the site. Researchers (Creel and Anyon 2003:73) have suggested that Room 19 was used from the EPS period into the MPS period, while 2A was abandoned and burned at the end of the EPS period. This may help to explain the presence of the two structures at the site in that 19 likely replaced the destroyed 2A. However, the two were perhaps both used during the end of the EPS period, suggesting that some degree of population aggregation occurred at the site.

The fourth EPS period site with two communal structures is the SU site, which is situated in the Reserve area of southwestern New Mexico (Cordell 1997:222; Martin and Rinaldo 1947; Wills 1991a, 1991b). House V and Pithouse A have been identified as EPS period communal structures. The date ranges for the two structures do not overlap, as is the case for the other three EPS period sites with two communal structures. Pithouse A has a ceramic date of A.D. 200 to 550, and researchers (Martin and Rinaldo 1947; Wheat 1955) estimate that House V was constructed and used between A.D. 550 and 750. Pithouse A predates House V, and, as was the case at Diablo village, the earlier structure was larger than that later one. The two EPS period communal structures at SU appear to have been used sequentially, rather than simultaneously, providing additional evidence for EPS period integration.

Prior to the detailed analysis presented here, 78 percent of EPS period sites had evidence for only one communal structure. There are four EPS period sites with two communal structures each although evidence from one of the four sites suggests that they were not contemporary. The communal structures at the SU site have evidence for sequential use; Three Circle is the only EPS period site with evidence indicating that the communal structures were contemporary. Frequency data for Crooked Ridge and Diablo were inconclusive. Therefore, in general, evidence from EPS period sites provides data that can be used to support the idea that during this period social integration was emphasized at the majority of these communities, which makes sense as EPS period communities were in general smaller than those associated with the LPS and Pueblo periods. These structures were some of the earliest to be built and used to integrate people living in the Mogollon region. Subsequent sections, specifically those that focus on communal structure location and size, provide additional evidence to support the idea that social integration was an important part of the lives of Mogollon people during the EPS period. Ultimately, it appears that perhaps 15 of the 18 sites, or 83 percent, have evidence for integration at this time.

Middle Pit Structure Period (A.D. 700 to 850). The number of communal structures that date to the MPS period is considerably fewer than those from the EPS period (Table 5.4 and Figure 5.13), and the average number of communal structures per site increases during this period from 1.22 to 1.50 structures per site (Figures 5.10 and 5.11). Twelve communal structures from eight sites are associated with the MPS period (Table 5.4 and Figure 5.13). Harris has two communal structures, and another, Wind Mountain, has three (Figure 5.13 and Table 5.4). As was the case during the EPS period, the majority of MPS sites, 63 percent, have only one communal structure (Figure 5.10 and 5.13), which provides evidence for integration at most sites during this period, although to a lesser degree than was the case during the EPS period. Three of the MPS period sites do have more than one communal structure, but none of the sites have more than three.

Table 5.4. MPS Period Sites with Communal Structures.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes and/or alternative dates	Number of communal structures
LA 127260	Wind Mountain	House AB	620 to 730	Archaeomagnetic date range	3
LA 127260	Wind Mountain	House AK	640 to 780	Archaeomagnetic date range	3
LA 1867	Harris	8	650 to 750	Ceramic dates	2
LA 11568	Mogollon	House 3	650 to 750	Ceramic dates	1
LA 127260	Wind Mountain	House O	650 to 750	Ceramic dates	3
LA 9709	Turkey Foot Ridge	Pithouse K	767r	Tree-ring cutting date	1
TX:4:132	Turquoise Ridge	Structure 35	770 to 820	Archaeomagnetic date range	1
LA 6083	Gallita Springs	Feature 40	800r	Tree-ring cutting date	1
LA 1867	Harris	House 23	836vv; 838vv	Tree-ring non-cutting date	2
LA 1113	Old Town	A71	800 to 874	Archaeomagnetic date range	1

*Dating information is from site reports, published articles and books, and personal communication; see Appendix II for references.

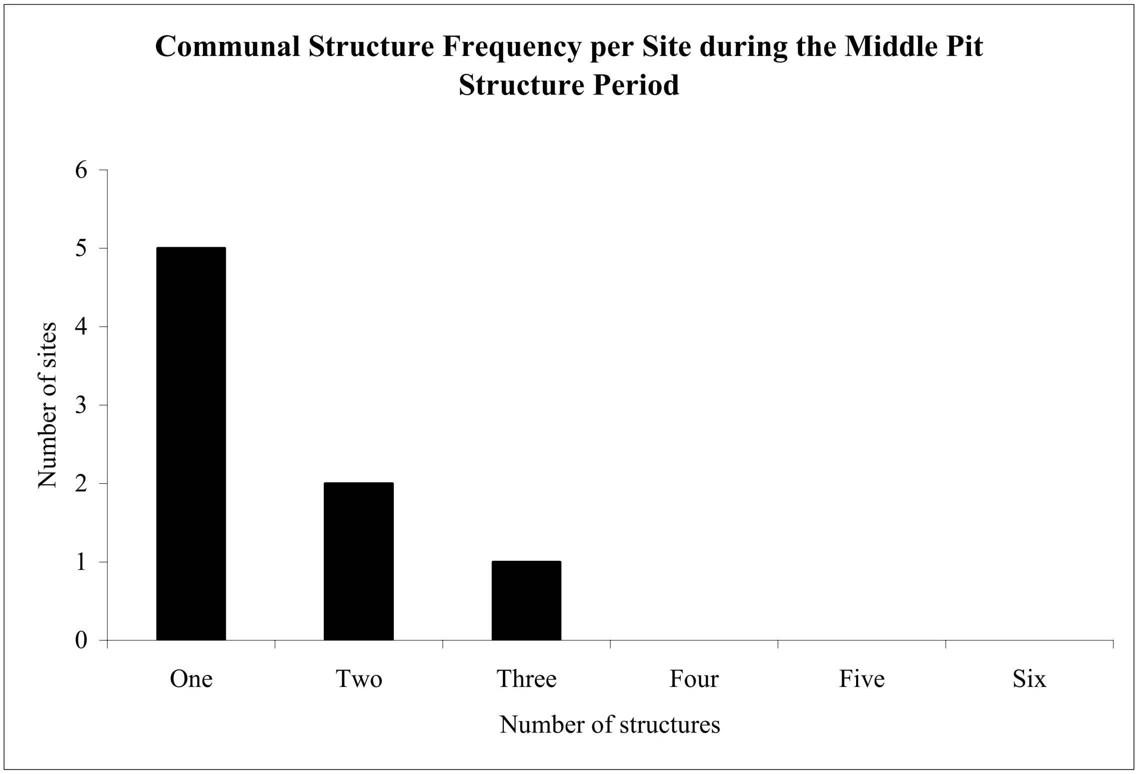


Figure 5.13. Communal Structure Frequency during the MPS Period.

It is possible that population aggregation was beginning to increase during the MPS period. The key evidence here again is whether multiple communal structures found at MPS period sites were contemporary. If they are, they reflect an increase in aggregation. However, if they are not, they provide evidence that can be used to suggest that social integration continues to be maintained at most sites in the Mogollon region during the MPS period (Figure 5.13). The following section provides the evidence from communal structures dating to the MPS period.

Tree-ring and archaeomagnetic dates were available for seven of MPS period communal structures (Table 5.4). In most cases, the tree-ring cutting and archaeomagnetic dates provide a relatively concise period for the use of each of the structures. The five structures for which absolute dates were not available have been dated to a 100-year time span based on ceramics found within and sometimes on the floors of these MPS period communal structures (Table 5.4).

As previously stated, five of the 12 MPS period communal structures are the only such structure on the sites at which they are found (Figure 5.13). As was the case during the EPS period, it appears that at these MPS period sites social integration was an important emphasis. Three of the MPS sites have more than one communal structure.

At Harris, situated on the eastern side of the Mimbres River in southwestern New Mexico, there are two MPS period communal structures, structure 8 and House 23 (Creel and Anyon 2003; Haury 1936; Haury and Sayles 1947). A ceramic date of A.D. 650 to 750 is available for structure 8, and House 23 has a tree-ring non-cutting date of A.D. 838. Given these dates, it is likely that, although the two structures date to the MPS period, they were not used contemporaneously by the inhabitants of Harris village. The later communal structure, House 23, was smaller than its predecessor was.

There are three communal structures at the southwestern New Mexico site of Wind Mountain (Woosley and McIntyre 1996). According to archaeomagnetic dates, the first structure, House AB, is the largest of the three structures and was built and used sometime between A.D. 620 and 730; the second, House AK, between A.D. 640 and 780; and the third, House O, between A.D. 650 and 750 (Woosley and McIntyre 1996). The three structures are located on the western side of the site and are randomly spaced among the 50 pit structures at the site. The construction sequence developed for Wind Mountain based on architectural style, dates for the structures, and artifacts identified in the structures indicates that the three communal structures were used at the same time (Woosley and McIntyre 1996); although they were not necessarily built at the same time, they were likely to have been contemporary. If the construction sequence presented by Woosley and McIntyre (1996) is accurate, and these three MPS period communal structures were used simultaneously, Wind Mountain provides possible evidence for some degree of population aggregation during this period.

Although there is a decrease from the EPS period (n = 83 percent) in the percentage of MPS period sites, 63 percent, with only one communal structure, the most important result presented here is that during the MPS period there is evidence for social integration at most of the sites dating to this period. There is an increase, but not a large one, between the EPS and MPS periods in the average number of communal structures per site. However, in a detailed analysis of communal structure frequency data provide evidence that at six of the eight sites, or 75 percent, there was a continued emphasis on social integration during the MPS period.

Late Pit Structure Period (A.D. 850 to 1000). Thirty-six communal structures from 23 sites comprise the LPS period assemblage. The number of LPS period communal structures is three times that for the MPS period (Tables 5.1 and 5.5 and Figure 5.14). The reason for the difference in numbers may be related to the fact that there are more LPS period sites and that more LPS period structures have been excavated than earlier ones. During this period, there is also a slight increase in the average number of communal structures at Mogollon sites to 1.57. There is a great deal more variation in the number of communal structures per site found at LPS period sites than at earlier sites.

Table 5.5. LPS Period Sites with Communal Structures.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes and/or alternative dates	Number of communal structures
LA 34787	Black's Bluff	Pithouse 1	778 to 800	Tree-ring date range (Anyon and LeBlanc 1980)	1
LA 127260	Wind Mountain	House XX	778 to 1030	Archaeomagnetic date range	4
LA 127260	Wind Mountain	House X	800 to 940	Archaeomagnetic date range	4
LA 2465	NAN	52	737 to 859; 513 to 778; 660 to 990	Tree-ring date range; AMS dates; Archaeomagnetic date range	3
LA 4424	Wheatley Ridge	House 7	870 to 936	Archaeomagnetic date range	1
LA 1113	Old Town	A16	874 to 925	Archaeomagnetic date range	1
LA 6083	Gallita Springs	Feature 38	875 to 950	Tree-ring dates range	1
LA 1867	Harris	House 10	877v; 877r	Tree-ring non-cutting dates (also 736vv, 843vv, 846vv, 854vv, 858vv)	1
LA 84657	Squaw Canyon	None	800 to 950	Ceramic dates	1
LA 5841	Cooney Ranch #1	Communal Structure 1	900 to 980	Tree-ring date range	1
LA 71877	Lake Roberts Vista	Great Kiva	900v	Tree-ring non-cutting date	1
LA 2465	NAN	43	900vv	Tree-ring non-cutting date	3
LA 104065	Ponderosa Ranch	None	900v	Tree-ring non-cutting date	1
LA 38624	Starkweather	Pithouse B	900	Ceramic date	1
LA 1691/LA 15002	Swarts	Room W	900v	Tree-ring non-cutting date	3
LA 9657	Sawmill/Fox Farm	Kiva	950vv	Tree-ring non-cutting date	1
LA 3099	WS Ranch	Kiva C	950+/-80	Radiocarbon date	1
LA 78337	Bradsby	1	996v	Tree-ring non-cutting date	1
LA 18888	Beauregard	Structure 1	750 to 1000	Ceramic dates	1
LA 635	Galaz	Communal Structure 42A	750 to 1000	Ceramic dates	1
LA 64931	SU	Pithouse Y	750 to 1000	Ceramic dates	1
LA 1691/LA 15002	Swarts	Room 2	750 to 1000	Ceramic dates	3
LA 1691/LA 15002	Swarts	Room AE	750 to 1000	Ceramic dates	3

Table 5.5 continued.

Site Number	Site Name	Structure Number	Dates (A.D.)	Dating Notes and/or alternative dates	Number of communal structures
LA 127260	Wind Mountain	House U	750 to 1000	Ceramic dates	4
LA 127260	Wind Mountain	House Y	750 to 1000	Ceramic dates	4
LA 6000	Lee	18	900 to 1000	Ceramic dates	6
LA 6000	Lee	19	900 to 1000	Ceramic dates	6
LA 6000	Lee	20	900 to 1000	Ceramic dates	6
LA 6000	Lee	21	900 to 1000	Ceramic dates	6
LA 6000	Lee	22	900 to 1000	Ceramic dates	6
LA 6000	Lee	23	900 to 1000	Ceramic dates	6
LA 3274		None	900 to 1000	Ceramic dates	1
LA 3921		None	900 to 1000	Ceramic dates	1
LA 2465	NAN	91	900 to 1000	Ceramic dates	3
AZ W:10:111	Nantack	Great Kiva 1	900 to 1000	Ceramic dates	2
AZ W:10:111	Nantack	Pithouse 10	900 to 1000	Ceramic dates	2

*Dating information is from site reports, published articles and books, and personal communication; see Appendix II for references.

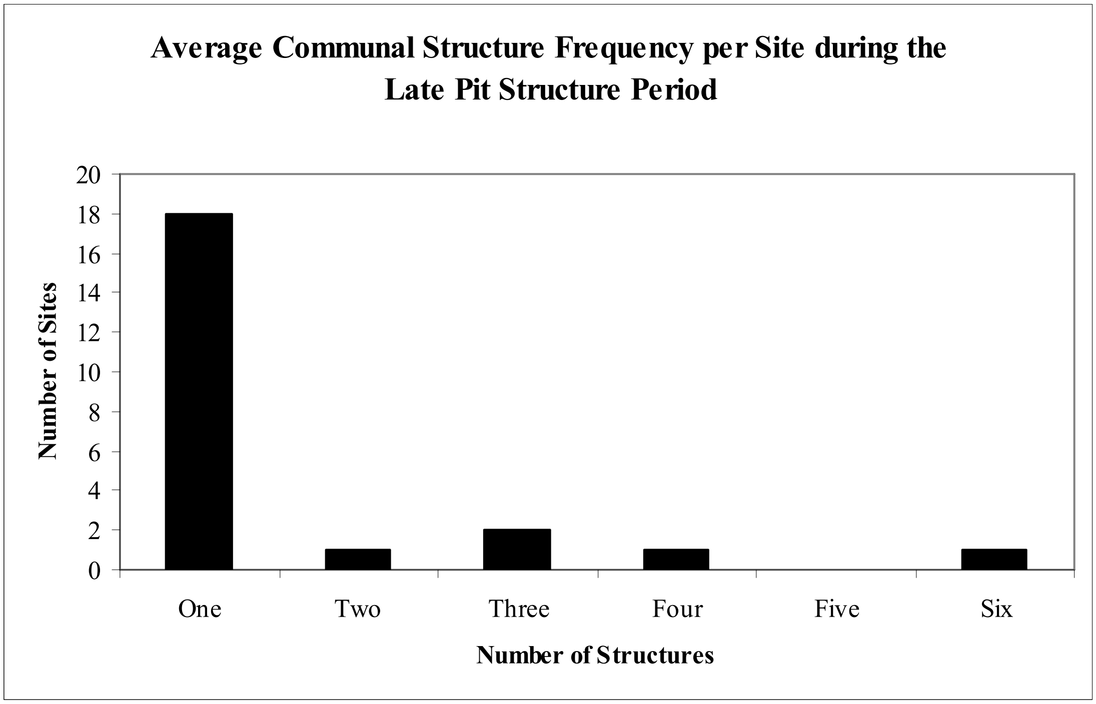


Figure 5.14. Communal Structure Frequency during the LPS Period.

One LPS period site, Nantack village, has two communal structures; two sites, NAN and Swarts have three structures; there are four structures at the Wind Mountain site; and Lee village has six (Figure 5.14 and Table 5.5). Even with this variation, the majority of LPS sites, 18 of the 23 sites or 78 percent of the assemblage, have only one communal structure (Figure 5.14), which provides evidence for integration at most sites during this period, as was the case during the previous two pit structure periods.

LPS period communal structures from the Appendix II database range in age from A.D. 750 to 1000/1050 (Table 5.4). Although I have designated a date of A.D. 850 for the beginning of the LPS period, I have included those structures associated with the LPS period by archaeologists who have used alternate dates for the period. There are tree-ring, archaeomagnetic, and relative dates available for all of the structures (Table 5.5).

While the average number of communal structures at LPS period sites is 1.57, five sites have multiple communal structures that date to the period (Figure 5.14). For example, Lee village (also referred to as Fort West Hill in the literature), located in southwestern New Mexico along the Gila River, has 63 to 70 pit houses and six communal structures that date to the LPS period (Bussey 1972, 1975). This site is problematic, however, in that the ceramic dates for these communal structures span a period of 100 years (A.D. 900 to 1000) (Bussey 1972:50-56).

The lack of dates for the Lee village structures is partially a result of a lack of decorated sherds associated with the floors of the structures, an absence of tree-ring samples, and no results from archaeomagnetic samples (Bussey 1972:52, 55). However, using a Robinson's Index, which Bussey (1972:51-53) describes as "an index of likeness," for ceramics found within the six structures, he calculates construction sequences for several of them. Results from the Index revealed that structure 21 was the first structure built at the site, structure 22 was built later, and structure 23 was constructed after that (Bussey 1972:53). Unfortunately, when Bussey (1972:53) uses other ceramic methods for dating, he finds conflicting results. Specifically, he calculates the percentage of Cliff Black-on-white to Mangus Black-on-white and finds a different construction sequence. In the latter case, his results suggest that structure 23 was one of the first at the site, followed by structures 22 and 21.

Based on his findings, Bussey (1972:53) is only able to say that structures 21, 22, and 23 predate the other three communal structures at the site, but the order in which they were built remains unclear. Specific dates for structures 18, 19, and 20 were not calculated, but all three are later than 21, 22, and 23. Bussey (1975) later proposes a date range of A.D. 920 to 980 for structures 21, 22, and 23 and A.D. 980 to 1050 for 18, 19, and 20. Following Bussey (1975), at least three of the six structures at Lee village may have been contemporary, and it is likely that the earlier three could have been replaced by the later three, structures 18, 19, and 20. It is unclear why these structures were replaced, and only one of the earlier structures, 21, showed evidence of having burned (Bussey 1972). Construction evidence from the six Lee village communal structures supports the idea that population aggregation occurred at the site. During the LPS period, at least three communal structures may have been used simultaneously, although they were not necessarily constructed at the same time. Simultaneous use of such structures provides evidence for LPS period aggregation.

While the contemporaneity information for the Lee village structures is not detailed, specific dates are available for some of the LPS period communal structures at the Wind Mountain site, located to the south in the Mimbres valley Burro Mountains (Woosley and McIntyre 1996). Of the 12 communal structures excavated at the Wind Mountain site, four of these, Houses U, Y, X, and XX date to the LPS period (Woosley and McIntyre 1996). There are archaeomagnetic and ceramic dates for these four structures, within the range of A.D. 750 to 1030. The four Wind Mountain communal structures could have been built and abandoned at various times throughout this almost 300-year period, but it is also possible that the inhabitants of this LPS period site used these structures contemporaneously. For example, the dates for House X are within the range of A.D. 800 to 940, while dates for House XX are within the range of A.D. 778 to

1030, and so the possibility of use overlap exists. These dates also overlap with the other two LPS period structures, but because ceramic dates are the only ones available for Houses U and Y, it is difficult to assess the contemporaneity of these structures. If the structures were contemporary, there is evidence for a continuation of the possible MPS period population aggregation at Wind Mountain during the LPS period. The size, shape, and orientation of these structures (discussed below) do provide additional evidence for population aggregation at the site. Frequency data alone do not provide clear evidence for aggregation or integration at Wind Mountain during the LPS period.

Two LPS period sites, Swarts and NAN, both situated in the southern portion of the Mimbres valley, have three LPS communal structures each. Swarts ruin consists of 40 to 60 pit structures, a number that includes three communal structures, dating somewhere between A.D. 750 to 1000 (Cosgrove and Cosgrove 1974). Only one of the structures provided a non tree-ring cutting date of A.D. 900v (Room W), and the other two dates (A.D. 750 to 1000) are based on ceramics recovered from the structures, although not from floor contexts (Cosgrove and Cosgrove 1974). Room AE is very large, while Room 2 is much smaller (Cosgrove and Cosgrove 1974). Construction data for the site suggest that AE and 2 were abandoned prior to the construction of Room W (Cosgrove and Cosgrove 1974). It is possible that the two structures were replaced by the later communal structure. All three of the Swarts structures were burned upon their abandonment, but unfortunately neither radiocarbon nor tree-ring dates are available (Anyon and LeBlanc 1980; Cosgrove and Cosgrove 1974).

Given the lack of specific dates for two of the three Swarts communal structures, it is only possible to remark that perhaps the structures were contemporary, although construction data suggest otherwise. Interestingly, the three structures range greatly in size (from 29 to 109 m^2), in orientation, and in their locations, which are associated with different areas of the site. The variation in size and location, discussed in subsequent sections, provides some possible evidence for population aggregation in the area during the LPS period.

At NAN, a 20 to 30 pit structure village, there is also evidence for three contemporary structures, although the dates are more specific at this Mimbres valley site (Burden 2001; Shafer 1983, 1989, 1990, 2003). The dates for three LPS period communal structures, Rooms 43, 52, and 91, overlap. Shafer (2003:33) does not discuss Room 43 in detail, because it was tested, but not fully excavated, and because it did not burn. However, he does state that although Room 43 was likely used during the LPS period, it appears that the structure was constructed during the MPS period and was abandoned during the LPS period (Shafer 2003:35, 48).

Archaeomagnetic dates, Accelerator Mass Spectrometer (AMS) dates, tree-ring dates, and construction sequences from NAN suggest that Room 52 was the functioning communal structure at the site during the LPS period and dates somewhere between A.D. 660 and 859 (Shafer 2003). As Shafer (2003: 33-35) points out, dating Room 52 was difficult because AMS, archaeomagnetic, and tree-ring dates conflicted with each other at times. He does state however, that Room 52 was used as a communal structure during the LPS period, and hence the overlapping dates of Rooms 43 and 52 (Shafer 2003).

This overlap does not necessarily mean that the two structures were contemporary, but it does mean that it is possible that the structures were used during the same period.

A ceramic date range of A.D. 900 to 1000 is available for structure 91, as is a construction history for the structure that provides additional support for this date range (Burden 2001; Shafer 1990, 2003). The structure appears to have been used for an extended period, as the floor was replastered three times (Shafer 2003:49). Based on architectural features and decorated ceramics, primarily Mimbres Style II sherds, recovered from the floor of the structure, Shafer (2003:48) suggests that structure 91 dates to the end of the LPS period.

Interestingly, structure 43, which construction sequences for the site suggest may have been constructed earlier than structure 52, is the largest of the three NAN communal structures (Burden 2001; Shafer 2003:48). It is possible that the initial structure, 43, was not large enough for the community, and so they built an additional one, 52, in a similar location to accommodate a greater number of the community's members. Communal structure size, and its implications for issues of aggregation and integration, is explored in depth in a subsequent section. The focus of this section is the importance of three structures with overlapping dates at NAN.

If the three NAN communal structures are contemporary, they provide evidence for initial integration at the site (i.e., only one communal structure at the site first) in that structure 43 was constructed during the MPS period. However, the fact that structure 43 was used into the LPS period along with two additional structures suggests that aggregation occurred later during the period. The two smaller structures, 52 and 91, appear to have been purposefully destroyed (both have evidence that they were burned, and dedicatory/termination objects were placed into the structures prior to their destruction) suggesting that they may have served their purpose when they were destroyed (Burden 2001; Creel and Anyon 2003; Shafer 1989, 1990). At NAN, it does appear that by the end of the LPS period residents of the site abandoned and/or destroyed all three communal structures. These structures were replaced by EP period communal structures.

Data from Nantack village also provide evidence for population increase and social integration during the LPS period. The site has two LPS period communal structures with ceramic dates (A.D. 900 to 1000). Nantack village is a 21 pit structure site situated in the Point of Pines area of eastern Arizona. The two communal structures, Great Kiva 1 and Pithouse 10, were excavated during the early 1950s (Breternitz 1956, 1959). While ceramic dates for the two structures suggest that the structures were contemporary, Breternitz (1956) examined the site's construction history to provide an explanation for the presence of the two. Pithouse 10 is much smaller (60 m^2) than the Great Kiva (152 m^2). Pithouse 10 was also built before the Great Kiva, and it appears that the community initially constructed the smaller Pithouse 10 and then came to require a larger communal structure (Breternitz 1956). It is possible that the Great Kiva was also used for visitors, as the size of the structure would have been more than adequate to accommodate members of the Nantack community. Archaeological data from Nantack village support the idea that in this area of the Mogollon region, social integration, which may at times have included visitors to the site, was the focus.

During the LPS period, there is evidence for relative stability in the degree of social integration at a majority of Mogollon communities, including Nantack, Old Town, Galaz, Harris, and many others. At the same time, population aggregation occurs at other sites (e.g., Lee, NAN). The importance of integration during the LPS period comes from the majority of sites, 18 of 23, that have only one communal structure and Nantack, where the community used only one communal structure at a time. Nineteen sites have only one communal structure. The average communal structure frequency data for the LPS period, 1.57, supports the idea that social integration was important at the majority of Mogollon sites, however the percentage of sites with only one communal structure is actually 83 percent (when Nantack is added to the equation), which is an increase from the MPS period percent of 75.

The MPS period percentage may be influenced by the relatively small sample size of communal structures dating to that period. When considering data from the communal structures, this percentage might be a bit misleading in that, although the percent of sites with only one communal structure decreases from the EPS period to the MPS period, most sites have only one "active" communal structure at a time. LPS period communal structures provide evidence that the degree of social integration at Mogollon sites increases during this period. The percentage of sites with only one communal structure is 83 during the LPS period, a percentage that is quite similar to that calculated for the EPS period.

Communal Structure Frequency during the Pit Structure Period: A Summary

Communal structure data are used to suggest that social integration is an important focus at most Pit Structure period sites. An emphasis on integration is evidenced by the fact that the majority of EPS, MPS, and LPS sites have a single communal structure, and some sites with more than one structure have evidence that they were not contemporary. Although they are not statistically significant, changes in the average number of contemporary communal structures per site during the Pit Structure period are indicators of both population aggregation and social integration in the Mogollon region. The average frequency of communal structures per site begins during the EPS period at 1.22 structures per site and increases into the MPS period (n = 1.5), and increases slightly once again during the LPS period when the average is 1.57 (Figure 5.10). However, these numbers, without closer review, are misleading. The averages provide support for the idea that population aggregation increased across time during the Pit Structure period. However, the percentage of sites with only one communal structure provides different information about what occurred during this period. Communal structure counts or averages per site do not provide a complete picture of aggregation and integration. A more careful analysis of Pit Structure period communal structures results in percentages of sites with one structure, providing data that can be used to suggest that population aggregation may only have been an issue during the MPS period.

The percentage of MPS period sites with one communal structure before the analysis presented here was 63 percent. The MPS period percent increases to 75 percent when a detailed analysis is conducted, which is still a decrease from the EPS period average of 83 percent. Researchers have reported that during the Pit Structure period Mogollon communities were increasing in size, particularly in the Mimbres, Forestdale, and Pine Lawn areas (Anyon and LeBlanc 1980; Cordell 1997; Wheat 1955). These increases may be a result of population aggregation in the area at least at some Mogollon sites during the MPS period. It may be the case that there are more MPS period communal structures at individual sites because people in the Mogollon region were faced with population aggregation. However, by the LPS period, communities appear to have mitigated this issue, and social integration is once again reinforced at a majority of sites.

The Pueblo Period

The Early Pueblo Period (A.D. 1000 to 1150). Thirty-six sites in the assemblage date to the EP period (Table 5.6 and Figure 5.15). There are 60 communal structures at these sites. The average number of structures per site during the EP period is 1.67, a slight increase from the LPS period average of 1.57 (Figure 5.10). As was the case during the Pit Structure period, the majority of EP period sites, 56 percent, have one communal structure (n = 20) (Table 5.6). A higher proportion of EP period communities have more than one communal structure (n = 16) than did sites dating to the Pit Structure periods. Twelve EP period sites (e.g., Woodrow, Mattocks, Pueblo Lillie Allen, Jennie Riley Stallworth, Dinwiddie, Graveyard Point, Pine Creek, Rock House, Treasure Hill, West Fork, Galaz, and Black's Bluff) ranging in size from 10 to 300 rooms have two communal structures. Carter Ranch and Tla Kii, have three communal structures, and Wind Mountain and NAN, have five structures (Figure 5.15 and Table 5.6).

Table 5.6. EP Period Sites with Communal Structures.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes (and/or alternative dates)	Number of communal structures
LA 635	Galaz	73 (Parrot Kiva)	900 to 1150	Ceramic and construction dates	2
LA 5421	Saige-McFarland	Pithouse 3	950 to 1100	Ceramic date	1
LA 127260	Wind Mountain	House V	970 to 1080	Archaeomagnetic date range	5
LA 2454	Woodrow	xxx	1000	Ceramic date	2
LA 2454	Woodrow	xxx	1000	Ceramic date	2
LA 2465	NAN	58	1000 to 1130; 1105vv	Archaeomagnetic date range; tree-ring date	5
AZ P:16:2	Tla Kii	Kiva 1	1008 to 1121	Tree-ring non-cutting date range	3
LA 676	Mattocks	Unit 410	1020vv; 1015 to 1250	Tree-ring non-cutting date; archaeomagnetic date range	2
LA 2465	NAN	57	1025 to 1070	Archaeomagnetic date range	5
LA 127260	Wind Mountain	Room 15	1030 to 1150	Archaeomagnetic date range	5
AZ P:16:2	Tla Kii	Kiva 2	1035	Tree-ring non-cutting date (Haury 1985:54)	3
LA 127260	Wind Mountain	Room 7	1040 to 1130	Archaeomagnetic date range	5
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Kiva 1	1057 to 1150	Report does not specify origin of date	2
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Kiva 2	1057 to 1150	Report does not specify origin of date	2
LA 2465	NAN	18	1066vv, 1068vv; 1071 to 1100	Tree–ring non-cutting dates, archaeomagnetic date range	5
LA 2465	NAN	39	1090vv (Coeval with 45)	Tree-ring date	5
LA 127260	Wind Mountain	House P2	1100	Tree-ring non-cutting date	5
LA 2465	NAN	45	1107r (Coeval with 39)	Tree-ring non-cutting date	5
	Carter Ranch	Great Kiva	1116 to 1156	Archaeomagnetic date range	3
	Carter Ranch	Room 16	1000 to 1150	Ceramic date	3
	Carter Ranch	Kiva 1	1000 to 1150	Ceramic date	3
LA 33642	Jennie Riley Stallworth	Great Kiva	1000 to 1100	Ceramic date	2
LA 33642	Jennie Riley Stallworth	Xxx	1000 to 1100	Ceramic date	2

Table 5.6 continued.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes (and/or alternative dates)	Number of communal structures
LA 5389		xxx	1000 to 1100	Ceramic date	1
LA 5405		xxx	1000 to 1100	Ceramic date	1
LA 5066	Cottonwood Creek	xxx	1000 to 1150	Ceramic date	1
LA 6538	Diablo	Feature 7	1000 to 1150	Ceramic date	1
LA 6783	Dinwiddie	Feature 14	1000 to 1150	Ceramic date	2
LA 6783	Dinwiddie	Feature 11	1000 to 1150	Ceramic date	2
W:6:5	Dry Prong	Kiva 1	1000 to 1150	Ceramic date	1
LA 78963	Elk Ridge	Kiva	1000 to 1150	Ceramic date	1
LA 635	Galaz	Kiva 107	1000 to 1150	Ceramic date	2
LA 11075	Gatton's Park	xxx	1000 to 1150	Ceramic date	1
LA 6536	Graveyard Point	Feature 9	1000 to 1150	Ceramic date	2
LA 6536	Graveyard Point	Feature 8	1000 to 1150	Ceramic date	2
LA 676	Mattocks	Kiva 48	1000 to 1150	Ceramic date	2
LA 3639	Pine Creek Highway Salvage	1	1000 to 1150	Ceramic date	2
LA 3639	Pine Creek Highway Salvage	4	1000 to 1150	Ceramic date	2
LA 1118	Rock House	Feature 8	1000 to 1150	Ceramic date	2
LA 1118	Rock House	Feature 7	1000 to 1150	Ceramic date	2
LA 66782	Sand Flat	xxx	1000 to 1150	Ceramic date	1
AZ P:16:2	Tla Kii	Kiva 52	1000 to 1150	Ceramic date	3
LA 16241	Treasure Hill	Room 6	1000 to 1150	Ceramic date	2
LA 16241	Treasure Hill	Room 8	1000 to 1150	Ceramic date	2
LA 8675	West Fork	6	1000 to 1150	Ceramic date	2
LA 8675	West Fork	10	1000 to 1150	Ceramic date	2
LA 18903	Wheaton to Smith	Unit 34	1000 to 1150	Ceramic date	1

Table 5.6 continued.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes (and/or alternative dates)	Contemporary communal structures
LA 127260	Wind Mountain	Room 3	1000 to 1150	Ceramic date	5
LA 68709		xxx	1000 to 1150	Ceramic date	1
LA 66686		Kiva	1000 to 1150	Ceramic date	1
LA 5412	Redrock		1100	Ceramic date (report provides date of 1100 for this structure, but does not specify origin of date)	1
LA 34787	Black's Bluff	Great Kiva 13	1000 to 1175	Ceramic date	2
LA 34787	Black's Bluff	Kiva 7	1000 to 1175	Ceramic date	2
LA 86310	Ojo Caliente G	Great Kiva	1000 to 1175	Ceramic date	1
LA 1294	Yeo 194	Great Kiva	1000 to 1175	Ceramic date	1
LA 3272		xxx	1000 to 1175	Ceramic date	1
LA 14883		xxx	1000 to 1175	Ceramic date	1
LA 18753		xxx	1000 to 1175	Ceramic date	1
LA 6079		xxx	1000 to 1175	Ceramic date	1
LA 54955	TJ	Great Kiva	1000 to 1200	Ceramic date	1

*Dating information is from site reports, published articles and books, and personal communication; see Appendix II for references.

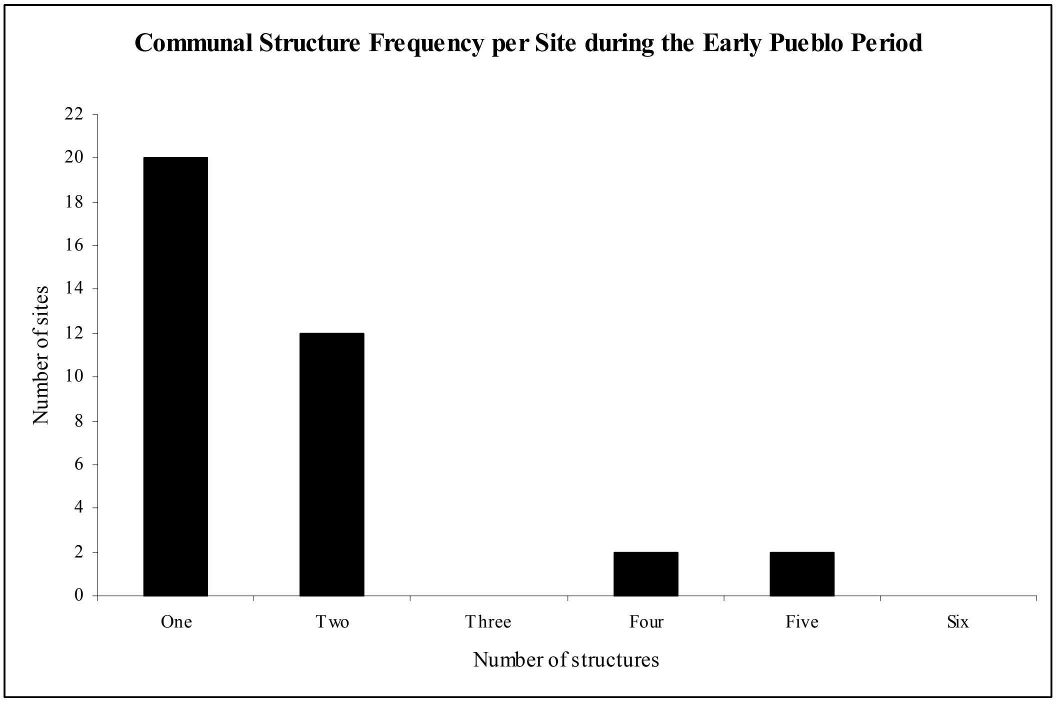


Figure 5.15. Communal Structure Frequency during the EP Period.

There are two EP period communal structures at the 300-room Woodrow ruin, located in southwestern New Mexico northwest of Silver City (Stuart and Gauthier 1984). Both structures are quite large and are embedded within two of the site's sixteen roomblocks (S. Lekson, personal communication, 2005). The fact that there are two structures for three hundred rooms could suggest integration at the site. However, because the two structures are situated within roomblocks they may be indicative of aggregation, as perhaps only some members of the community build communal structures (see location discussion below). Alternatively, the location of the structures may provide evidence for hierarchy at the site; that is people with some degree of power having access to the communal structures and others having only limited access.

The lack of dates for the structures, because they were subject to limited testing, is problematic when attempting to determine if they are coeval. The communal structures have very little post-depositional fill within them, and the site appears to have been abandoned at the end of the EP period (S. Lekson, personal communication, 2005; Stuart and Gauthier 1984). The absence of specific dates or ceramics from floor contexts for either communal structure makes it difficult to argue that one of the structures was abandoned and another built and used. Neither structure shows evidence for purposeful destruction or burning. The lack of destruction of either of the structures when combined with the locations of the structures does add support that the structures could be contemporary. Ultimately, however, data from Woodrow are inconclusive in terms of revealing evidence for population aggregation or social integration during the EP period.

In the Mimbres valley at the Mattocks ruin, Robinson and Cameron (1991:23) have provided an early cutting date of 1079 and a late non-cutting date of 1117 for the site. There is relatively little information about the site's communal structures. Unit 410 was a habitation pit structure that was later remodeled into a communal structure (LeBlanc 1983). Kiva 48 is the earliest communal structure that has been identified to date at the site; the remodeled Unit 410 later came to be used. Gilman (1998) and others (Lekson 1989) have discussed these small out of sequence pit structures suggesting that they are not communal structures at all, but rather represent temporary residences for people constructing surface roomblocks. This issue will be addressed at the end of the frequency section. Communal structure data from Mattocks do not provide clear evidence for aggregation or integration.

Although Kayser (1971) provides the same dates for the two communal structures at Pueblo Lillie Allen, a site situated on Apache Creek in western New Mexico, he concludes that of the construction of Kiva 1 predated Kiva 2. He reaches his conclusion based on construction sequences from the site and based on the sizes of these two structures. He also suggests that ultimately the two communal structures were used at the site simultaneously. Kiva 1 is larger than Kiva 2, which was remodeled from a habitation structure to become a communal structure (Kayser 1971). The presence of Kiva 1 suggests that integration was initially present at the site, but that later, the simultaneous use of Kivas 1 and 2 provide evidence for increased population aggregation at the site.

The Jennie Riley Stallworth site, situated in the middle San Francisco drainage on Devil's Creek in southwestern New Mexico, is a relatively small site consisting of only one roomblock. Accola and Neely (1980) identified two communal structures, one large Great Kiva (approximately 100 m^2) situated to the northeast of the roomblock and a much smaller structure to the southeast. While fill within the Great Kiva suggests that it was used during the EP period, the smaller structure is problematic. Given the fact that there were at least five additional pit structures identified at the site, some of which were underneath the roomblock (Accola and Neely 1980), it is possible that the smaller Jennie Riley Stallworth "communal structure" is actually a pit structure that dates to an earlier period. If the smaller pit structure does date to the Pit Structure period, then the Great Kiva was the only EP period communal structure, which provides evidence for social integration at the site.

Dinwiddie, an EP period site situated on the upper Gila River in southwestern New Mexico, has two contemporary communal structures (Bussey 1972). Based on ceramic data collected during site excavations, the site has been dated between A.D. 1000 and 1100 (Bussey 1972:78). Features 11 and 14 are approximately the same size (less than 20 m^2), and the ceramic dates available for the structures are the same (Anyon and LeBlanc 1980; Bussey 1972; Linse 1999b). There are two roomblocks at the Dinwiddie site, one eastern and one western (Anyon and LeBlanc 1980; Linse 1999a). Feature 14 is attached to the northern end of the western roomblock (Anyon and LeBlanc 1980; Bussey 1972:62). Feature 11 is associated with the eastern roomblock (Anyon and LeBlanc 1980:268-269; Bussey 1972:62). The relatively short occupation at the site, the size of the communal structures, and their association with different roomblocks is a strong indication that aggregation occurred during the EP period at this Mogollon site.

At the Graveyard Point ruin, Accola and Neely (1980) state that there is one "Great Kiva" and one smaller communal structure present at the site. The smaller structure is situated within the roomblock and the larger structure is an independent structure (Accola and Neely 1980). Only ceramic dates are available for the two EP period communal structures, so it is not possible to determine whether the two were contemporaneous. It is possible that the Great Kiva was used as the integrating structure at the site, but it is quite small relative to many other structures identified in the Mogollon region (Anyon and LeBlanc 1980). If the structures were used at the same time, Graveyard Point reflects aggregation during the EP period. However, the lack of additional data makes it impossible to determine if they are coeval.

Pine Creek pueblo is located on the western side of Duck Creek, a tributary of the Gila River in southwestern New Mexico (Anyon and LeBlanc 1980). The two EP period communal structures at this site, Rooms 1 and 4, are approximately the same size, and both are relatively small (Anyon and LeBlanc 1980). Neither of the structures is attached to roomblocks, and Anyon and LeBlanc (1980:268) state that the structures are "isolated." I suggest in a subsequent section that these structures are not "isolated" but rather are spatially separated from the rest of the site's architecture. Pine Creek pueblo may provide evidence for population aggregation, but again given the lack of more specific temporal data it is difficult to determine.

Rock House ruin, situated on the Mimbres River, has two EP period communal structures (Anyon and LeBlanc 1980). The structures, Features 7 and 8, are exactly the same size (11.6 m^2), and their ceramic dates overlap. Both of these structures are attached to the only roomblock at the site (Anyon and LeBlanc 1980). Construction data for the site show that Feature 8 was abandoned prior to the construction of Feature 7 (Anyon and LeBlanc 1980; Laboratory of Anthropology site files, Santa Fe, New Mexico). In this case, the people living at Rock House ruin appear to have replaced their original communal structure with another one of the exact same size. The fact that these two structures are not contemporary, that they occupy the same space within the community, and the fact that they are the same size provide an example of social integration at an EP period site.

Treasure Hill, situated on Cameron Creek near Silver City in southwestern New Mexico, has two communal structures that are approximately the same size (14 m^2)

(Anyon and LeBlanc 1980; Cosgrove 1923; Cosgrove and Cosgrove 1932). Excavations at the site provided limited amounts of information about the site's architecture (Cosgrove 1923). Ceramic dates suggest that the two structures, Rooms 6 and 8, are coeval (Cosgrove 1923). However, Room 6 is associated with the northern roomblock and Room 8 with the east roomblock (Anyon and LeBlanc 1980; Cosgrove 1923). Given the sizes and associations of the two structures, they make a strong case for EP period aggregation. Treasure Hill is similar to the Dinwiddie site in terms of communal structure frequency and location and both provide strong evidence to suggest that population aggregation did occur during the EP period.

There are no absolute dates for the two West Fork communal structures (Anyon and LeBlanc 1980; Ice 1968). The site is aptly named, as it is situated on the west fork of the Gila River in southern New Mexico. The dates for the two communal structures, 10 and 6, range from A.D. 1000 to 1150 based on the regional ceramic seriation (Table 5.5). The site has subsequently been purposefully destroyed (Shafer 2003:112). Both of the structures were relatively small and were associated with specific roomblocks at this site (Ice 1968). If the two structures were contemporary, West Fork is quite similar to Dinwiddie and Treasure Hill and the site provides evidence for population aggregation in this part of the Mogollon region during the EP period.

At the 150-room Mimbres site of Galaz, there are also two EP period communal structures, Kiva 107 and structure 73, or Parrot Kiva (Anyon and LeBlanc 1984:134-135). Parrot Kiva (structure 73) is quite large, while Kiva 107 is relatively small and is associated with one of the site's roomblocks. Based on the ceramic dates and construction evidence available for these two structures, it appears that Parrot Kiva was constructed prior to Kiva 107, perhaps during the latter part of the LPS period (Anyon and LeBlanc 1984:134). As Anyon and LeBlanc (1984:134) state "Although we cannot be sure of its construction date, it appears that it was at least in use during the Classic period, as was Galaz structure 73." Therefore, the two structures were contemporary and both were used during the EP period. The longevity of Kiva 107's use is supported by the fact that it was remodeled twice during the EP period (Anyon and LeBlanc 1984:135-137). Frequency data from the two structures suggests that while integration may have been emphasized initially during the EP period, at some point some degree of aggregation appears to have become an issue at the site.

The EP period site of Black's Bluff, in southwestern New Mexico, consists of 12 roomblocks and two communal structures (Anyon and LeBlanc 1980, Brunet 1972; Fitting et al. 1972). The two communal structures, Kiva 7 and Great Kiva 13, date to the EP period. Unfortunately, only ceramic dates ranging from A.D. 1000 to 1175 are available for the two structures (Fitting et al. 1972). Neither of the structures is exceptionally large, but the larger of the two structures, Great Kiva 13, is located in a prominent location while the smaller Kiva 7 is associated with one of the site's roomblocks (Fitting et al. 1972).

The lack of absolute dates for the Black's Bluff communal structures makes it difficult to determine their contemporaneity. If the two are contemporary, the Great Kiva could represent the importance of social integration at the site, while Kiva 7 reflects possible population aggregation at the site. It is not clear if the Black's Bluff communal structures reflect aggregation and integration at this EP period site. It is possible that within this large aggregated site, there was some degree of small group integration. The Great Kiva could have been used for larger scale social integration, while Kiva 7 could have been used by those who resided in the roomblock with which it is associated. Without dates that are more specific or construction information, it is not possible to determine whether aggregation or integration occurred at the site during the EP period.

Sites with two contemporary communal structures are proportionally more common, during the EP period than they were during the Pit Structure period. Many of these sites (e.g., Woodrow, Mattocks, and Graveyard Point) have two relatively small communal structures. At some of the EP period sites (e.g., West Fork and Treasure Hill), the two communal structures appear to have been contemporary and therefore, provide evidence for a greater degree of population aggregation during the EP period than during the LPS period in the Mogollon region.

The EP period sites of Tla Kii and Carter Ranch each have three possibly contemporary communal structures. Tla Kii is a 21-room pueblo located on Forestdale Creek in east-central Arizona. Kivas 1, 2, and 52 make up the Tla Kii's EP communal structure assemblage (Haury 1985; Herr 2001). Kiva 1 dates some time between A.D. 1008 to 1121 based on a series of non-cutting outer ring dates (Haury 1985:47-48), a date of A.D. 1035 was provided for Kiva 2 (Herr 2001), and a ceramic date range between A.D. 1000 and 1150 was provided for the third structure at the site. Interestingly, reports regarding Tla Kii (Haury 1985; Herr 2001) indicate that the construction of Kiva 2, a very small structure at 12 m^2 and situated within one of the roomblocks, was not completed; the structure was abandoned in favor of the much larger Kiva 1, which is 288 m^2 and is situated 25 meters south of the site.

Construction of the small Tla Kii structure may have represented a desire of the people living at Tla Kii to privatize their communal activities or to create a space where fewer people could attend functions. The abandonment of this smaller structure and the construction of a much larger one suggest that integration of large numbers of people became the ultimate priority. The third structure is also large, 260 m^2, and, given its size, it is probably not a contemporary of Kiva 1, as the residents of a 21-room pueblo would not likely need two very large communal structures (and Haury 1985 does not mention this structure). When considered as a whole, it is likely that data from Tla Kii provide evidence to support the idea that social integration, rather than aggregation, was emphasized at this site during the EP period.

Communal structure data from the Carter Ranch (Laboratory of Anthropology site files, Santa Fe, New Mexico; Longacre 1970), situated in eastern Arizona, is problematic because only date ranges are available for the EP period assemblage. There are tree-ring cutting dates for the Great Kiva ranging from A.D. 1116 to 1156 and ceramic dates for the two other structures, Room 16 and Kiva 1, which range from A.D. 1000 to 1150. Kiva 1, a small, 8 m^2, D-shaped communal structure is situated within an enclosed plaza. Room 16 is the same size as Kiva 1, 8 m^2, and is associated with one of the roomblocks at the site. The Great Kiva is 10 meters from the site's center and is very large at 235 m^2. Site reports housed at the Laboratory of Anthropology in Santa Fe, New Mexico, state that the Great Kiva was constructed earlier than the other two structures.

The physical separation of the large communal structure from the site's center provides support for some degree of social integration at Carter Ranch. The separation of the large structure from the plaza and the roomblocks suggests that it has some level of autonomy. The importance of the location will be addressed in depth in a subsequent section. Interestingly, the Great Kiva was burned upon its abandonment, and the two later structures are incorporated into the site's architecture. This is interesting because it suggests that the separated Great Kiva was destroyed and replaced with two structures that were part of the pueblo.

The Carter Ranch community appears to have experienced changes in aggregation and integration during its occupation. It is possible that these changes led to the abandonment of the Great Kiva and subsequent use of two smaller structures housed within the walls of the community later in time. It does appear that population aggregation did occur at the site, as evidenced by the presence of two smaller communal structures. Communal structure frequency data from Carter Ranch provide support for initial integration, which was subsequently replaced by population aggregation. It is important to point out here that Gilman (1998) and Lekson (1989) have argued that smaller structures found at sites are not communal structures, but rather out of sequence pit structures. This issue is explored below and in subsequent sections.

The EP period site of Wind Mountain consists of three roomblocks (Woosley and McIntyre 1996). The site has five communal structures that date to the EP period. The five Wind Mountain communal structures include Room 3 (somewhere between A.D. 1000 to 1150), Room 7 (somewhere between A.D. 1040 to 1130), Room 15 (somewhere between A.D. 1030 to 1150), House V (somewhere between A.D. 970 to 1050), and P2 (A.D. 1100+/-) (Woosley and McIntyre 1996). The structures vary in size, but are all relatively small (15 to 38 m^2) and are scattered throughout the site (Woosley and McIntyre 1996).

Construction data and dates from the Wind Mountain communal structures provide some evidence that the structures are contemporary (Woosley and McIntyre 1996), although the date ranges overlap, and thus do not provide definitive evidence for contemporaneity. However, as previously discussed, following Gilman (1998) and Lekson (1989), the size of the five structures also makes their delineation as communal structures difficult. It is clear that these structures are associated with various parts of the site, which also provides support for aggregation at the EP period site. That the site has a history of more than one communal structure makes it interesting as an example of both early and long-term population aggregation in this area of the Mogollon region.

NAN Ranch ruin also has five EP communal structures. The site is located in the Mimbres valley and experienced growth during the LPS period (Burden 2001; Shafer 2003). During the EP period, communal structures 18, which dates somewhere between A.D. 1071 and 1100, 57 (somewhere between A.D. 1025 and 1070), 58 (somewhere between A.D. 1000 and 1130), 45 (A.D. 1107r), and 39 (1090vv; ca. A.D. 1099) were used at the site (Burden 2001; Shafer 2003:93). Using construction sequences for the site, Shafer (2003) and Burden (2001) have provided evidence that structure 57 was a contemporary of structure 58 (A.D. 1000 to 1130). Structure 57 was abandoned before the construction of structures 18, 45, and 39 (Burden 2001). However, Shafer (2003:78,

98) suggests that structure 58 continues to be used along with structures 18, 39, and 45. These data provide evidence for a continuation of population aggregation at NAN from the LPS period into the EP period.

Data from both NAN and Wind Mountain provide examples of multi-period aggregation. At both sites, aggregation begins during the LPS period and continues into the EP period. While not all of the communal structures at NAN and Wind Mountain are contemporary, at both sites multiple contemporary communal structures appear to have been used at the same time.

Multiple contemporary communal structures are much more common during the EP period than during the Pit Structure period. Sixty-four percent of the EP period sites have multiple structures that are not contemporary or have only one communal structure. This percentage is down from 83 percent calculated for the LPS period. EP period communal structure frequency data provide support for the idea that while population aggregation did increase during the EP period, at a majority of communities dating to this period, social integration continued to be important.

There are benefits and consequences associated with increased aggregation; the most fundamental result of this phenomenon is that there are larger numbers of people living in communities. These groups of congregating people have their own ways of organizing themselves and strategies for encouraging cooperation that are vital to the success of the group. In some cases, evidence suggests that aggregation (e.g., Dinwiddie, Wind Mountain, and NAN) functions quite well, and multiple groups live in a somewhat segmented, although coherent, community. I refer to the sites as segmented in that they consist of groupings of surface roomblocks and communal structures that are spatially distinct. In other communities (e.g., Tla Kii), it appears that the strategy used to organize a larger number of people living within a community is to promote social integration.

The average number of communal structures per site during the EP period provides evidence to suggest that at some sites people continued to place a strong emphasis on socially integrating larger numbers of people by building and using only one communal structure. Population aggregation appears to have become more of an issue during the EP period when the percent of sites with only one communal structure drops and the number of sites with multiple structures increases.

Late Pueblo Period (A.D. 1150-1450). Fifty-eight communal structures from 36 sites date to the ELP (A.D. 1150 to 1300) (n = 39), LLP (A.D. 1300 to 1450) (n = 14), or general LP period (A.D. 1150 to 1450) (n = 5) (Table 5.7 and Figure 5.16). The average number of communal structures per site increases during the LP period (A.D. 1150 to 1450) to 1.71 (Figures 5.10 and 5.11). However, when the LP period is separated in the ELP and LLP periods, a difference become apparent. The average number of communal structures at ELP period sites is 1.86, but during the LLP period it drops to 1.40 (Figures 5.10 and 5.11).

Table 5.7. Late Pueblo Period Sites with Communal Structures.

Site number	Site name	Structure number	Dates (A.D.)	Dating notes (and/or alternative dates)	Number of communal structures	Early Late Pueblo or Late Late Pueblo period
LA 3279	Hough	Great Kiva	1080 to 1150	Ceramic date	2	Early Late Pueblo
LA 8682	Higgins Flat	Kiva 1	1175 to 1250	Ceramic date	3	Early Late Pueblo
LA 3274		xxx	1200	Tree-ring non-cutting date	1	Early Late Pueblo
LA 68188	Fox Place	xxx	1215 to 1290	Archaeomagnetic date range	1	Early Late Pueblo
AZ W:9:123	Turkey Creek	Room 152-K1	1225 to 1286	Archaeomagnetic date range	4	Early Late Pueblo
AZ W:9:123	Turkey Creek	Room 237-K3	1225 to 1286	Archaeomagnetic date range	4	Early Late Pueblo
AZ W:9:123	Turkey Creek	Room 251-K2	1225 to 1286	Archaeomagnetic date range	4	Early Late Pueblo
AZ P:14:24	Chodistaas	Room 18a	1232 to 1288	Tree-ring cutting date range	2	Early Late Pueblo
AZ P:14:24	Chodistaas	Room 2a	1232 to 1288	Tree-ring cutting date range	2	Early Late Pueblo
AZ W:9:123	Turkey Creek	Great Kiva	1240	Tree-ring cutting date	4	Early Late Pueblo
LA 8682	Higgins Flat	Great Kiva	1249 to 1281	Tree-ring cutting date range	3	Early Late Pueblo
W:10:51	Point of Pines	Pithouse 13	1265 to 1300	Archaeomagnetic date range	1	Early Late Pueblo
AZ Q:15:3	Casa Malpais	xxx	1268 to 1274	Tree-ring cutting date range	1	Early Late Pueblo
LA 4913	Gila Cliff Dwellings	Room 27	1270 to 1290	Tree-ring non-cutting date range	2	Early Late Pueblo
AZ P:14:8	Grasshopper Springs	Room 7	1278	Tree-ring cutting date	1	Early Late Pueblo
LA 4913	Gila Cliff Dwellings	Room 17	1287	Tree-ring cutting date	2	Early Late Pueblo
LA 6565	Taylor Draw	Feature 15	1100 to 1200	Ceramic date	3	Early Late Pueblo
LA 6565	Taylor Draw	Feature 22	1100 to 1200	Ceramic date	3	Early Late Pueblo
LA 6565	Taylor Draw	Feature 7	1100 to 1200	Ceramic date	3	Early Late Pueblo
LA 15075	Montoya	Unit 4	1100 to 1200	Ceramic date	1	Early Late Pueblo
LA 88889	Victorio	xxx	1100 to 1200	Ceramic date	3	Early Late Pueblo
LA 88889	Victorio	xxx	1100 to 1200	Ceramic date	3	Early Late Pueblo
LA 88889	Victorio	xxx	1100 to 1200	Ceramic date	3	Early Late Pueblo
LA 2949	Apache Creek	Great Kiva	1100 to 1250	Ceramic date	1	Early Late Pueblo
LA 3271	Valley View	Room 2	1100 to 1250	Ceramic date	1	Early Late Pueblo

Table 5.7 continued.

Site Number	Site Name	Structure Number	Dates (A.D.)	Dating notes (and/or alternative dates)	Number of communal structures	Early Late Pueblo or Late Late Pueblo period
LA 4026	Goesling Ranch	xxx	1100 to 1250	Ceramic date	1	Early Late Pueblo
LA 5793	Ormand	Room 97	1100 to late 1300s	Ceramic date	1	Early Late Pueblo
LA 1119	Small House North of Arroyo Seco	xxx	1150 to 1250	Ceramic date	1	Early Late Pueblo
W:10:57		Kiva 1	1150 to 1265	Ceramic date	1	Early Late Pueblo
W:10:65		Kiva 1	1150 to 1265	Ceramic date	2	Early Late Pueblo
W:10:37		Kiva 1	1150 to 1265	Ceramic date	5	Early Late Pueblo
W:10:65		Kiva 2	1150 to 1265	Ceramic date	2	Early Late Pueblo
W:10:37		Kiva 2	1150 to 1265	Ceramic date	5	Early Late Pueblo
W:10:37		Kiva 3	1150 to 1265	Ceramic date	5	Early Late Pueblo
W:10:37		Kiva 4	1150 to 1265	Ceramic date	5	Early Late Pueblo
W:10:50	Point of Pines	Kiva 5	1150 to 1265	Ceramic date	3	Early Late Pueblo
W:10:37		Kiva 5	1150 to 1265	Ceramic date	5	Early Late Pueblo
LA 3279	Hough	Structure 1	1123/24; 1119-1123	Tree-ring cutting date; six non-cutting dates cluster	2	Early Late Pueblo
LA 8682	Higgins Flat	Kiva 2	1175 to 1250	Ceramic date	3	Early Late Pueblo
W:10:50	Point of Pines	Kiva 1	1265 to 1325/1350	Ceramic date	3	Late Late Pueblo
LA 467	Hulbert	xxx	1300	Not available	1	Late Late Pueblo
LA 8780	Grasshopper	Great Kiva	1330	Tree-ring cutting date	3	Late Late Pueblo
LA 2112	Smokey Bear	Feature 4	1250 to 1350	Ceramic date	1	Late Late Pueblo
LA 8891	Schoolhouse Canyon	Kiva	1250 to 1350	Ceramic date	1	Late Late Pueblo
LA 5391	Pueblo Cordova	xxx	1250 to 1350	Ceramic date	1	Late Late Pueblo
LA 8780	Grasshopper	Room 246	1300 to 1400	Ceramic and construction date	3	Late Late Pueblo
LA 8780	Grasshopper	Room 341	1300 to 1400	Ceramic and construction date	3	Late Late Pueblo
LA 5793	Ormand	Room 79	1300 to 1450	Ceramic date	1	Late Late Pueblo
W:10:50	Point of Pines	Kiva 2	1325/1350 to 1400	Ceramic date	3	Late Late Pueblo

Table 5.7 continued.

Site Number	Site Name	Structure Number	Dates (A.D.)	Dating Notes (and/or alternative dates)	Contemporary communal structures	Early Late Pueblo or Late Late Pueblo period
W:10:48		Kiva 1	1400 to 1450	Archaeomagnetic date range	1	Late Late Pueblo
W:10:47		Kiva 1	1400 to 1450	Archaeomagnetic date range	1	Late Late Pueblo
W:10:52		Kiva 1	1400 to 1450	Archaeomagnetic date range	2	Late Late Pueblo
W:10:52		Kiva 2	1400 to 1450	Archaeomagnetic date range	2	Late Late Pueblo
LA 3099	WS Ranch	Kiva G	1175 to 1400	Ceramic date	1	Late Pueblo
LA 68709		xxx	1175 to 1400	Ceramic date	1	Late Pueblo
LA 4031		xxx	1175 to 1400	Ceramic date	1	Late Pueblo
LA 3275	Aragon Highway Salvage	xxx	1175 to 1400	Ceramic date	1	Late Pueblo
LA 5390	Largo Creek	xxx	1175 to 1400	Ceramic date	1	Late Pueblo

*Dating information is from site reports, published articles and books, and personal communication; see Appendix II for references.

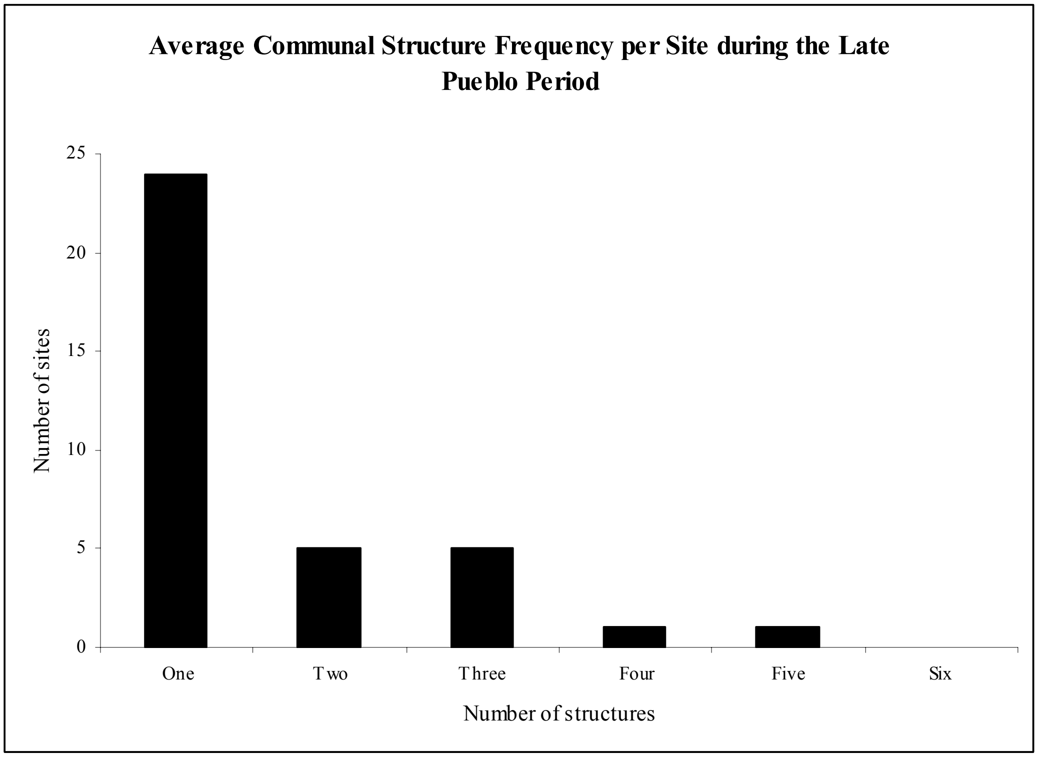


Figure 5.16. Communal Structure Frequency during the LP Period. The chart includes five structures that cannot be dated specifically to the ELP or LLP periods.

Differences between the ELP and LLP periods are discussed in detail below. In general, patterns of communal structure frequency during the LP period are similar to those seen during the previous four periods. The majority of LP period sites, or 69 percent, have one structure (n = 24). As was the case during the EP period, there is a great deal of variation in the number of communal structures found at LP period sites. Six LP period sites, Chodistaas, Ormand, Hough, W:10:65, W:10:52, and the Gila Cliff Dwellings, have two communal structures, although one Ormand site dates to the ELP period and the other dates to the LLP period, which is why the number of sites with two communal structures in Figure 16 is five. Higgins Flat, Taylor Draw, Victorio, Grasshopper, and Point of Pines have three LP period communal structures. Turkey Creek has four LP period structures, and W:10:37 has five (Figure 5.16 and Table 5.7).

As discussed previously in this chapter and in Chapter 3, I divided the LP into the ELP (A.D. 1150 to 1300) and LLP (A.D. 1300 to 1450) periods in an effort to gain finer control over this extended cultural period. The division was made to provide additional information about the differences that occurred between the EP period, which was a time of cultural florescence in many areas of the Mogollon region, and the LP period, when there were fewer sites, and populations diminished in many areas. The LP period has often been thought to be a time of widespread site abandonment (Martin 1979:65). When the LP period is divided into early and late sub-periods, differences, including a change in the average frequency of structures at sites, become visible in the communal structure data (Figure 5.11).

During the ELP period, the average frequency of communal structures per site is 1.86, an increase from the EP period average of 1.67 (Figure 5.11). These numbers, although not statistically significant as previously discussed, suggest that there was an increase in the numbers of communal structures found at sites early in the LP period. The average frequency of structures at sites declined during the LLP period to 1.40, an average similar to that found during the EPS and MPS periods (Figures 5.10 and 5.11). However, as was the case during earlier periods, a more detailed analysis of LP period communal structures provides data that can be used to suggest that these averages are somewhat misleading.

Early Late Pueblo Period (A.D. 1150 to 1300). Thirty-nine communal structures from 21 sites, ranging in age from A.D. 1100 to 1290, are associated with the ELP period (Table 5.7 and Figure 5.17). Variation in the number of communal structures found at sites is greater than it had been during any of the previous periods, which provides evidence that population aggregation continued to be an issue during the ELP period. Eleven ELP period sites, or 52 percent, have one communal structure. Five sites have two communal structures, three other sites have three, Turkey Creek pueblo has four, and W:10:37 has five (Table 5.7 and Figure 5.17). ELP period sites with two communal structures include W:10:65, the Hough site, Chodistaas, the Gila Cliff Dwellings, and Ormand.

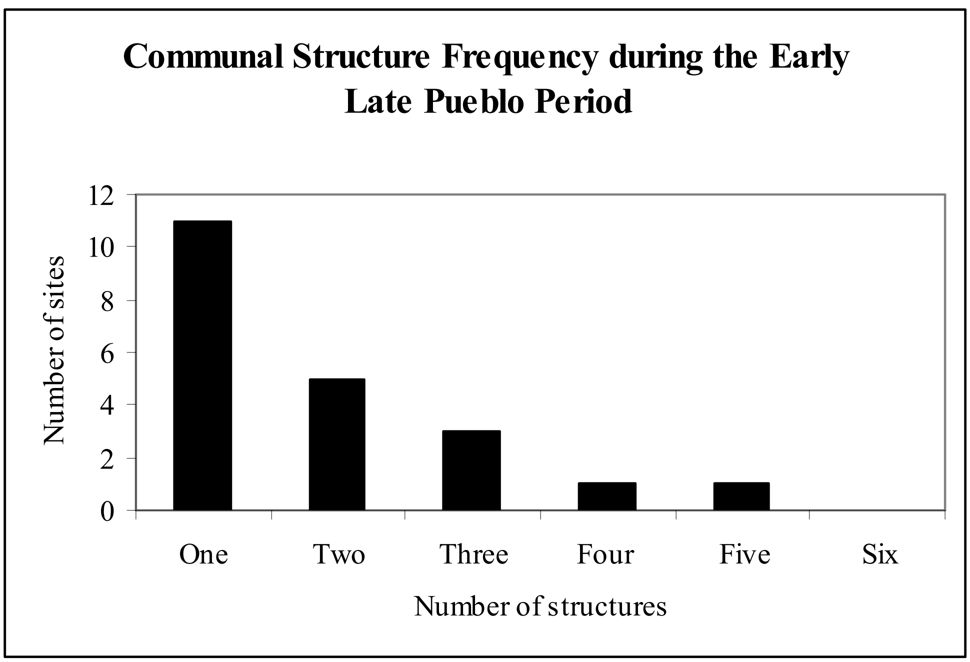


Figure 5.17. Communal Structure Frequency during the ELP Period.

At W:10:65, a 40-room pueblo site located in the Point of Pines region of eastern Arizona, there are two communal structures that have been dated, based on ceramics, between A.D. 1150 and 1265 (Olson 1959; Stone 2001). The site's communal structures are both quite small, 11 m^2 each, and it is difficult to evaluate whether they were used at the same time or not because of the lack of absolute dates. It is interesting to note that neither of the structures had any internal features, which includes the absence of a hearth. The lack of features and the fact that the structure was dated based on ceramics found within the fill of the room, and not on floor assemblages, make it difficult to place them temporally. The date range for the structure is based on general period dates. Because ceramic typologies and architectural styles are all that are available for the structures at this site, there are insufficient data on which to base an opinion about whether aggregation and/or integration occurred at the site.

The Hough site (Oakes and Zamora 1993; United States Forest Service 1996) is a 35-room ELP period pueblo situated on the San Francisco River in southwestern New Mexico. The site is interesting in that the two communal structures identified at the site are next to one another. The Great Kiva is a very large (97 m^2) rectangular structure, and structure 1 is a very small (12 m^2) circular structure. The Great Kiva also has two rooms attached on either side of the ramp entryway. Oakes and Zamora (1993) suggest that these three structures (i.e., the Great Kiva and its two attached rooms) were contemporary and data from Hough site suggest that they formed a communal complex. The significance of the architectural elaboration of these centrally located communal structures will be discussed in subsequent sections. Without absolute dates, it is difficult to assess the contemporaneity of the Great Kiva and structure 1. However, given Oakes and Zamora's (1993) discussions, it appears that there is more evidence for social integration than aggregation at this site.

At Chodistaas pueblo (Lowell 1999; J. Jefferson Reid personal communication; Riggs 2001), there are data for population aggregation during the ELP period. The two communal structures identified at the site, Rooms 18a and 2a, are approximately the same size, 50 and 34 m^2, respectively, but each is associated with one side of the 18-room pueblo. Room 18a is a walled communal structure with an attached room, located on the south side of the roomblock. Room 2a is located on the community's north side. Chodistaas may be an example of population aggregation where the community was divided into a northern and southern group during the ELP period. The location and architectural variation of the two structures support the idea that aggregation occurred at the site during the ELP period.

At the Gila Cliff Dwellings in southern New Mexico, Rooms 17 and 27 date to the ELP period. A tree-ring cutting date of A.D. 1287 is available for Room 17, and a tree ring cutting date range of A.D. 1270 to 1290 was provided for Room 27 (Anderson et al. 1986; Gadd 1993). Both structures are rectangular and approximately the same size, and researchers have suggested that the dwellings were used for a relatively short period, one generation (Anderson et al. 1986; Gadd 1993). The presence of these two structures suggests some degree of aggregation at the site.

It is interesting to note that Room 17, the larger of the two Gila Cliff Dwelling communal structures, is much more elaborate than Room 27 with wall murals, storage chambers, niches, and a platform (Anderson et al. 1986; Gadd 1993). The elaboration of one structure over another may suggest one of two things. Elaboration may emphasize differences in the people constructing and using the structure (i.e., aggregating groups). At the same time, architectural elaboration may suggest that Room 17 was the more important of the two and therefore served as the primary meeting place for the community's members (i.e., integration). The dates for the two structures, combined with the relatively brief period of occupation at the site, suggest that the two structures were in fact contemporary (Anderson et al. 1986; Gadd 1993).

At the Ormand site, the ceramic dates available suggest that one structure dates to the ELP period and the other to the LLP period. As a result, only the ELP period communal structure, Room 97, is discussed in this section. Room 97 is rather large, 71 m^2, and is enclosed in the central plaza of the site's four roomblock community (Wallace 1998). Ceramic data from the structure were used to date the site from A.D. 1100 to the late 1300s. It is likely, that during the ELP period integration was an important factor at the site, and members of the community's four roomblocks were integrated using the centrally located communal structure. Ultimately, Room 97 was dismantled and abandoned; it may have been replaced by Room 79 during the LLP period (Wallace 1998). Because this structure is the only one that dates to the ELP period itself, Ormand provides evidence for social integration at the site.

Three ELP period sites have three communal structures each, including Higgins Flat, Taylor Draw, and Victorio. Unfortunately, the dates for communal structures from two of the three sites are ceramic, making it difficult to discuss the contemporaneity of the structures.

Construction data from Higgins Flat (Martin 1979; Martin and Rinaldo 1950a, 1950b; Martin et al. 1957; Rinaldo et al. 1956) provide evidence for the contemporaneity of the site's three communal structures. The community of Higgins Flat, a 15-25-room ELP period pueblo, appears to have had early population aggregation, which was subsequently replaced by social integration. The Great Kiva and Kivas 1 and 2 at Higgins Flat, situated along the upper San Francisco River in western New Mexico, overlap in date ranges, but the Great Kiva was built over Kiva 1.

Both of Higgins Flat communal structures are quite large (128 and 100 m^2), and the Great Kiva replaced the earlier structure, both of which are situated between the site's two roomblocks. Kiva 2 is physically separated from both of the roomblocks, outside of the eastern roomblock. It is possible that the community consisted of two aggregating groups, one associated with Kiva 1 and one with Kiva 2, which suggests that aggregation occurred at the site. However, over time, the centrally located Great Kiva appears to have become the focus of communal activities for the entire community. Kiva 2 appears to have fallen into disuse after the Great Kiva was built. The three communal structures at Higgins Flat appear to provide an example of an aggregated community that became integrated over time.

Although the site files (Laboratory of Anthropology site files, Santa Fe, New Mexico) indicate that there are four communal structures at the Taylor Draw site, I have found no data for the fourth structure. Therefore, only three structures, for which there is evidence, are discussed here. The Taylor Draw site, a 60-room pueblo, provides an example of population aggregation in the Jornada area of the Mogollon region. Features 7, 15, and 22 date from A.D. 1100 to 1200, based on ceramics, and construction data (e.g., building sequences) for the structures suggest they were contemporary. Site recorders note that the ratio of 20 rooms per communal structure can be used to suggest that the site's community consisted of three aggregated clusters (Laboratory of Anthropology site files, Santa Fe, New Mexico). If the Taylor Draw communal structures are contemporary, the site represents aggregation in the Jornada region. Given the lack of absolute dates for the structures, however, it is not possible to determine whether they were contemporary.

The Victorio site, situated on Alamosa Creek in southwestern New Mexico, has a similar ratio of rooms to communal structures, with three communal structures for 36 rooms dating from A.D. 1100 to 1200 (Laboratory of Anthropology site files, Santa Fe, New Mexico; Laumbaugh 1992). Unfortunately, detailed construction data are not provided for these structures, and no decorated ceramics were encountered during excavation, which makes it difficult to discuss details of aggregation or integration that might have occurred at the site.

One ELP period site, Turkey Creek pueblo (Lowell 1991; R. Karl, personal communication, 2003), situated along Turkey Creek in the Point of Pines region of eastern Arizona, has 335 rooms and four communal structures. The Great Kiva and Rooms 152-K1, 251-K2, and 237-K3 all date to a 61-year period. The Great Kiva has a tree-ring cutting date of A.D. 1240, and Rooms 1, 2, and 3 date somewhere in the range from A.D. 1225 to 1286 (Lowell 1991). The largest structure, the Great Kiva, is centrally located, and the smaller structures are scattered throughout the site.

Data from the site suggest that both population aggregation and social integration occurred at Turkey Creek. The three smaller structures are found throughout the site, and two of the structures were found underneath rooms (Lowell 1991). Construction sequences available for the site suggest that the three smaller structures represent a part of the earlier portion of the site's occupation (Lowell 1991). The presence of the three smaller, earlier communal structures suggests that it is possible that the Turkey Creek community was formed in part by aggregation. The later Great Kiva suggests that during the ELP period the community began to promote social integration. The fact that structures were built atop the three smaller communal structures also suggests that initial aggregation was replaced by integration.

Site W:10:37 (Olsen 1959; Stone 2001), also situated in the Point of Pines region of east-central Arizona, has five ELP communal structures. Kivas 1, 2, 3, 4, and 5 date somewhere between A.D. 1150 and 1265, based on ceramic data. All of the structures are approximately the same size and have similar, although not identical, internal features. Size and feature data are discussed in a subsequent section. The ELP period community at W:10:37 consisted of 40 rooms. If all of the communal structures were contemporary, population aggregation occurred at the site, and the population appears to have been relatively segregated. The site is segregated in that if there are five clusters of eight rooms and one communal structure per cluster, then this suggests an aggregated site. The lack of absolute dates or construction histories for the communal structures makes it difficult to state that aggregation was definitely present at the site.

One additional site has ELP period communal structures. Point of Pines Ruin, also known as W:10:50, is a very large 800-room ELP and LLP period site situated in eastern Arizona (Gerald 1957; Stone 2001). Three communal structures were identified at the site, although ceramic dates and construction histories for the site suggest that only two of the structures were contemporary (Gerald 1957). Kiva 1, a very large structure, 200 m^2, was constructed at the beginning of the ELP period, but was later remodeled and expanded to an even larger size of 264 m^2 (Gerald 1957; Stone 2001). The larger communal structure, Kiva 2, which will be discussed in depth in the LLP period section, included three internal rooms. Unfortunately, size data for the third communal structure at the site, Kiva 5, is unavailable from any published or unpublished Point of Pines reports.

The available data from Point of Pines can be used to suggest that Kiva 1, a large communal structure, was built and used during the ELP period and was later replaced by an even larger structure during the LLP period. However, if Kiva 5 was used during the ELP period, it is possible that there were two contemporary communal structures at the site, which, considering the size of the site, is likely. It does appear that at Point of Pines, one large integrating structure was built and used to help organize the community's large population.

Evidence from the ELP period sites with multiple communal structures provide evidence for some degree of aggregation during this time, although problems with dating make it difficult to determine the contemporaneity of the structures at several sites. Population aggregation was certainly an important factor during the beginning of the LP period. However, after a more detailed analysis, the percentage of sites with one communal structure during the ELP period is 62 percent, which provides support for the idea that residents of the Mogollon region did continued to place some emphasis on social integration. As communities continued to deal with issues related to aggregation, they appear to have experienced changes once again, changes that are visible in the average number of communal structures at LLP period sites. During this time, average frequency indicates that social integration appears to have become more common.

Late Late Pueblo Period (A.D. 1300 to 1450). The assemblage of communal structures dating to the LLP period is much smaller than that for the ELP period, consisting of only 14 structures from 10 sites (Table 5.7 and Figure 5.18). However, average frequency data can be used to suggest that social integration was the primary focus (Table 5.7 and Figure 5.11). During the LLP period, no sites have more than three contemporary communal structures, while the majority, have only one. W:10:52 and Point of Pines have two communal structures and Grasshopper has three communal structures. I included Point of Pines pueblo, which has two communal structures dating specifically to the Late Pueblo period. The site was discussed in the section addressing ELP period structures, because the dates overlap between the ELP and LLP periods. Two of the Point of Pines communal structures Kivas 1 and 2 date to the LLP period, but Kiva and 5 may also have been used into the LLP period.

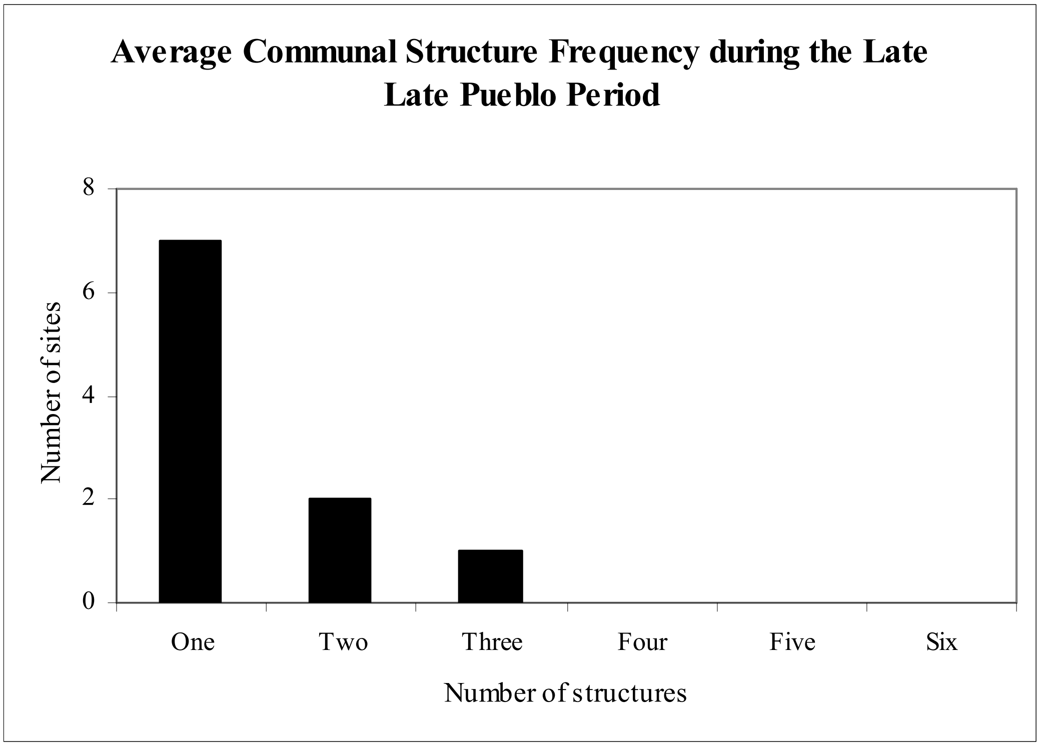


Figure 5.18. Communal Structure Frequency per Site during the Late Late Pueblo Period.

As previously discussed, there are two LP period communal structures at the Ormand site. Room 79 is the LLP period communal structure at Ormand. A much smaller structure than the ELP period, Room 97, Room 79, the LLP period communal structure, was 17 m^2 and was built into one of the roomblocks between A.D. 1300 and 1450 at the site. This structure is attached to several rooms in the roomblock, and there are at least five doorways, which provide access to the structure (Wallace 1998). The Ormand community may have become smaller during the LLP period and the site's residents may have built and used a much smaller structure, Room 79, as their communal structure during this period. This site provides evidence for LLP period integration.

At W:10:52, the two communal structures, Kivas 1 and 2, are both approximately 20 m^2 and may have been contemporary (Smiley 1952). The site consists of 100 rooms, and the two structures are associated with different parts of the site. Smiley (1952) suggests that the two W:10:52 communal structures were used during the same 50-year period (A.D. 1400 to 1450) using construction data. If this is the case, it is evidence for population aggregation at the site during the LLP period.

At Point of Pines, two LLP period communal structures, Kivas 1 and 2, are present (Gerald 1957; Stone 2001). A third structure, discussed in the previous section, Kiva 5 dates between the end of the ELP period and the beginning of the LLP period (Stone 2001). Dates for Kiva 1 range from A.D. 1265 to 1325/1350, while Kiva 2 has been dated from 1325/1350 to 1400 (Gerald 1957; Stone 2001). However, construction data for the site suggest that Kiva 2 replaced the late ELP period Kiva 1 at the site and that Kiva 2 and 5 were used at the same time during the LLP period even though they were not necessarily built at the same time (Stone 2001). The Point of Pines communal structures provide evidence for some degree of population aggregation during the LLP period.

Grasshopper pueblo, a 447-room pueblo situated on a plateau overlooking the Salt Water Draw in east-central Arizona, provides support for a dual emphasis on population aggregation and social integration during the LLP period (Riggs 2001). As Riggs (2001:124-127) points out poor preservation of wood recovered from the site limits the number of absolute dates available for various rooms; the majority of tree ring dates from

Grasshopper are tree-ring (vv) dates. At the same time, other dating techniques do provide information about the construction history (Riggs 2001:120-124).

At Grasshopper pueblo, the large Great Kiva, with a tree-ring date of A.D. 1330, is situated within the walls of the initial roomblock constructed at the site (Reid 1989; Reid and Montgomery 1999; Riggs 2001). However, tree-ring and construction data suggest that the Great Kiva was not built until the site had been occupied for more than 50 years (Riggs 2001:120). The residents of Grasshopper pueblo constructed several roomblocks and enclosed plazas before building the Great Kiva (Riggs 2001:120). It is possible that as the site grew, the site's residents constructed a Great Kiva in the founding roomblock in an effort to promote integration within their aggregated community.

There are two smaller communal structures at Grasshopper, Rooms 246 and 341, both of which have ceramic and construction dates of A.D. 1300 to 1400. These two smaller structures are embedded within roomblocks at the site. Reid (1989) and others (Reid and Whittlesey 1999; Riggs 1999, 2001:118-119) have suggested that Grasshopper was established by several related groups of people living within the area of the site. Evidence for LLP period aggregation at Grasshopper comes in the form of ceramic dates, construction sequences and architectural variation in roomblock construction (Riggs 2001). The two smaller communal structures associated with some of the site's roomblocks and built simultaneously with these roomblocks provide evidence for aggregation at the site (Riggs 2001:151). However, later in the occupational history of the site, it also appears that the residents built a Great Kiva to promote social integration within this initially aggregated community.

After a detailed analysis of LLP period communal structures, the percent of sites with only one structure is 80 percent. This percentage includes Ormand and the seven sites with only one communal structure. Eighty percent reflects a return to the level of integration evidenced during the EPS and LPS periods.

Communal Structure Frequency: A Summary

Overall, the trend in the percent of Mogollon sites with one communal structure varies through time. The percentages listed in the first column in Table 5.8 provide a general summary of communal structure data that suggests that integration was common at the majority of sites across all periods. At the beginning of each period section, I presented the initial percentages based on raw counts of communal structures. However, not all of the communal structures identified at sites are contemporary. Therefore, the percentages that resulted from the frequency analyses differ from the raw data counts (Table 5.8). The percentage of sites with only one communal structure, based on the detailed analysis of communal structure frequency in the previous sections, varies from 83 percent during the EPS period to 75 percent during the MPS period, and up to 83 percent during the LPS period (Table 5.8). The percentage drops dramatically during the EP period to 64 percent. The percentage drops slightly during the ELP period to 62 percent, but then returns to 80 percent during the LLP period.

Table 5.8. Percent of Mogollon Sites with Evidence for Integration by Period, Based on Analyses Presented in this Chapter.

Period	% of sites with one communal structure	% of sites with one communal structure, PLUS sites with multiple non-contemporary communal structures	% of sites with multiple contemporary communal structures	% of sites with conflicting or insufficient data
EPS	78	83*	6	11
MPS	63	75*	12.5	12.5
LPS	78	83*	8.5	8.5
EP	56	64*	8	28
ELP	52	59*	14	27
LLP	70	80*	0	20

***Note the percentages presented here are based on the analyses discussed in the previous sections and differ from the raw data percentages provided at the beginning of each period section.**

Tables 5.9 and 5.10 provide data to support the idea that integration was the most common organizational form throughout the Mogollon region across time. Frequency data from Mogollon communal structures also provide some evidence for aggregation at 10 sites. At four sites, there is evidence for initial aggregation, followed by integration, while three sites have evidence for integration and subsequent aggregation.

Table 5.9. Number of Sites with Evidence for Aggregation and/or Integration Based on Frequency Data.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient data
EPS	1	15	0	0	2
MPS	1	6	0	0	1
LPS	2	19	2	0	0
EP	3	23	0	3	7
ELP	3	12	2	0	4
LLP	0	8	1	0	1
Totals	10	83	4	3	16

Table 5.10. Sites with Evidence for Aggregation and/or Integration Based on Frequency Data.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient data
EPS	(1) Three Circle	(15) Bear, Bluff, Cuchillo, Galaz, Harris, Lagoon, McAnally, Mogollon, NM Y:4:6, Old Town, Promotory, Ridout Locus, Saige-McFarland, SU, Winn Canyon			(2) Crooked Ridge, Diablo
MPS	(1) Wind Mountain	(6) Gallita Springs, Harris, Mogollon, Old Town, Turkey Foot Ridge, Turquoise Ridge			
LPS	(2) Lee, Wind Mountain	(19) Beauregard, Black's Bluff, Bradsby, Cooney Ranch #1, Galaz, Gallita Springs, Harris, LA 3274, LA 2465, Lake Roberts Vista, Nantack, Old Town, Ponderosa Ranch, Sawmill/Fox Farm, Squaw Canyon, Starkweather, SU, WS Ranch, Wheatley Ridge	(2) NAN, Swarts		
EP	(3) Dinwiddie, Treasure Hill, Wind Mountain	(23) Cottonwood Creek, Diablo, Dry Prong, Elk Ridge, Galaz, Gatton's Park, LA 3272, LA 5389, LA 5405, LA 6079, LA 14883, LA 18753, LA 66686, LA 68709, Ojo Caliente, Redrock, Rock House, Saige-McFarland, , Sand Flat, TJ, Tla Kii, Wheaton Smith, Yeo 194		(3) Carter Ranch, Pueblo Lillie Allen, NAN	(7) Black's Bluff Jennie Riley Stalworth, Graveyard Point, Mattocks, Pine Creek, West Fork, Woodrow
ELP	(3) Chodistaas, Gila Cliff Dwellings, W:10:37	(12) Apache Creek, Casa Malpais, Fox Place, Goesling Ranch, Grasshopper Springs, Hough, LA 3274, Montoya, Point of Pines, Small House North of Arroyo Seco, Valley View, W:10:57	(2) Higgins Flat, Turkey Creek		(4) Ormand, Taylor Draw, Victorio, W:10:65
LLP		(8) Cordova, Hulbert, Ormand, Point of Pines, Pueblo Schoolhouse, Smokey Bear, W:10:47, W:10:48	(1) Grasshopper		(1) W:10:52

Site totals listed in Tables 5.9 and 5.10 do not always sum to the total number of sites, as many sites have evidence for changing aggregation and/or integration through time. The importance of frequency data is that having multiple contemporary communal structures at a site rather than only one suggests a more aggregated community. Having one structure to serve the entire community promotes social integration. The data presented in this section provide evidence for changes in aggregation and integration.

Small Mogollon Communal Structures: An Analysis

As mentioned in Chapter 4, there is some debate in the Mogollon region about whether all of the structures identified by researchers as kivas are actually communal structures (Gilman 1998; Lekson 1989). Those that have received the most scrutiny are smaller subterranean structures identified as kivas. In an effort to determine the impact of the smaller structures on the results presented in the frequency section, I removed all of the structures that were less than 20 m^2 from the following discussion (Table 5.11).

Table 5.11. Communal Structures from Appendix II Smaller than 20 m^2 by Period.

Site Number	Site Name	Period	Size (m^2)
LA 6000	Lee	LPS	12
LA 6000	Lee	LPS	12
LA 64931	SU	LPS	12.5
LA 6000	Lee	LPS	16
LA 6083	Gallita Springs	LPS	16
LA 78337	Bradsby	LPS	16.2
LA 6000	Lee	LPS	18
LA 6000	Lee	LPS	19
LA 66782	Sand Flat	EP	4.65
	Carter Ranch	EP	8.1
	Carter Ranch	EP	8.4
LA 127260	Wind Mountain	EP	8.96

Table 5.11 continued.

Site Number	Site Name	Period	Size (m^2)
LA 127260	Wind Mountain	EP	9.06
LA 5421	Saige-McFarland	EP	9.8
LA 8675	West Fork	EP	9.8
LA 6536	Graveyard Point	EP	11.4
LA 1118	Rock House	EP	11.6
LA 1118	Rock House	EP	11.6
AZ P:16:2	Tla Kii	EP	12
LA 3639	Pine Creek	EP	12.7
LA 635	Galaz	EP	12.8
LA 6783	Dinwiddie	EP	12.8
LA 6783	Dinwiddie	EP	13.3
LA 4986	Pueblo Lillie Allen	EP	13.5
LA 676	Mattocks	EP	13.8
LA 34787	Black's Bluff	EP	14
LA 16241	Treasure Hill	EP	14.3
LA 16241	Treasure Hill	EP	14.6
LA 676	Mattocks	EP	14.8
LA 18753		EP	15.24
LA 127260	Wind Mountain	EP	15.27
LA 3639	Pine Creek	EP	15.9
LA 8675	West Fork	EP	16
LA 6536	Graveyard Point	EP	16.8
LA 6538	Diablo	EP	16.8
LA 2465	NAN	EP	17.82
LA 127260	Wind Mountain	EP	18.24
LA 3279	Hough	LP	12.23
LA 3099	WS Ranch	LP	13
W:10:37		ELP	7.5
W:10:37		ELP	9.6
W:10:37		ELP	10.5
W:10:37		ELP	10.6
W:10:51	Point of Pines	ELP	10.6
W:10:65		ELP	10.9
W:10:65		ELP	11
AZ W:9:123	Turkey Creek	ELP	11.6
LA 6565	Taylor Draw	ELP	12
AZ W:9:123	Turkey Creek	ELP	13
AZ W:9:123	Turkey Creek	ELP	14

Table 5.11 continued.

Site Number	Site Name	Period	Size (m^2)
LA 6565	Taylor Draw	ELP	16
LA 6565	Taylor Draw	ELP	16
W:10:37		ELP	17.3
LA 68188	Fox Place	ELP	18.5
LA 8780	Grasshopper	LLP	12.48
LA 5793	Ormand	LLP	17.1
W:10:47		LLP	19

Part of the size issue is that archaeologists differ in their opinions of what qualifies as a Mogollon communal structure. There are many structures listed in Table 5.10 that were described as 'kivas' by competent archaeologists on Laboratory of Anthropology forms, in site reports, and in published articles and books. It is difficult to evaluate, based on size, whether these descriptions are valid or not.

I chose 20 m^2 because most Mogollon pit structures used for habitation are this size or smaller (Cordell 1997). As a result, 57 structures were removed and I recalculated the number of communal structures per site and the percentages of sites with one communal structure. The resulting data provided evidence that in some ways agree with the conclusions presented in the previous section concerning communal structure frequency, aggregation, and integration.

If the structures included in Table 5.11 are not communal structures, then frequency data suggest that social integration was the norm in the Mogollon region from the EPS period through the LLP period. The only change in evidence for an emphasis on integration occurs during the MPS period, as no small structures date to that period and the percent of sites with only one communal structure is 75. However, after reviewing the recalculations for communal structure frequency without the structures smaller than 20 m^2, I find the results somewhat problematic.

In eleven EP period cases, four cases during the ELP period, and two cases during the LLP period (Table 5.12), removal of structures smaller than 20 m^2 removed all of the recognized or excavated communal structures at a site. Based on these changes, the percent of sites with only one communal structure changed. The recalculations presented in Tables 5.13 and 5.14 do provide evidence for the idea that people living in the Mogollon region worked diligently to maintain a strong sense of social integration over the course of 1000 years. However, removal of communal structures smaller than 20 m^2 mainly affected the EP period, as approximately half of the structures, 29 of 60, removed dated to this period. The EP period may be heavily impacted because more sites dating to this period have been excavated or studied. It is also possible that these smaller structures did serve as communal structures, as has been evidenced in other areas of the Southwest (Nisengard, n.d.; Schmidt 2006), and are evidence for population aggregation.

Table 5.12. Sites Affected by Removal of Communal Structures Smaller than 20 m^2 by Period.

Period	Sites removed from study when smaller structures removed	Sites with conflicting data when smaller structures removed	Sites with consistent data when small structures removed
LPS	(0)	(1) Lee	(0)
EP	(11) Diablo, Dinwiddie, Graveyard Point, LA 18753, Mattocks, Pine Creek, Rock House, Saige-McFarland, Sand Flat, Treasure Hill, West Fork	(5) Black's Bluff, Carter Ranch, NAN, Pueblo Lillie Allen, Wind Mountain	(2) Galaz, Tla Kii,
ELP	(4) Fox Place, Taylor Draw, W:10:37, W: 10:65	(1) Turkey Creek	(1) Point of Pines,
LLP	(2) Ormand, W:10:47	(0)	(1) Grasshopper

Table 5.13. Sites with Evidence for Aggregation and/or Integration based on Frequency Data with Communal Structures Smaller than 20 m^2 removed.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient or conflicting data
EPS	(1) Three Circle	(15) Bear, Bluff, Cuchillo, Galaz, Harris, Lagoon, McAnally, Mogollon, NM Y:4:6, Old Town, Promotory, Ridout Locus, Saige-McFarland, SU, Winn Canyon			(2) Crooked Ridge, Diablo
MPS	(1) Wind Mountain	(6) Gallita Springs, Harris, Mogollon, Old Town, Turkey Foot Ridge, Turquoise Ridge			
LPS	(1) Wind Mountain	(20) Beauregard, Black's Bluff, Bradsby, Cooney Ranch #1, Galaz, Gallita Springs, Harris, LA 3274, LA 2465, Lake Roberts Vista, Lee, Nantack, Old Town, Ponderosa Ranch, Sawmill/Fox Farm, Squaw Canyon, Starkweather, SU, WS Ranch, Wheatley Ridge	(2) NAN, Swarts		
EP		(23) Black's Bluff, Carter Ranch, Cottonwood Creek, Dry Prong, Elk Ridge, Galaz, Gatton's Park, LA 3272, LA 5389, LA 5405, LA 6079, LA 14883, LA 66686, LA 68709, NAN, Ojo Caliente, Pueblo Lillie Allen, Redrock, TJ, Tla Kii, Wheaton Smith, Wind Mountain, Yeo 194			(2) Jennie Riley Stalworth, Woodrow
ELP	(2) Chodistaas, Gila Cliff Dwellings	(11) Apache Creek, Casa Malpais, Goesling Ranch, Grasshopper Springs, Hough, LA 3274, Montoya, Point of Pines, Small House North of Arroyo Seco, Valley View, W:10:57	(1) Higgins Flat		(3) Ormand, Turkey Creek, Victorio
LLP		(6) Cordova, Hulbert, Point of Pines, Pueblo Schoolhouse, Smokey Bear, W:10:48	(1) Grasshopper		(1) W:10:52

Table 5.14. Percent Comparisons of Mogollon Sites with One Communal Structure by Period, with Structures Smaller than 20 m^2 and Excluding those Structures.

Period	Percent of sites with one communal structure based on original frequency data	Percent of sites with one communal structure excluding structures smaller than 20 m^2
EPS	83	83
MPS	75	75
LPS	83	87 (20/23)
EP	64	92 (23/25)
ELP	62	65 (11/17)
LLP	80	75 (6/8)

Communal Structure Location

As related to issues of aggregation and integration, the location of a communal structure within the site reveals information about the social structure of an ancient community. Some scholars have provided data that support the idea that during the EPS period, communal structures were spatially separated from their pit structure villages (Anyon and LeBlanc 1980). Isolated communal structures may have been shared, and such structures would have been accessible to multiple communities (Adler 1989b; Adler and Wilshusen 1990; Johnson 1982). Isolated communal structures may have been used to integrate several communities located within proximity of one another. In such cases, people from several autonomous but related villages would come together at a large isolated communal structure to participate in a variety of activities, including resource distribution, trade, marriages, and religious and/or communal rituals. These meetings would be similar to the Yanomami *shabono* gatherings reported by Chagnon (1968, 1992) as discussed in Chapter 2.

For my research, I divided communal structure location into four categories: isolated, spatially separate, prominent, and associated (Table 5.15 and Figure 5.19).

Isolated structures are at least 50 meters away from the villages closest. Spatially separate structures are those that are separated from the rest of the architecture at the site (i.e., not attached to a particular roomblock or other structure). The spatially separate category does not include communal structures that are less than 10 meters away from other structures at a site. Spatially separate communal structures are different from prominently located structures, in that they are at least 10 meters away from the other architecture at the site (Table 5.15). Spatially separate communal structures are not categorized, as prominent and prominent structures are not classed as spatially separate. Communal structures that are prominently located may be situated in the center of a site (e.g., amidst roomblocks), in the plaza of a site, or in an otherwise important location at the site (see discussion below for examples).

The associated category includes structures are connected with a particular area of a roomblock or site. For example, at a site with 30 pit structures that has two communal structures, one on the northern side of the site and one on the south side, the "associated" location category would be used. These communal structures, because they are found at both Pit Structure and Pueblo sites, may or may not be physically attached to another structure, but will be located very close to a group of pit structures or adjacent to a roomblock. Associated communal structures are different from prominently located structures in that they are usually smaller than prominent structures and are aligned with roomblocks and or pit structures. In cases where there is some overlap in definition, I provide a detailed discussion of the structure's location in the subsequent sections.

Table 5.15. Description of Location Categories for Mogollon Communal Structures.

Location	Description
Isolated	More than 50 meters from other structures at the site
Spatially Separate	More than 10 meters from other structures at the site
Prominent	Within 10 meters of other structures and situated in a central or focal location at a site
Associated	Attached to a roomblock or in case of a pit structure community, within 10 meters of a particular group of pit structures

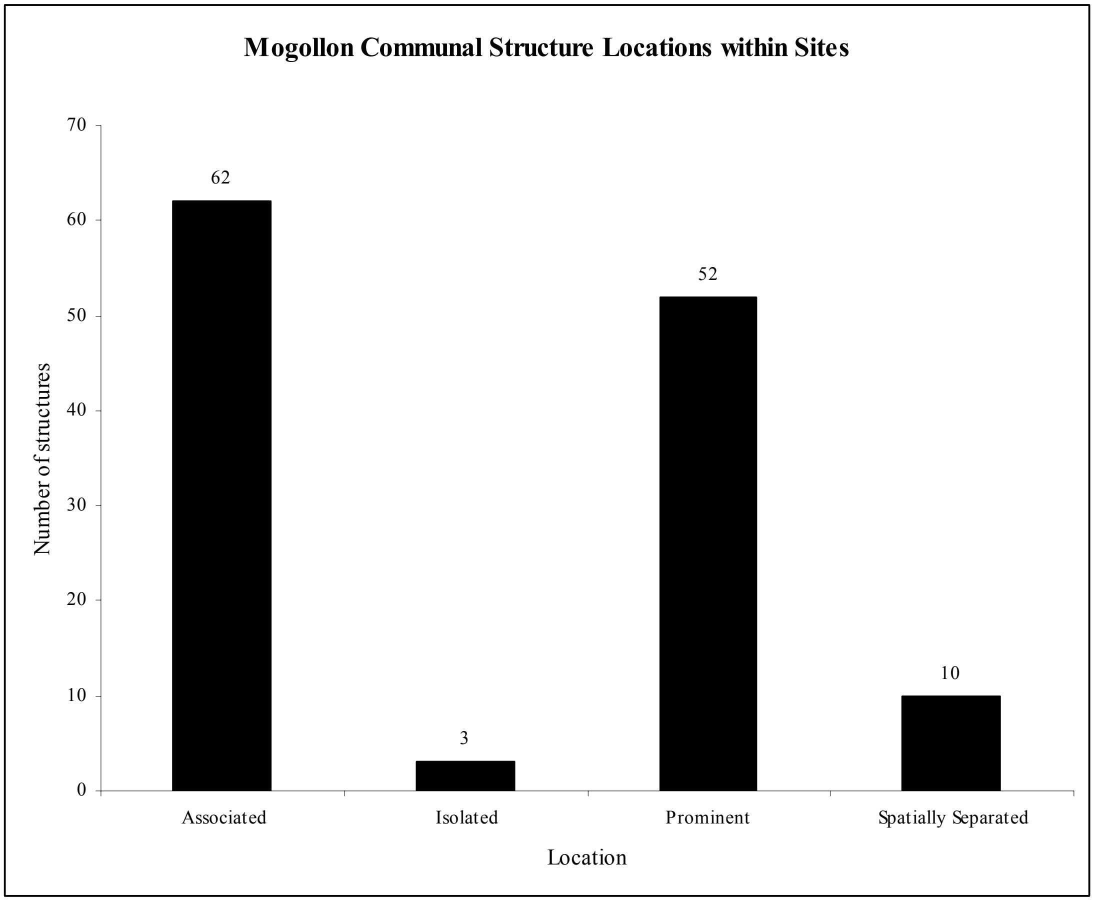


Figure 5.19. Mogollon Communal Structure Locations.

The four categories of location are meaningful in terms of aggregation and integration in several different ways. For instance, when a communal structure is isolated from a community, it may be serving to integrate more than one group of people. A spatially separate structure is indicative of social integration at a site, in that it brings all members of the community to a place that is distinct from the buildings within which they reside. If a structure is built in a prominent location, it may indicate of a high degree of integration, as illustrated by the Arroyo Hondo and Pot Creek examples discussed in Chapter 2 (Crown and Kohler 1994). A communal structure that is associated with a specific roomblock will be important to the inhabitants of that roomblock, and it reflects an integrated segment of the group within a potentially aggregated community (Hill 1970; Steward 1937). The associated category also includes communal structures that appear to be connected to particular areas of the site, and it is an appropriate designation when discussing communal structures in pit structure communities. In a situation where there are many roomblocks and only one communal structure associated with a particular roomblock, it may be that these are the more politically, spiritually, or economically powerful people in the community. These may also be the most socially isolated sections of a community (see Woodson 1999 for an example of this). It is also possible that in an aggregated community only some of the aggregating groups built and used communal structures. As stated in Chapters 1 and 2, aggregating groups do not necessarily share the same political, religious, or ceremonial beliefs and therefore some people may have built and used communal structures, while others did not.

Location data were available for 127 of 206 structures in the Appendix II database, including several communal structures dating to the general Pit Structure and Pueblo periods. Prominently located communal structures (n = 52) and those associated with a roomblock, or particular area of the site (n = 62), are the most common and account for 90 percent of the assemblage (Figure 5.20 and Appendix II). Those structures that could not be dated to a specific period are not included in the subsequent analyses. One hundred and sixteen communal structures, for which specific dates were provided, are included in the following analysis (Table 5.16). Figure 5.20 and Table 5.16 display the results of the location analysis for structures that could be dated to a specific period.

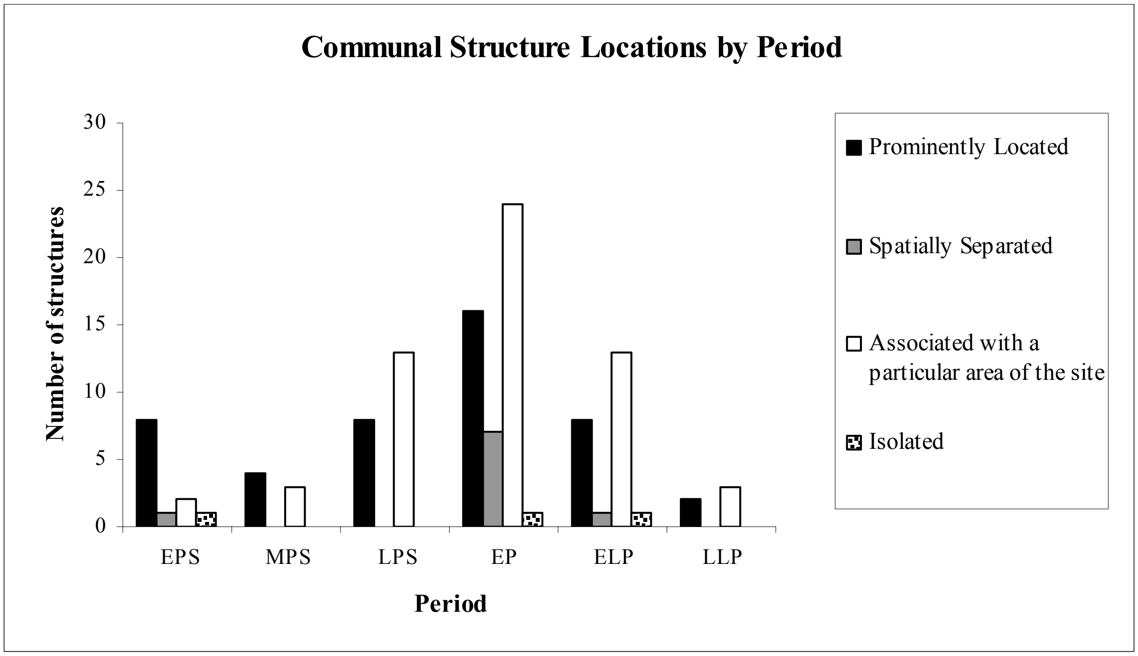


Figure 5.20. Communal Structure Location Data by Period with the LP Period Separated into ELP and LLP Periods.

Table 5.16. Communal Structure Locations by Period.

Period	Associated	Isolated	Prominent	Spatially Separated
EPS	2	1	7	1
MPS	3	0	5	0
LPS	13	0	8	0
EP	24	1	16	7
ELP	13	1	8	1
LLP	3	2	0	0
Totals	**58**	**5**	**44**	**9**

Pit Structure Period

Early Pit Structure Period (A.D. 250 to 700). Location data are available for 11 EPS period communal structures from nine sites (Table 5.17 and Figure 5.21). Although this is a relatively small sample, these data do provide information about the location of communal structures at this early time. During the EPS period, the majority of communal structures are prominently located (n = 7) within their communities. There are, however, two structures, one at McAnally and one at Galaz that are associated with specific areas of the site (Anyon and LeBlanc 1984). Spatially separate structures are those that are not centrally or prominently located, and that are physically separated from all of the other structures at the site. Although previous accounts of EPS period communal structures state that all are isolated (Anyon and LeBlanc 1980), only one EPS period structure, Kiva 1 at Bear ruin, is located further than 50 meters from the nearest community (Anyon and LeBlanc 1980; Haury 1985).

Table 5.17. Communal Structure Location during the EPS Period.
P = prominent location; S = spatially separated;
A = associated with a particular area of the site; I = isolated.

Site Number	Site Name	Room Designation	Location
LA 103907	Bluff	House 5	P
W:10:15	Crooked Ridge	Pithouse 9	P
W:10:15	Crooked Ridge	Structure 19	P
LA 1867	Harris	House 14	P
LA 1867	Harris	8	P
LA 11568	Mogollon	House 5A	P
LA 1113	Old Town	A67	P
LA 34813	Winn Canyon	Room 2/Kiva	S
LA 635	Galaz	Unit 8	A
LA 12110	McAnally	Unit 11	A
AZ P:16:1	Bear	Kiva 1	I

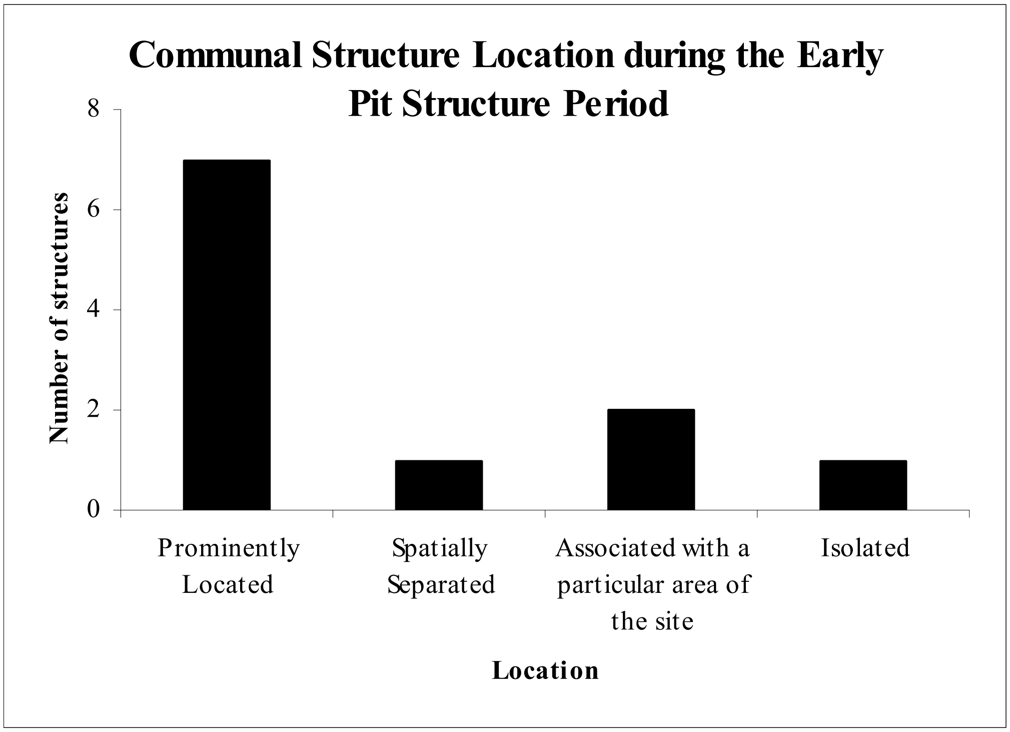


Figure 5.21. Communal Structure Location during the EPS Period.

Kiva 1 at Bear ruin provides an example of a site with an isolated communal structure in the Forestdale area of the Mogollon region. The communal structure at Bear ruin is a large, turtle shaped building with a non-cutting tree-ring date of A.D. 667, and it is situated on the outskirts of the pit structure community with which it was associated (Haury 1936, 1941; Haury and Sayles 1947; Wheat 1955). This large structure likely served an integrating function for members of the Bear ruin community, which consisted of approximately 40 pit structures. Given the large size of the structure, it may also have facilitated visits from members of neighboring communities as discussed above and in Chapter 2.

Seven of the 11 EPS period communal structures are in prominent locations at sites, and most are near the center of the village with which they are associated (Figure 5.21). These data provide support for the idea that at this time there was a strong emphasis placed on social integration at these sites. The location of these structures, particularly at sites where they are the only communal structures dating to the period (e.g., Old Town, Mogollon village, and Bluff), provides a central meeting place for all members of a community. For example, House 5 at the Bluff site (Haury 1985; Haury and Sayles 1947) is one of the earliest structures in the database and dates to the early part of the EPS period (A.D. 320). The site, situated on Forestdale Creek in east-central Arizona, consists of 30 to 35 pit structures. House 5 is a communal structure that is three times the size of all of the other pit structures at the site and is centrally located (Haury 1936; Wheat 1955:17). Location data from the Bluff site provide evidence for integration during the EPS period.

At the Old Town site, structure A67 is not in the center of the site but is in a prominent location at the entryway to the community (Creel 1999a, 2000, 2001). The only documented ancient Mogollon road was found at Old Town, and the road terminates at the entrance to this communal structure. Creel (1999a, 1999b, 1999c) has stated that in terms of location, the structure appears to have been the focal point for this EPS period village. A67 is at least three times the size of all of the other pit structures at the site. The communal structure would have been the first building visitors to the site would have seen as they traveled on the road into the village. This site also provides evidence for

EPS period integration in that there is only one communal structure at the site and it is located in a prominent place in the community.

There are two EPS sites, Crooked Ridge and Harris, with two centrally located communal structures, for which location data were available. Studies conducted at Crooked Ridge failed to provide absolute dates for the site's two EPS period communal structures (Wheat 1955). A 200-year age range (A.D. 400 to 600) is available for the two structures, and based on these dates it is difficult to determine if Pithouse 9 and structure 19 were contemporary. However, construction data from the site suggest that Pithouse 9, the smaller of the two structures, was replaced by a larger structure, structure 19 (Wheat 1955). Since the site consisted of 100 pit structures (Wheat 1955), it is clear that the residents of the community needed a larger structure to facilitate their communal activities. These location data, suggest that integration was a focus at this site, but due to the lack of dates it is difficult to be certain.

At the Harris site, in the Mimbres valley (Anyon and LeBlanc 1980; Diehl and LeBlanc 2001; Haury 1936), there are also two EPS period communal structures. The initial structure, House 14 (A.D. 582v), occupied a central location at the site (Anyon and LeBlanc 1980; Haury 1936). House 14 was eventually destroyed by fire (Creel and Anyon 2003) and was subsequently replaced by a larger communal structure, House 8 (A.D. 650to750), which was also centrally located within the site's eight EPS period habitation units (Wheat 1955). The two Harris communal structures provide additional evidence for EPS period social integration.

A majority of EPS communal structures are isolated (I), spatially separate (S), or situated in prominent (P) locales. These structures are also most frequently the only communal structure at their sites. Isolated, spatially separate, and prominent locations support the findings presented in the frequency section and suggest that social integration was emphasized during the EPS period. Both Galaz and McAnally have communal structures that are associated with specific areas of their pit structure communities. AS previously stated, the fact that these structures are the only ones at their sites may suggest that they are situated near the homes of people with some degree of power at the site. The location may also indicate possible aggregation, in that perhaps only some members of the community build communal structures. However, Unit 11 at McAnally is likely evidence for integration as there are only 12 pit structures at this site. Although both Crooked Ridge and Harris have more than one communal structure, the Harris communal structures actually provide evidence for integration. Data from Crooked Ridge are insufficient and location data for the two communal structures at the site do not provide evidence for aggregation or integration. Ultimately, analysis of location data reveal, that of the nine EPS period sites, seven have evidence for integration.

Middle Pit Structure Period (A.D. 700 to 850). Location data are available for eight of the communal structures from six sites that date to the MPS period (Table 5.18 and Figure 5.22). Five of the MPS period sites have one large, prominently located communal structure, while one site has three smaller structures, which appear to be associated with specific areas of the site (Table 5.18). Black's Bluff (Anyon and LeBlanc 1980), Gallita Springs (Lekson 1996), and Harris (Anyon and LeBlanc 1980; Diehl and

LeBlanc 2001; Haury 1936) have a single, centrally located MPS period communal structure. Old Town and Mogollon village have one prominently located communal structure. Wind Mountain (Woosley and McIntyre 1996) has three MPS period communal structures associated with specific areas of the site.

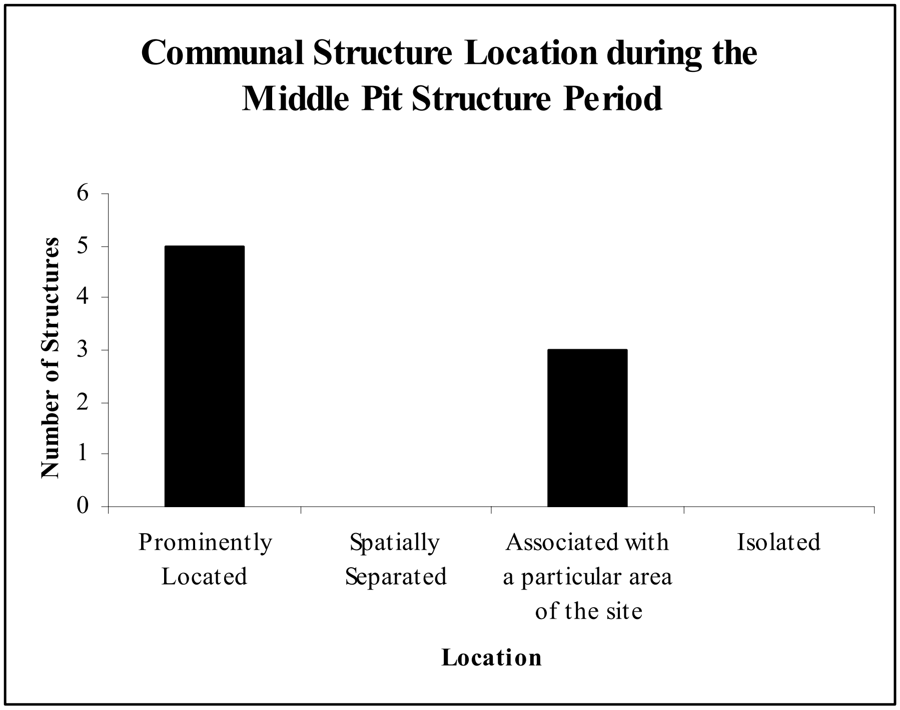


Figure 5.22. Communal Structure Location during the MPS Period.

Table 5.18. Communal Structure Location during the MPS Period.
P = prominent location; S = spatially separated;
A = associated with a particular area of the site; I = isolated.

Site Number	Site Name	Room No.	Location
LA 34787	Black's Bluff	Pit House 1	P
LA 6083	Gallita Springs	Feature 40	P
LA 1867	Harris	House 23	P
LA 11568	Mogollon	House 3	P
LA 1113	Old Town	A71	P
LA 127260	Wind Mountain	House AB	A
LA 127260	Wind Mountain	House AK	A
LA 127260	Wind Mountain	House O	A

A71 at Old Town is interesting in that it was built atop the EPS period communal structure. At Old Town (Creel 1999a, 2000, 2001), structure A71 was superimposed upon structure A67. The MPS period Old Town communal structure is a different shape and almost twice as large as the earlier structure. In this case, location data suggest that social integration occurred at the site and that this particular location at the site was important, as it was used multiple times for the construction of the site's communal structure. As previously noted, an ancient road begins in the floodplain below the Old Town site and terminates at the entrance of the communal structure (Creel 1998, 1999a). This provides additional evidence for the importance of the location of this structure within the site's settlement pattern. The fact that the MPS period communal structure was built atop the EPS period structure at Old Town supports the idea that social integration continued to be important to the community.

Archaeomagnetic dates for the three Wind Mountain communal structures indicated that House AB, the largest of the three structures, was built between A.D. 620 and 730. The smaller structures, House AK and House O, were constructed between A.D. 640 and 780 and A.D. 650 and 750, respectively (Woosley and McIntyre 1996). The construction sequence at Wind Mountain indicates that the three communal structures were used at the same time (Woosley and McIntyre 1996:26-27, 28, 88). While the structures were not necessarily built at the same time, they were likely to have been contemporary. All three of the Wind Mountain communal structures are associated with particular areas of the site. The communal structures are associated with different parts of the site. Wind Mountain provides evidence for population aggregation during the MPS period.

A majority of the MPS period sites, five of the six or 83 percent, for which location data are available have prominent, and commonly central, located communal structures. With the exception of Wind Mountain, MPS period sites support the idea that social integration continued to be an important focus at Mogollon sites during this period.

Late Pit Structure Period (A.D. 850 to 1000). Twenty-one communal structures from ten sites in the assemblage date to the LPS period (Table 5.19 and Figure 5.23). During this period, there are more sites with multiple communal structures (e.g., Nantack, Wind Mountain, Lee, and NAN) than there were during previous periods. In addition, unlike the previous two pit structure periods, the majority of the LPS period communal structures are not centrally located within their communities.

Table 5.19. Communal Structure Location during the LPS Period.
P = prominent; S = spatially separated;
A = associated with a particular area of the site; I = isolated.

Site Number	Site Name	Room Designation	Location
LA 5841	Cooney Ranch #1	Communal Structure 1	P
LA 635	Galaz	42A	P
LA 1867	Harris	House 10	P
AZ W:10:111	Nantack	Pithouse 10	P
AZ W:10:111	Nantack	Great Kiva 1	P
LA 1113	Old Town	A16	P
LA 127260	Wind Mountain	House XX	P
LA 127260	Wind Mountain	House X	P
LA 78337	Bradsby	1	A
LA 6000	Lee	21	A
LA 6000	Lee	23	A
LA 6000	Lee	20	A
LA 6000	Lee	18	A
LA 6000	Lee	19	A

Table 5.19 continued.

Site Number	Site Name	Room Designation	Location
LA 6000	Lee	22	A
LA 2465	NAN	52	A
LA 2465	NAN	91	A
LA 2465	NAN	43	A
LA 127260	Wind Mountain	House Y	A
LA 127260	Wind Mountain	House U	A
LA 3099	WS Ranch/McKeen	Kiva C	A

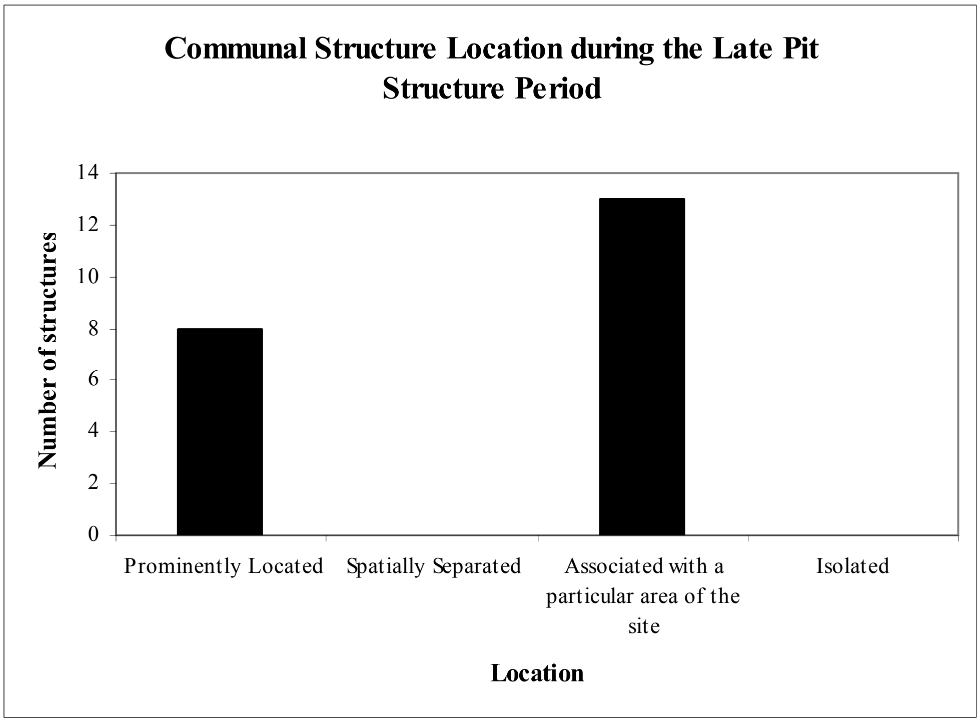


Figure 5.23. Communal Structure Location during the LPS Period.

Thirteen of LPS period structures are associated with specific areas of a site, most of these sites have more than one communal structure and are discussed below. However, Bradsby and WS Ranch each have only one associated communal structure. Structure 1 at Bradsby is relatively small and is associated with the site's only roomblock (Anyon and LeBlanc 1980). As a result, Bradsby reflects integration even though the communal structure is associated with other structures at the site. At WS Ranch, Kiva C is located closest to one area of the site and may reflect aggregation at this LPS period site in that there is no large prominently located communal structure that could serve the entire community. It is possible that the WS Ranch community was comprised of aggregating groups of people, some of whom built communal structures, some of which did not.

Eight structures are located in prominent locations within their communities. The LPS period communal structure, 42A, at Galaz, although separate, but not more than 10 meters away from other architecture at the site, is situated in a prominent location (Anyon and LeBlanc 1980). At Harris, House 10 is the only LPS period communal structure and is situated in a prominent location at the site, providing evidence for integration.

Cooney Ranch #1 (Stokes 2000b), Old Town (Creel 1998, 1999a), Nantack village (Breternitz 1956, 1959), and Wind Mountain (Woosley and McIntyre 1996) all have prominently located LPS period communal structures. The centrally located communal structure 1 excavated at Cooney Ranch 1, in the Mimbres valley, was used during the LPS period (A.D. 900 to 980) (Stokes 2000b). Interestingly, the residents of Cooney Ranch 1 subsequently abandoned and dismantled the LPS period communal structure at the beginning of the EP period (Stokes 2000b). Location evidence for this structure suggests that social integration was emphasized during the LPS period at this site in the Mogollon region.

At Old Town (Creel 1998, 1999a), during the LPS period, the site’s inhabitants built a new structure, A16 (A.D. 874 to 925), atop the two earlier EPS and MPS period structures in the same location. While this structure is not in the center of the site, it was constructed in a prominent location at the site, which is fronted by the ancient road that led to the site. This third Pit Structure period communal structure at Old Town is the largest of the three and may provide evidence for increasing population size over time at the site. As the population grew, the site's inhabitants constructed larger and larger communal structures to integrate their growing numbers. Again, the location of the Old Town structure is important as evidence for social integration during the LPS period and as evidence for the importance of the structure's location within the community.

Nantack village has two prominently located LPS period communal structures one of which is smaller than the other one (Breternitz 1956, 1959). Ceramic dates of A.D. 900 to 1000 were provided for the two communal structures, Great Kiva 1 and Pithouse 10 (Breternitz 1956, 1959). Breternitz (1956) used a construction history to address the issue of whether or not the structures were coeval. According to Breternitz (1956), Pithouse 10 is much smaller (60 m^2) than the Great Kiva (152 m^2) and was built first at the site (Breternitz 1956). Although there are two prominently located communal structures at Nantack village, they are not contemporary and the site provides evidence to support the idea that in this area of the Mogollon region social integration was the focus.

At Wind Mountain, two of the LPS period communal structures, Houses XX and X, are centrally located, while two others, Houses U and Y, are associated with areas of the site (Woosley and McIntyre 1996). House Y was abandoned toward the end of the LPS period and another structure was erected atop it (Woosley and McIntyre 1996). House XX was built atop the earlier House AB communal structure and House U later became a smaller communal structure, House V (Woosley and McIntyre 1996). Despite the remodeling and rebuilding occurring at Wind Mountain, based on ceramic data and construction sequence information, at least two of the LPS period communal structures, Houses X and XX, appear to have been contemporary. Again, both of these structures are located close to the center of the community. Location data from the Wind Mountain communal structures provide evidence for a continuation of population aggregation at the site. The prominent location of these two structures may indicate a trend toward social integration within the aggregated community during the LPS period.

Two sites, NAN and Lee village, have multiple LPS period communal structures associated with particular areas of the site. NAN Ranch ruin, a 25-30-pit structure LPS period site located along the Mimbres River in southern New Mexico, has three ornate communal structures, each associated with a particular area of the site (Burden 2001; Shafer 2003). Structure 52 has a mural of a painted serpent, several pits, a sipapu, and a deflector. Researchers identified two hearths, multiple floor pits, a sipapu, and an alter in structure 91. In addition, there was evidence for long-term use of the structure (e.g., multiple replastering events). In structure 43, only a hearth was identified. The diversity in decoration, features, and construction of these three communal structures is indicative of population aggregation, because each structure appears to be associated with one of three areas of the site. However, as stated in the frequency section above, it appears that two of the structures, the smaller ones, were built before the third structure, 43. The two smaller structures were subsequently destroyed and burned and a larger communal structure was erected at the site (Burden 2001; Creel and Anyon 2003; Shafer 2003); the latter was not burned. If a single structure replaces the earlier structures during the LPS period, then there is evidence for a trend towards social integration during the LPS period at NAN.

The six communal structures associated with specific areas of Lee village (also known as Fort West Hill) provide evidence for population aggregation during the LPS period (Bussey 1972). As stated in the frequency section, Bussey (1972, 1975) did not encounter decorated ceramics on the floors of the communal structures at the site. However, Bussey was able to relatively date the six structures. According to Bussey's (1972) calculations, structures 21, 22, and 23 were built earlier than structures 18, 19, and 20. While there are inconsistencies in Bussey's dating, his alternate dating technique provides evidence that there were three contemporary communal structures associated with specific areas of Lee village. Therefore, there is evidence for population aggregation at the site during the LPS period.

During the LPS period, sites with multiple communal structures become more prevalent. Sites with contemporary communal structures associated with specific parts of the community provide evidence for increasing population aggregation during the LPS period. As these communities grew, additional communal structures were built, and as a result, many sites that date to this period have a relatively segregated appearance (i.e., groups of pit structures and communal structures). More so than the frequency data presented earlier, location data for the LPS period can be used to suggest that population aggregation becomes an important issue during the LPS period. At Nantack, while there are multiple structures, they are not contemporary. As a result, it is clear that integration did continue to be important within most LPS period Mogollon communities.

Communal Structure Location during the Pit Structure Period: A Summary

Location data from Pit Structure period sites provide data to support the idea that throughout the period social integration was important at the majority of Mogollon communities. However, location data suggest that as early as the MPS period, population aggregation appears to become an issue. Aggregation appears to have continued into the LPS period according to some of the location data. Old Town, a Mimbres valley site, provides a rare and important example of the importance of social integration within a community over a period of several hundred years. As previously stated the Old Town ruin has three fully excavated Pit Structure period communal structures (A-16, A-67, A-71) and each structure dates to a different part of the Pit Structure period. At the site, members of the community destroyed old communal structures and built new ones, sometimes directly atop but always at least adjacent to the abandoned one (Creel 1997a, 1998, 1999a, 1999b, 1999c; Creel and Anyon 2003). Social integration and the location for the Old Town communal structures appear to have been important to people living at this site.

Pueblo Period

The Early Pueblo Period (A.D. 1000 to 1150). Location data were available for 48 EP period communal structures from 28 sites (Table 5.20 and Figure 5.24). There is a great deal more variation in location during the EP period (Figure 5.24). While the majority of EP period communal structures (n = 24) are associated with specific roomblocks, 16 structures are located in prominent areas of their sites, seven are spatially separated from the other structures at the site, and one, Kiva 1 at Tla Kii, is truly isolated. Location variation may be indicative of some degree of cultural diversity at Mogollon sites during the EP period, a result of possible population aggregation.

Table 5.20. Communal Structure Location during the EP Period.
P = prominent location; S = spatially separated;
A = associated with a particular area of the site; I = isolated.

Site Number	Site Name	Room Designation	Location
LA 34787	Black's Bluff	Great Kiva 13	P
	Carter Ranch	Kiva 1	P
W:6:5	Dry Prong	Kiva 1	P
LA 78963	Elk Ridge	Kiva	P
LA 635	Galaz	73 (Parrot Kiva)	P
LA 33642	Jennie Riley Stallworth	Great Kiva	P
LA 2465	NAN	45	P
LA 86310	Ojo Caliente G	Great Kiva	P
LA 5412	Redrock		P
LA 54955	TJ		P
LA 2454	Woodrow		P
LA 2454	Woodrow		P
LA 66686		Kiva	P
LA 14883			P
LA 3272			P
LA 6079			P
	Carter Ranch	Great Kiva	S
LA 6538	Diablo	Feature 7	S
LA 6536	Graveyard Point	Feature 8	S
LA 6536	Graveyard Point	Feature 9	S
LA 3639	Pine Creek	1	S
LA 3639	Pine Creek	Room 4	S
LA 18753			S
LA 34787	Black's Bluff	Kiva 7	A
	Carter Ranch	Room 16	A
LA 6783	Dinwiddie	Feature 14	A
LA 6783	Dinwiddie	Feature 11	A
LA 635	Galaz	Kiva 107	A
LA 11075	Gatton's Park		A
LA 676	Mattocks	Unit 410	A

Table 5.20 continued

Site Number	Site Name	Room Designation	Location
LA 676	Mattocks	Kiva 48	A
LA 2465	NAN	58	A
LA 2465	NAN	57	A
LA 2465	NAN	18	A
LA 2465	NAN	39	A
LA 1118	Rock House	Feature 7	A
LA 1118	Rock House	Feature 8	A
LA 16241	Treasure Hill	Room 6	A
LA 16241	Treasure Hill	Room 8	A
LA 8675	West Fork	10	A
LA 8675	West Fork	6	A
LA 18903	Wheaton Smith	Unit 34	A
LA 127260	Wind Mountain	House P2	A
LA 127260	Wind Mountain	Room 3	A
LA 127260	Wind Mountain	Room 15	A
LA 127260	Wind Mountain	Room 7	A
LA 127260	Wind Mountain	House V	A
AZ P:16:2	Tla Kii	Kiva 1	I

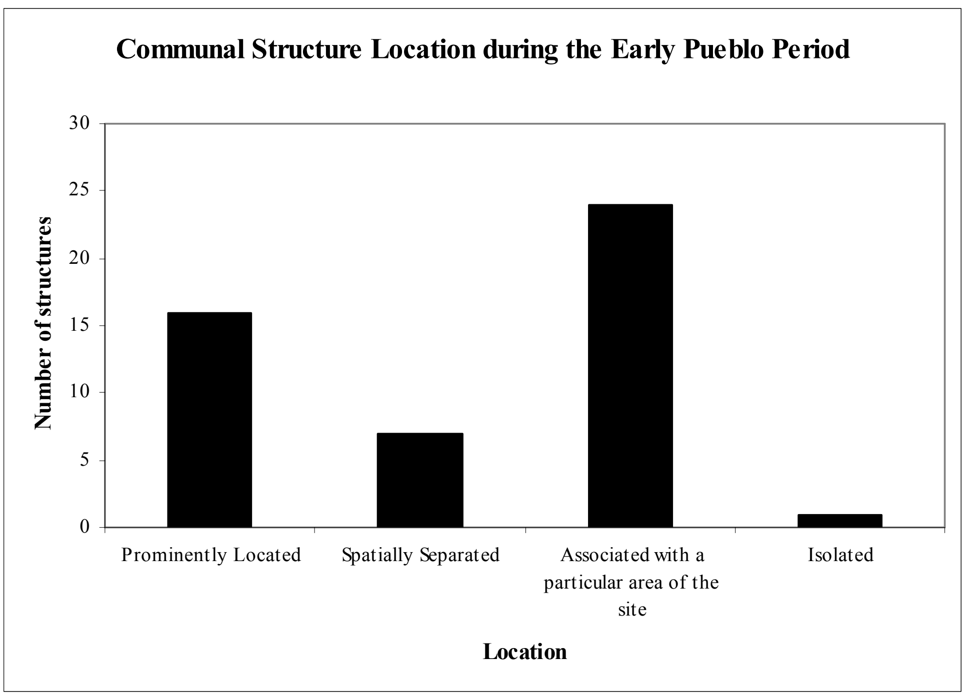


Figure 5.24. Communal Structure Locations during the EP Period.

Variation is not limited to location data during the EP period, and in fact, architectural diversity in general is manifested in a much more dramatic way with the construction of above ground, linear roomblocks. One wide-reaching change at many sites dating to the EP period in terms of general architectural styles is that many pit structures are replaced by above ground masonry roomblocks (Anyon et al. 1981; Cordell 1997; LeBlanc 1983). In many cases, during the EP period, communal structures were built along with roomblocks, and many were attached to the associated roomblock. It is also interesting to note that data from Appendix II show that for the first time during the EP period, plazas became an important location for communal structures.

One area where aggregation appears to have occurred was in the Mimbres valley of southern New Mexico (Anyon and LeBlanc 1980; Cordell 1997). For example, the Mimbres valley site of NAN has four EP communal structures for which location data are available (Shafer 2003). Communal structures 18 (A.D. 1071 to 1100), 57 (A.D. 1025 to 1070), 58 (A.D. 1000 to 1130), 45 (A.D. 1107), and 39 (A.D. 1090) were used at the site during the EP period (Burden 2001). Using construction sequences for the site, Shafer (2003) and Burden (2001) have provided evidence that structure 57 was a contemporary of structure 58. Burden (2001) posits that structure 57 was abandoned before the construction of structures 18, 45, and 39 and Shafer (2003) suggests that structure 58 continued to be used along with structures 18, 39, and 45.

Interestingly, each of the four NAN EP communal structures is associated with one of the four roomblocks excavated at the site (Burden 2001; Shafer 1990, 1995, 2003). Because one of the NAN communal structures was abandoned prior to the construction of several others, it appears that as the NAN population grew, new roomblocks were added to the community. Associated with these new roomblocks were communal structures. Location data from the NAN communal structures provide evidence for population aggregation in the Mimbres valley during the EP period. However, the presence of structure 45, located in a prominent place at the site suggests some degree of integration was present as well.

At Rock House ruin (Anyon and LeBlanc 1980), located in New Mexico, there are two EP period communal structures attached to the site's only roomblock. However, the two structures were not used at the same time, but were built sequentially in the same location by remodeling a LPS period pit structure (Anyon and LeBlanc 1980). At Rock House Ruin, while the communal structure is in the associated category, because it is attached to the roomblock, it provides evidence for social integration at the site. Location data is also important because the community used the same space for both of their communal structures.

Black's Bluff provides additional evidence for EP period integration in other parts of the Mogollon region. Location data were available for both of the EP period communal structures identified at this site (Fitting et al. 1972). The Great Kiva at Black's Bluff is located in a prominent position at the site; it is large and centrally located. Kiva 7 was associated with a particular roomblock at the site (Fitting et al. 1972). It is unclear whether these structures are contemporary or not. If they are, it is possible that population aggregation occurred at Black's Bluff. If they are not and the smaller structure was the first at the site, the community may have been trying to mitigate aggregation with the construction of a Great Kiva, which would have reinforced social integration. It is not possible to determine this without knowing if the two structures are coeval.

At Carter Ranch, location data were available for three communal structures. One is prominently located within the site, one is a spatially separate Great Kiva, and one is associated with a particular roomblock (Laboratory of Anthropology site files, Santa Fe, New Mexico; Longacre 1966). It is unclear if these structures were contemporary, but Longacre (1966) reports that the Great Kiva was constructed first at the site. However, it does appear that at this site, social integration appears to have been reinforced by the community in two ways. First, the Carter Ranch community constructed a centrally located (i.e., prominent) communal structure, which was enclosed within a plaza. The location of the communal structure, in an area with relatively limited access, would have underscored social integration within the community itself. Second, the community built a spatially separate large Great Kiva 10 meters from their community's center, which would have promoted the involvement of members of the community, but also could have included visitors to the community.

There is an alternative way to consider the location data from Carter Ranch. It is possible that the founders of the community constructed a roomblock, a plaza, and the spatially separate Great Kiva. As the site grew, additional roomblocks were added, as were communal structures Kiva 1 and Room 16. These two smaller communal structures may represent evidence for population aggregation at the site.

The EP period sites of Graveyard Point, Pine Creek, Dinwiddie, Treasure Hill, West Fork, and Mattocks all have two relatively small communal structures that are either associated with specific roomblocks or spatially separated from the site's architecture. Galaz has one large and one very small communal structure and two large communal structures were reported at Woodrow ruin. Wind Mountain has four small communal structures each situated close to a particular roomblock.

Accola and Neely (1980) reported two EP period communal structures, Features 8 and 9, at Graveyard Point ruin. Both of the structures are relatively small (<20 m^2) and both are spatially separated from the site's roomblocks. The presence of two communal structures at the site is indicative of aggregation. However, the spatially separate location of the structures may be indicative of some level of integration during the EP period. Ceramic dates, which range from A.D. 1000 to 1150, are the only dates available for the two EP period communal structures, so it is not possible to determine whether the two were contemporaneous. If the structures were used at the same time, Graveyard Point reflects some degree of population aggregation during the EP period. If they were not contemporary they were instead sequential, the site may provide evidence for integration. It is not possible to determine which of these two scenarios is correct without additional chronometric data.

Pine Creek pueblo is located on a tributary of the Gila River in southwestern New Mexico (Anyon and LeBlanc 1980). The two EP period communal structures at this site, Rooms 1 and 4, are relatively small and both are spatially separated from the rest of the site's architecture. Dates for the two structures span the entire EP period from A.D. 1000 to 1150, and there is not enough chronometric data for the structures to determine if they were coeval. If these structures were contemporary, they appear to provide evidence for population aggregation in this area of the Mogollon region during the EP period. However, given the lack of absolute dates there is insufficient data to state whether aggregation or integration was present at the site during the EP period.

As previously stated, Dinwiddie is an EP period site situated on the upper Gila River in southwestern New Mexico. There are two communal structures, Features 11 and 14 that date to this period (Bussey 1972). Based on ceramic data, the site has been dated between A.D. 1032 and 1100 (Bussey 1972:78). Features 11 and 14 are approximately the same size (less than 20 m^2) and the relative dates available for the structures do overlap (Anyon and LeBlanc 1980; Bussey 1972; Linse 1999a). There are two roomblocks at Dinwiddie, one located on the eastern side of the site, the other on the western (Anyon and LeBlanc 1980; Linse 1999a). Feature 14 is attached at the northern end of the western roomblock and Feature 11 is associated with the eastern roomblock at the site (Anyon and LeBlanc 1980:268-269; Bussey 1972:62). Given the relatively short occupation at the site, the location of these structures, when combined with frequency data that suggests that the structures were contemporary, supports the contention that aggregation occurred during the EP period at this Mogollon site.

The Treasure Hill site is situated on Cameron Creek in southwestern New Mexico (Cosgrove 1923). There are two communal structures at the site and they are approximately the same sizes (less than 20 m^2) and are associated with particular areas of the site (Anyon and LeBlanc 1980; Cosgrove 1923; Cosgrove and Cosgrove 1932).

Ceramic dates for the two structures, Rooms 6 and 8, do overlap (Cosgrove 1923). Room 6 is associated with the northern roomblock and Room 8 with the east roomblock (Anyon and LeBlanc 1980; Cosgrove 1923). Location data for the two structures provide evidence for EP period aggregation.

Excavations at the West Fork site, situated on the west fork of the Gila River in southwestern New Mexico provided no absolute dates for the site's two communal structures (Anyon and LeBlanc 1980; Ice 1968). Ceramic date ranges for communal structures 10 and 6 are A.D. 1000 to 1150 (Anyon and LeBlanc 1980; Ice 1968). Unfortunately, ceramics found within the site, which has subsequently been destroyed (Shafer 2003:112), date only broadly to the EP period. Both of the structures are associated with particular areas of the site and both are relatively small (Anyon and LeBlanc 1980; Ice 1968). While absolute dates are not available, the location data for the two West Fork communal structures suggest population aggregation during the EP period.

In the Mimbres valley, at the Mattocks ruin, two small (less than 20 m^2) communal structures have been identified (LeBlanc 1983). Both structures are associated with specific roomblocks at the site. Unit 410 (a tree ring date for the structure is A.D. 1020v and archaeomagnetic date range is from A.D. 1015 to 1250) was a LPS period pit structure used for habitation that was remodeled into a communal structure during the EP period (LeBlanc 1983). The second structure, Kiva 48 (A.D. 1000 to 1150) was the first communal structure. The dates for Unit 410 and Kiva 48 do overlap in that they both date to the EP period, and so they reflect the possibility of population aggregation at the site. The fact that there are only two small communal structures for approximately 180 habitation rooms also provides evidence for aggregation, because some groups appear to be building and using communal structures, while others do not.

There are two communal structures at the 150 -room Mimbres pueblo of Galaz. The Parrot Kiva (73) is large and located in a prominent location within the site. A smaller communal structure, Kiva 107, also dates to the EP period, and is associated with one of the site's roomblocks. Based on the ceramic dates available for these two structures, the Parrot Kiva was constructed before Kiva 107, but the two structures were used at the same time during the EP period. Location data from the site suggests that at this site integration was maintained over time and that at some point aggregation appears to have become an issue at the site.

There are two large EP period communal structures at the 300-room Woodrow ruin, located in southwestern New Mexico northwest of Silver City (Stuart and Gauthier 1984). Both structures are quite large, situated next to one another, and located in a prominent location within the site's 16 roomblocks (S. Lekson, personal communication 2005). The lack of dates for the structures, because they were subject to limited testing, is problematic when attempting to determine if they are coeval. The communal structures have very little post-depositional fill within them, and the site appears to have been abandoned at the end of the EP period (S. Lekson, personal communication 2005; Stuart and Gauthier 1984). The location of the structures, side by side as opposed to one superimposed upon the other, could support the idea that they were contemporary.

Ultimately, however, location data from Woodrow are inconclusive in terms of revealing evidence for population aggregation or social integration during the EP period.

The EP period site of Wind Mountain consists of three roomblocks (Woosley and McIntyre 1996). Five communal structures at Wind Mountain date to the EP period (Woosley and McIntyre 1996). As was the case during the MPS and LPS periods, the residents of Wind Mountain may have experienced population aggregation and used multiple communal structures during the EP period. The five Wind Mountain communal structures include Room 3 (A.D. 1000 to 1150), Room 7 (A.D. 1040 to 1130), Room 15 (A.D. 1030 to 1150), House V (A.D. 970 to 1050), and P2 (A.D. 1100+/-) (Woosley and McIntyre 1996). The structures range in size, but are all relatively small (15 to 38 m^2) and are scattered throughout the site (Woosley and McIntyre 1996).

Although I refer to the Wind Mountain communal structures as "scattered throughout the site," in the frequency section, all of the EP structures are associated with particular roomblocks at the site. However, there are five communal structures associated with three roomblocks, which means that some roomblocks have more than one communal structure. Ceramic and construction dates as well as location data from the Wind Mountain communal structures provide evidence that for population aggregation at the site (Woosley and McIntyre 1996). However, although the date ranges overlap, they do not provide definitive evidence to suggest that all five structures were coeval.

Communal structure location indicates that social integration continued to be important in many areas of the Mogollon region. However, at some sites (e.g., NAN) population aggregation appears to have been an issue as well. Earlier integration may have been replaced by population aggregation at some sites during the EP period (e.g., NAN). The number of sites with location data, which provide evidence for integration, decreases slightly during the EP period (exact counts and percentages will be provided at the end of this section). This reflects an increase in the number of sites with location data providing evidence for population aggregation during this period as well. There is certainly more variation in communal structure location at this time, a characteristic that appears to continue into the Late Pueblo periods.

Late Pueblo Period (A.D. 1150 to 1450). Location data were available for 29 ELP and LLP period communal structures from 18 sites (Tables 5.21 and 5.22, Figures 5.25 and 5.26). Ten of these structures occupy prominent locations at Mogollon sites. Sixteen of the LP period communal structures are associated with a particular roomblock, one is spatially separated from other structures at the site, and LA 3274's communal structure is truly isolated. The decrease in the number of isolated and/or spatially separate communal structures marks a change from earlier periods, when these locations were relatively common. However, prominently located structures, particularly those found within plazas at LP period sites, provide support for social integration in these communities. However, location data for LP period communal structures also provide support for population aggregation, although perhaps more so during the early part of the period than later.

Table 5.21. Communal Structure Location during the ELP Period.
P = prominent location; S = spatially separated;
A = associated with a particular area of the site; I = isolated.

Site Number	Site Name	Room Designation	Location
LA 2949	Apache Creek	Great Kiva	P
LA 4026	Goesling Ranch		P
LA 8682	Higgins Flat	Kiva 1	P
LA 8682	Higgins Flat	Great Kiva	P
LA 467	Hulbert		P
LA 2112	Smokey Bear/Block Lookout	Feature 4	P
AZ W:9:123	Turkey Creek	Great Kiva	P
LA 1119	Small House North of Arroyo Seco		S
AZ P:14:24	Chodistaas	Room 2a	A
AZ P:14:24	Chodistaas	Room 18a	A
LA 68188	Fox Place		A
LA 4913	Gila Cliff Dwellings	Room 17	A
LA 4913	Gila Cliff Dwellings	Room 27	A
AZ P:14:8	Grasshopper Spring	Room 7/Protokiva	A
LA 8682	Higgins Flat	Kiva 2	A
W:10:51		Pithouse 13	A
LA 8891	Schoolhouse Canyon	Kiva	A
AZ W:9:123	Turkey Creek	Room 152-K1	A
AZ W:9:123	Turkey Creek	Room 251-K3	A
AZ W:9:123	Turkey Creek	Room 237-K2	A
W:10:65		Kiva 2	A
W:10:65		Kiva 1	A
LA 3274			I

Table 5.22. Communal Structure Location during the LLP Period.
P = prominent location; S = spatially separated;
A = associated with a particular area of the site; I = isolated.

Site Number	Site Name	Room Designation	Location
LA 8780	Grasshopper	Great Kiva	P
W:10:50	Point of Pines	Kiva 1	P
W:10:50	Point of Pines	Kiva 2	P
LA 8780	Grasshopper	Room 341	A
LA 8780	Grasshopper	Room 246	A
LA 5793	Ormand	Room 79	A

Early Late Pueblo Period (A.D. 1150 to 1300). Eight ELP period communal structures were constructed in prominent locations at the sites they occupy (Table 5.21 and Figure 5.25). Thirteen of the ELP period structures, a majority, are attached to roomblocks or associated with particular areas of the site. At LA 3274, there is a truly isolated communal structure (Martin et al. 1957; Wendorf 1954) and at the Small House North of Arroyo Seco, the communal structure is spatially separated from the rest of the site's architecture (Nelson 1993a, b). Several ELP period sites have one prominently located ELP period communal structure (e.g., Apache Creek, Goesling Ranch, Hulbert, W:10:51, and Smokey Bear). These structures provide evidence for social integration. Schoolhouse Canyon, Grasshopper Spring, and Fox Place are interesting because they all have only one communal structure and it is associated with a particular area of the site.

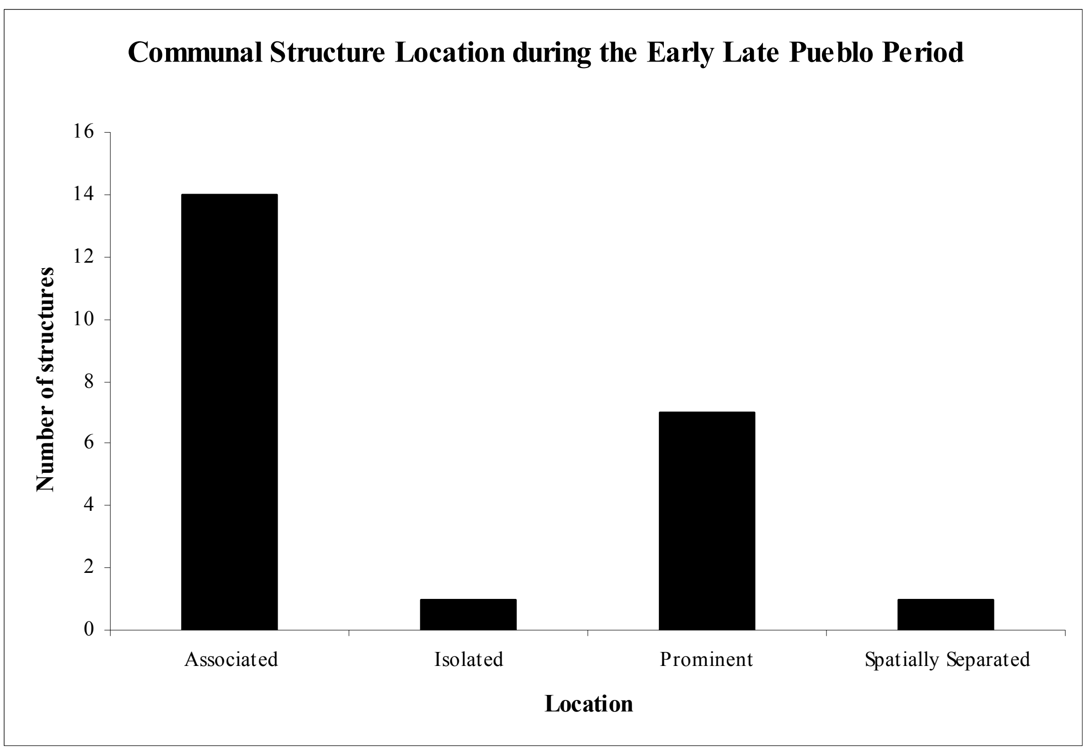


Figure 5.25. Communal Structure Location during the ELP Period.

The Schoolhouse Canyon site in eastern Arizona consisted of 15 to 20 rooms and one relatively small, but decorated, associated communal structure (Laboratory of Anthropology site files, Santa Fe, New Mexico). The communal structure was not built when the roomblock was, but was constructed during the last part of the site's occupation. It is possible that the site's inhabitants constructed their communal structure in an effort to facilitate community integration, as was the case at Pot Creek pueblo as discussed in Chapter 2. While the Kiva is associated, it reflects integration because it is associated with the only roomblock at the site. A similar situation occurred at Grasshopper Spring. Grasshopper Spring, situated in southern Arizona, also has a communal structure associated with its only roomblock, again providing evidence for integration at the site. Fox Place, a site situated in the Jornada area of the Mogollon region is interesting in that it consists of 10 pit structures and a single communal structure (Wiseman 1992:178). The communal structure is not in a prominent location among the pit structures, but appears to be associated with one area of the site. It is unclear why the structure is situated where it is, but given the size of the community, it is likely that this structure reflects integration rather than aggregation. Chodistaas, the Gila Cliff Dwellings, W:10:65, Turkey Creek, Higgins Flat, and Point of Pines have multiple communal structures that date to this period.

Chodistaas, the Gila Cliff Dwellings, and W:10:65 each have two communal structures associated with a particular area of the site, and provide evidence for population aggregation during the ELP period. Chodistaas, an 18-room pueblo located in eastern Arizona, has two ELP period communal structures associated with specific areas of the site (Lowell 1999). Room 2a is located in the northern portion of the site and Room 18a is situated within a walled plaza in the southern part of the site. Lowell (1999) provides tree ring cutting dates for the two structures and states that at this 18-room pueblo the two communal structures were used simultaneously. At Chodistaas, it appears that aggregation was the primary organizational strategy, as no centrally located or separate communal structure has been identified at the site. The same is true of the two communal structures found at the Gila Cliff Dwellings in southern New Mexico.

At the Gila Cliff Dwellings, a 30-40-room pueblo located along the Gila River in southern New Mexico, there are two contemporary communal structures (Anderson et al. 1986; Gadd 1993). Anderson et al. (1986) have suggested that the site was occupied for a relatively short time, from A.D. 1270 to 1290. Room 17 (A.D. 1287v) is situated on the eastern side of cave 3 and Room 27 (A.D. 1270 to 1290) is on the eastern side of Cave 5. Construction and cutting and non-cutting dates suggest that this site was occupied for a single generation (Anderson et al. 1986). For this reason, researchers state that the two communal structures were contemporary. Rooms 17 and 27 provide evidence for some degree of population aggregation at this ELP period site.

W:10:65 is a 40-room ELP period pueblo site located in the Point of Pines region of eastern Arizona. At the site, there are two small communal structures dating between A.D. 1150 and 1265, each of which is associated with a particular roomblock (Olsen 1959; Stone 2001). It is difficult to evaluate whether they were used at the same time or not because of the lack of absolute dates. As a result, while location data do suggest that aggregation occurred at the site, chronometric data for the structures are inconclusive.

Turkey Creek pueblo provides another example of possible ELP period population aggregation. Location data were available for four Turkey Creek communal structures, the Great Kiva and Rooms 152-K1, 237-K2, and 251-K3 (Lowell 1991). The Great Kiva is prominently located in the center of the community, while the other three are relatively small and are associated with roomblocks at the site. Given the size of the site, 335 rooms, it is not surprising that there are several communal structures and plazas distributed throughout the site (Lowell 1991). Dates for the site suggest that is was occupied for approximately 60 years (Lowell 1991). The Great Kiva was the first communal structure erected at the site and likely promoted social integration within this large expanding community. Rooms 152-K1 and 237-K2 were also built relatively early and were eventually covered by subsequent dwellings. Room 251-K3 appears to have built after the other three communal structures, but was used simultaneously with the Great Kiva. The presence of multiple communal structures reflects population aggregation and social integration within the community.

At Higgins Flat, there are two prominently located communal structures and one associated structure. The large centrally located Great Kiva was built atop the smaller Kiva 1. The structure is in the middle of the site’s two roomblocks. It appears that the community replaced this smaller communal structure with a larger one. Kiva 2, which is attached (associated) with one of the site’s two roomblocks, is coeval with Kiva 1. Interestingly, Kiva 2 appears to have been attached to the Great Kiva after it was built. At this site, although multiple communal structures date to the period, social integration appears to have been emphasized during the latter part of the ELP period.

During the ELP period, the percent of sites with evidence for integration increases slightly from the EP period (percentages and exact counts are provided at the end of this section). Location data from ELP period sites provides evidence that while a majority of Mogollon communities emphasized social integration, aggregation continued to be an issue at many sites within the region.

Late Late Pueblo Period (A.D. 1300 to 1450). Location data were available for five LLP period communal structures from three sites (Table 5.22 and Figure 5.26). The sample size for the LLP period is quite small. Half of the structures that date to this period were associated with a particular part of the site while the other half are located in prominent locations at their sites.

Location data are available for only one of the Ormand communal structures. This communal structure is associated with one of the sites four roomblocks and can be

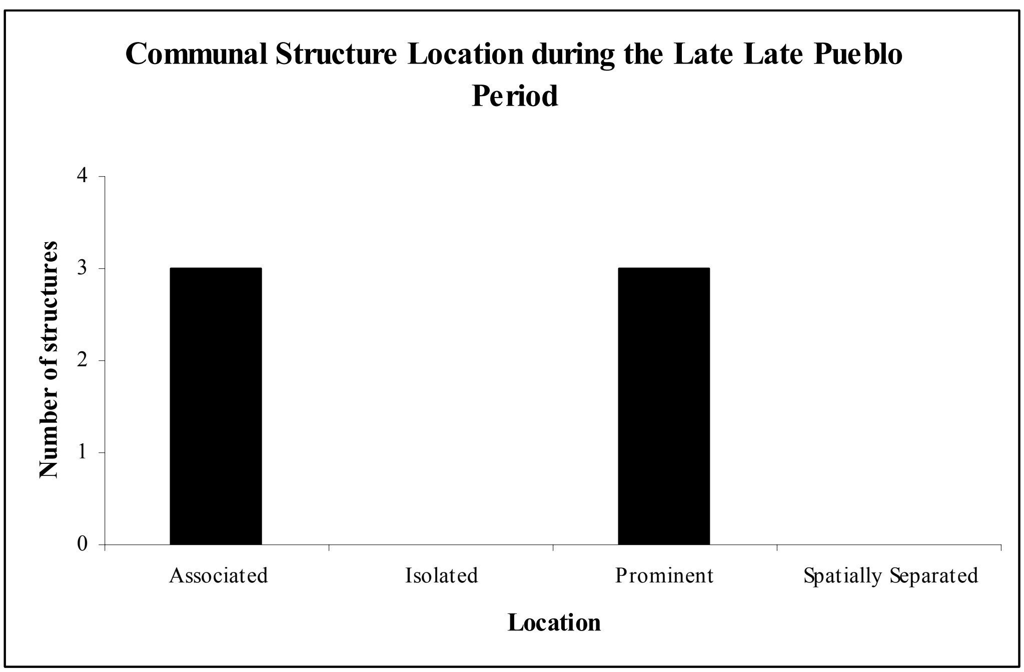


Figure 5.26. Communal Structure Location during the LLP Period.

used to suggest that aggregation may have occurred at this site. At the LLP period Point of Pines site, there are two prominently located communal structures.

The two prominently located communal structures at Point of Pines are Kivas 1 and 2 (Gerald 1957; Stone 2001). The two communal structures are situated at the center of the 800-room site situated in eastern Arizona site (Gerald 1957). Both structures are very large (i.e., greater than 200 m^2). Kiva 1 was the first one constructed at the site. Kiva 1 was remodeled into a larger, but still prominently located Kiva 2 (Gerald 1957; Stone 2001). Because both of these structures occupy the same space, they are not contemporary and therefore reflect social integration at Point of Pines during the LLP period.

At Grasshopper pueblo, there are three LLP period communal structures, there is one very large Great Kiva situated prominently within the central plaza at the site suggesting that integration was important even within an aggregated community (Reid 1973, 1989; Riggs 2001). Two of the communal structures, Rooms 246 and 341 are associated with specific roomblocks. Construction data from the site can be used to suggest that as roomblocks were added to the site, communal structures, 246 and 341, associated with roomblocks 3 and 7 were also built. After 50 years of site occupation and after the two smaller communal structures were built, the Great Kiva was constructed within an enclosed plaza at the center of the site (Reid and Montgomery 1999; Riggs 2001). Location data combined with the construction information provide evidence for early population aggregation followed by an emphasis on integration, which appears to have lasted until the abandonment of Grasshopper pueblo.

Location data for LLP period communal structures is relatively limited. These data were available for only three LLP period sites. However even with a small sample size, these data provide evidence to suggest that both population aggregation and integration were present at LLP period sites, but that at a majority of sites integration was the preference by the end of the LP period.

Communal Structure Location: A Summary

The general pattern of location data compliments that of frequency in terms of aggregation and integration (Tables 5.23 and 5.24). To understand the relationship between location data and aggregation and integration it is important to understand what each location means in terms of these issues. A single isolated, prominent, or spatially separate communal structure is indicative of an integrated site. A single associated structure that is attached to the only roomblock at a site is also indicative of an integrated site. Multiple attached contemporary communal structures at a site are indicative of aggregated community. Location data reveal patterns of integration and aggregation from the Pit Structure periods to the Pueblo periods.

Table 5.23. Number of Sites with Evidence for Aggregation and/or Integration based on Location Data.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient data	Total
EPS	1 (11%)	7 (78%)	0	0	1 (11%)	100%
MPS	1 (17%)	5 (83%)	0	0	0	100%
LPS	2 (20%)	7 (70%)	1 (10%)	0	0	100%
EP	6 (21%)	17 (61%)	0	1 (4%)	4 (14%)	100%
ELP	3 (20%)	9 (60%)	1 (7%)	0	2 (13%)	100%
LLP	0	1 (33%)	1 (33%)	0	1 (33%)	100%

Table 5.24. Sites with Evidence for Aggregation and/or Integration based on Location Data.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient data
EPS	(1) Galaz	(7) Bluff, Mogollon, Winn Canyon, Harris, Old Town, Bear, McAnally			(1) Crooked Ridge
MPS	(1) Wind Mountain	(5) Harris, Black's Bluff, Mogollon, Gallita Springs, Old Town			
LPS	(2) Lee, Wind Mountain	(7) Nantack, Old Town, Harris, Cooney Ranch #1, WS Ranch, Bradsby, Galaz	(1) NAN		
EP	(6) Dinwiddie, NAN, Treasure Hill, West Fork, Mattocks, Wind Mountain	(17) Black's Bluff, Jennie Riley Stallworth, Rock House, Tla Kii, TJ, Ojo Caliente G, Diablo, Dry Prong, Elk Ridge, Gatton's Park, LA 3272, Wheaton Smith, Redrock, LA 14883, LA 18753, LA 66686, LA 6079		(1) Galaz	(4) Carter Ranch, Woodrow, Graveyard Point, Pine Creek
ELP	(3) Chodistaas, Gila Cliff Dwellings, Turkey Creek	(9) Apache Creek, Fox Place, Goesling Ranch, Grasshopper Springs, Hulbert, Schoolhouse Canyon, Small House North of Arroyo Seco, Smokey Bear, LA 3274	(1) Higgins Flat		(2) W:10:65, W:10:51
LLP		(1) Point of Pines	(1) Grasshopper		(1)Ormand

In general, there are fewer location data than frequency data available for communal structures in the Appendix II database. However, these data do provide information concerning patterns of population aggregation and social integration. During the EPS period, structures are most commonly prominently located within their pit structure communities, and 78 percent of the sites had evidence for social integration during this period (Tables 5.23 and 5.24). The Galaz site dates to the EPS period and its communal structure may provide evidence for aggregation as it is associated with a particular part of this 150-room pit structure community. The "associated" communal structure at McAnally provides evidence for integration as it is associated with a very small 12 pit structure community.

Location data for the MPS period also remains consistent with frequency data presented in the previous section, with 83 percent of sites providing evidence for social integration. Wind Mountain is the only MPS period site with evidence for population aggregation. During the LPS period, location data are reflects a slight change in patterns of aggregation and integration. Two LPS period sites, Lee and Wind Mountain, have evidence for aggregation and NAN has evidence for initial integration replaced by aggregation at the site. Several LPS period communal structures are associated with specific areas of sites. In general, however, Pit Structure period location data support the idea that social integration was the primary focus at a vast majority of Mogollon sites (Tables 5.23 and 5.24).

During the EP period, there are data that can be used to suggest that population aggregation, which began during the LPS period (when the percent of sites with location data suggesting aggregation is 20 percent), has a more visible impact on site architecture. An increasing number of EP period communal structures are associated with specific areas of Mogollon sites (Tables 5.23 and 5.24). There is a great deal more diversity in communal structure location during the EP period and the number of sites with evidence for population aggregation is 21 percent. The location of ELP period communal structures varies in ways similar to that seen during the EP period, with a majority of communal structures associated with particular areas within sites.

The percent of ELP period sites with evidence for aggregation during this period is 20 percent (Table 5.23). However, during the LLP period, at sites (e.g., Grasshopper) that have multiple communal structures, there is also a prominently located communal structure constructed at the site at some point of its occupation. Therefore, even at LLP period sites where population aggregation occurs, social integration continues to be reinforced. Location data are only available for three LLP period sites, one of which had inconclusive chronometric data so could not provide support for either aggregation or integration. In general, location data for Mogollon communal structures provide more evidence for population aggregation than did frequency data, which will be discussed in Chapter 6.

Communal Structure Size

The size of a communal structure is an important aspect of this research, but it is complicated by some of the same factors associated with the frequency and location data. Specifically, determining structure contemporaneity can be difficult and some of the communal structure sizes provided in site reports are estimates based on limited testing, sampling, or survey. The primary importance of this category in measuring population aggregation and social integration is that a small structure will only provide room for a limited number of people, while a larger one provides access for larger groups of people. Therefore, sites with smaller contemporary communal structures will suggest more aggregation, while those with larger structures support more social integration. Size information was available for 186 of the structures in the Appendix II database. Specific dates were available for 164 of those 186 structures, which, in some cases, allowed me to determine the contemporaneity of structures dating to the same periods. These 164 structures are used in the analysis presented in this section.

Communal structure sizes range from very small, 4.7 m^2, to quite large, 287.6 m^2, with an average size of 54.7 m^2 and a standard deviation for the assemblage is 60.2 m^2. In general, the presence of larger communal structures appears to be relatively consistent across time (Appendix II). The presence of smaller structures is less consistent, although they are present during both the Pit Structure and Pueblo periods (Appendix II). Average communal structure size varies quite a bit during the Pit Structure period; there is a decrease in average size from the EPS to the MPS period and then an increase from the MPS to the LPS. Average size increases again between the LPS and EP periods (Figure 5.27). There is a decrease in average communal structure size from the EP period to the LP period (Figure 5.27). However, when the LP period is separated into ELP and LLP periods, the difference between the EP and ELP periods is even more marked (Figure 5.28). There is a sharp decline in the average size of communal structures between the EP period and the ELP period (Figure 5.27). Communal structure size increases to its highest level during the LLP period to 80.4 m^2. This increase has some interesting implications concerning aggregation and integration in the Mogollon region during the LP period. While there are visible trends in average communal structure size (Figure 5.29), in general, unpaired *t*-tests and an ANOVA (p = 0.253) were not able to contradict the null hypothesis (Table 5.25). The only period for which size differences were statistically significant is from the ELP to the LLP period. A detailed analysis of communal structure size during all of the periods discussed here is presented below.

Table 5.25. Results from Unpaired *t*-Test.

Periods Compared	Standard Deviation	*p* value
EPS to MPS	21.8	.055
MPS to LPS	45.9	.354
LPS to EP	73.1	.777
EP to LP	1.01	.207
EP to ELP	70.9	.078
ELP to LLP	57.4	.032

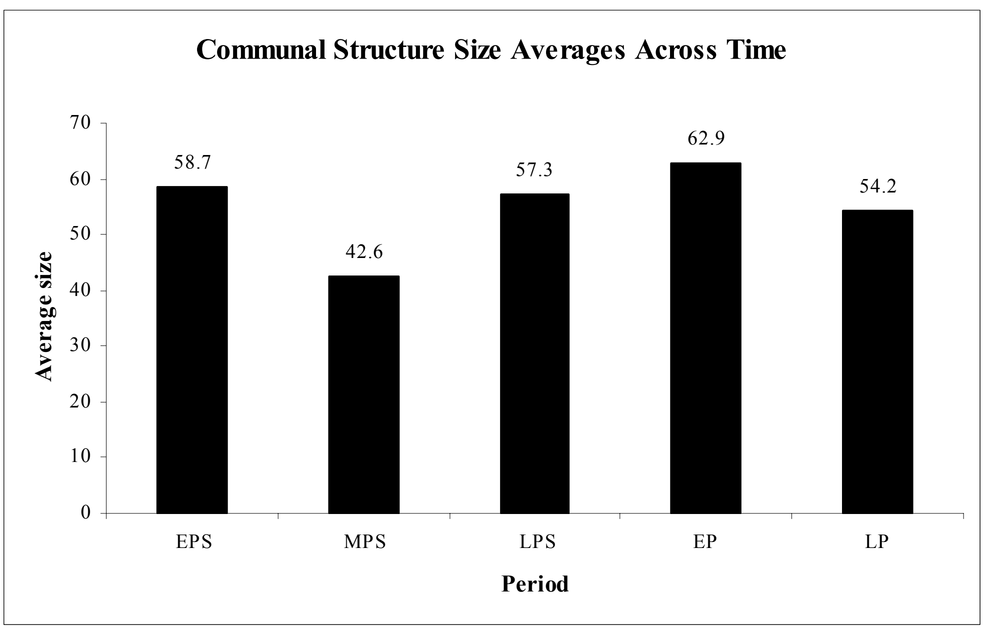


Figure 5.27. Average Size (m^2) of Communal Structures by Period.

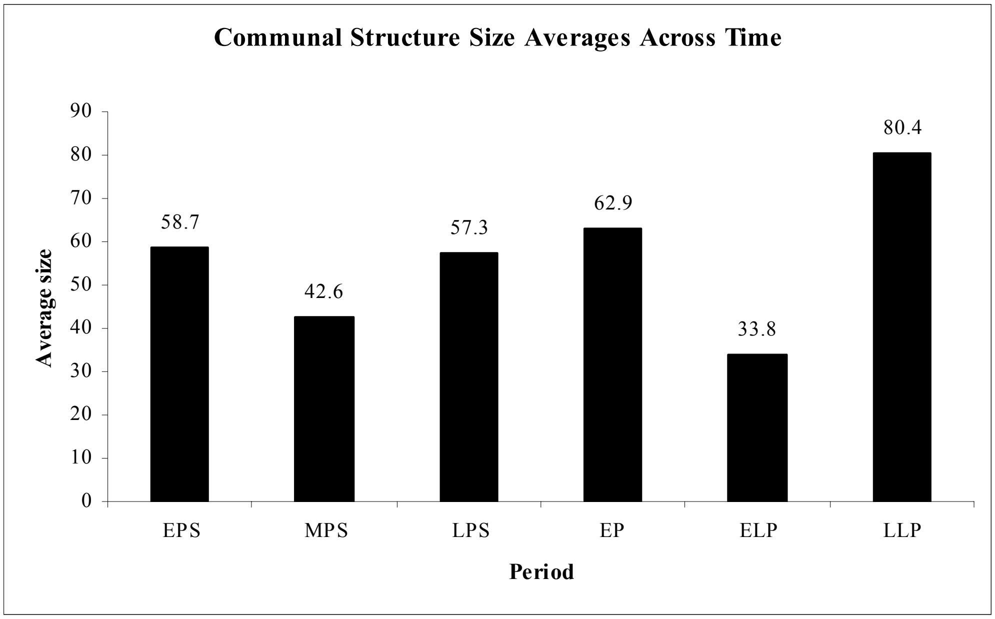


Figure 5.28. Average Communal Structure Size (m^2) with the LP Period Separated into ELP and LLP Periods.

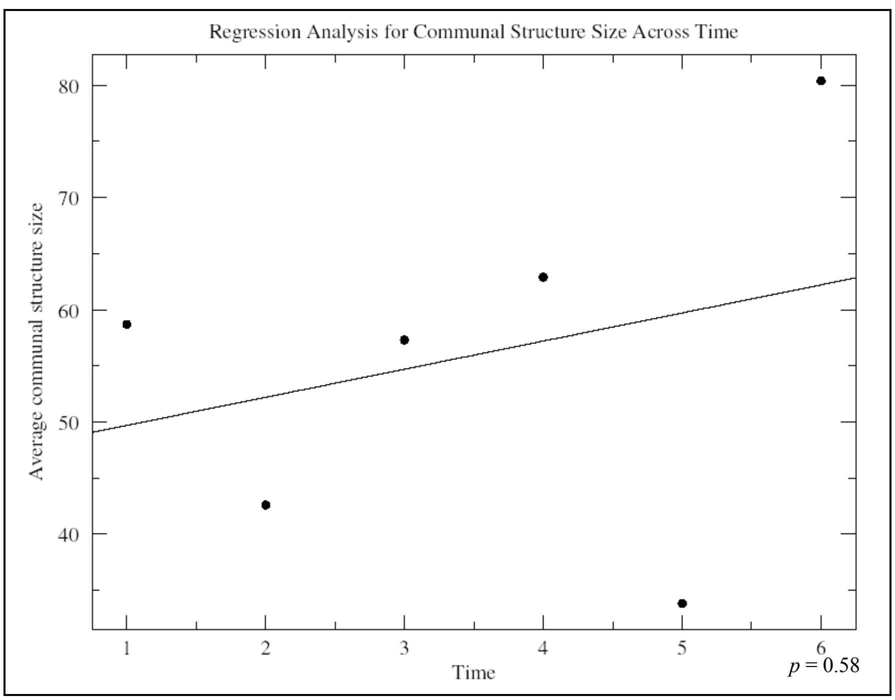


Figure 5.29. Regression Chart Depicting Average Communal Structure Size (in m^2) Across Time, with 1 Representing the EPS Period and 6 Representing the LLP Period.

Pit Structure Period

The analysis of the location data provided evidence that can be used to suggest that during the Pit Structure period many sites have large communal structures that appear to be serving as integrating mechanisms for large dispersed communities. However, there are changes in the average sizes of these structures from the EPS to the MPS to the LPS period although they are not statistically significant changes (Table 5.25 and Figure 5.33). There is an interesting change in communal structure size that occurs during the MPS period, which is explored below.

Early Pit Structure Period (A.D. 250 to 700). Size data were available for 22 EPS period communal structures from 18 sites (Appendix II; Table 5.26). During the EPS period, the average communal structure size is approximately 59 m^2 (Figure 5.27). No very small communal structures (i.e., smaller than 20 m^2) date to the EPS period, and the smallest one is approximately 24 m^2. Some EPS sites have very large structures, like the 112 m^2 structure at Crooked Ridge village and the 85 m^2 SU site communal structure. While communal structure size does vary during the EPS period, size data provide information about aggregation and integration in Mogollon communities dating to this period.

Table 5.26. Communal Structure Size during the EPS Period.

Site Number	Site Name	Structure Number	Size (m^2)
LA 12110	McAnally	Unit 11	23.8
LA 6538	Diablo	Feature 5	31.9
	Lagoon		35.3
LA 127260	Ridout Locus	House F	35.8
LA 6538	Diablo	Feature 14	36.3
LA 635	Galaz	Unit 8	37
LA 1113	Old Town	A67	39

Table 5.26 continued.

Site Number	Site Name	Structure Number	Size (m^2)
LA 19075			40.3
LA 32536	Cuchillo	1	41
LA 1867	Harris	House 14	44
LA 53	Three Circle	Room 19	53.2
LA 53	Three Circle	2A	57.2
LA 5421	Saige-McFarland	Pithouse 1/Great Kiva	57.7
LA 34813	Winn Canyon	Room 2/Kiva	63.5
LA 64931	SU	House V	78.5
W:10:15	Crooked Ridge	Pithouse 9	82
LA 11568	Mogollon	House 5A	82.5
LA 103907	Bluff	House 5	83
LA 64931	SU	Pithouse A	84.9
AZ P:16:1	Bear ruin	Kiva No. 1	86
LA 9713	Promotory	House B	86
W:10:15	Crooked Ridge	Structure 19	111.6

Most EPS period sites have one communal structure, the majority of which are the largest pit structures at the sites (Table 5.26). These size data when combined with chronometric and location data suggest that social integration was the norm at the majority of EPS period sites. At the same time however, four EPS period sites, Diablo, Crooked Ridge, SU, and Three Circle, have two communal structures, frequently of comparable size.

Diablo village has two relatively small EPS period communal structures, although both are larger than the other pit structures identified at the site (Anyon and LeBlanc 1980; Creel and Anyon 2003; Dycus 1997; Hammack 1966; Linse 1999a, 1999b). Situated along the upper Gila River drainage in New Mexico, the site has two EPS period communal structures, Features 5 and 14 (Anyon and LeBlanc 1980; Dycus 1997). Ceramic dates for Feature 5 range from A.D. 400 to 650 and Feature 14 dates from A.D.

550 to 650. Dycus' (1997) analysis of architectural evidence from the site provides a construction history for the site, which shows that Feature 14 was constructed before Feature 5. The history has been used to suggest that Feature 14 was abandoned when Feature 5 was built and that the two were not contemporary (Dycus 1997). Size data for the two features are interesting in that Feature 5 is 32 m^2 and Feature 14 is 36 m^2, which means that the residents of Diablo village abandoned a larger structure in favor of a slightly smaller one. Despite the size differences, if the construction history provided by Dycus (1997) is reliable, Diablo is an example of EPS period integration.

At Crooked Ridge, the smaller structure appears to have been replaced by the larger one after some period of site occupation (Wheat 1955). A smaller structure, Pithouse 9 (82 m^2), was later replaced by the larger structure 119 (112 m^2). At this site, it appears that social integration was promoted throughout the EPS period and that at some point the people living at Crooked Ridge needed a larger structure to facilitate this goal.

The SU site, situated in the Reserve area of southwestern New Mexico, has two EPS period communal structures (Cordell 1997:222; Martin and Rinaldo 1947; Wills 1991). House V and Pithouse A have been identified as EPS period communal structures. The ranges of dates for the two structures do not overlap, as is the case for the other EPS period sites that have two communal structures. Pithouse A has a radiocarbon date range of A.D. 460 to 497 (Laboratory of Anthropology site files, Santa Fe, New Mexico), and researchers (Martin and Rinaldo 1947; Wheat 1955) estimate that House V was constructed and used between A.D. 550 and 750. Pithouse A predates House V and as was the case at Diablo village, at the SU site, the earlier structure is slightly larger than the later one. Pithouse A is 85 m^2, while House V is 75 m^2 (Martin and Rinaldo 1947; Wheat 1955). The two EPS period communal structures at SU appear to have been used sequentially, rather than simultaneously, thus providing evidence for EPS period integration.

The Three Circle site is situated in the northern Mimbres River valley in southwestern New Mexico and has two EPS period communal structures (Bradfield 1927-1928; Creel and Anyon 2003). Rooms 2A (57 m^2) and 19 (53 m^2) both have ceramic dates of A.D. 550 to 750 and are approximately the same size, although 2A is the largest of the 24 pit structures at the site. Researchers (Bradfield 1927-1928; Creel and Anyon 2003:73) have suggested that Room 19 was used from the EPS period into the MPS period, while 2A was abandoned and burned at the end of the EPS period. This may help to explain the presence of the two structures at the site in that 19 likely replaced the destroyed 2A. However, the two were both used until the end of the EPS period, suggesting that some degree of population aggregation occurred.

Size data, in conjunction with frequency data, suggest that at all but one EPS period sites social integration occurred. The average communal structure size of 59 m^2 during this period indicates that single large communal structures were in place at almost all sites during this pit structure period. By providing only one communal structure for a community, participation and hence integration is emphasized.

Middle Pit Structure Period (A.D. 700 to 850). During the MPS period, the average communal structure size decreases to about 43 m^2. Size data were available for 11 MPS period structures from eight sites (Table 5.27). While MPS communal structure sizes range from 20 to 71 m^2, similar to the range seen during the EPS period, although without the largest EPS sizes, no very large or very small structures are present in the MPS period sample (Table 5.27). Based on the size and frequency data for MPS period sites, it appears that at this time in many areas of the Mogollon region, some degree of population aggregation began to occur. Six MPS sites, a majority, have only one communal structure, but, the Harris (Anyon and LeBlanc 1980; Diehl and LeBlanc 2001) site has two MPS period communal structures each. There are three communal structures dating to the MPS period at the Wind Mountain site (Woosley and McIntyre 1996).

Table 5.27. Communal Structure Size during the MPS Period.

Site Number	Site Name	Structure Number	Size (m^2)
LA 6083	Gallita Springs	Feature 40	20
LA 127260	Wind Mountain	House O	28.2
LA 127260	Wind Mountain	House AK	29.9
	Turquoise Ridge	Structure 35	30
LA 34787	Black's Bluff	Pit House 1	37.1
LA 127260	Wind Mountain	House AB	40.5
LA 1867	Harris	House 23	45.5
LA 1113	Old Town	A71	52
LA 11568	Mogollon	House 3	55.4
LA 9709	Turkey Foot Ridge	Pithouse K	59.2
LA 1867	Harris	8	70.9

At the Mimbres valley Harris site, there are two MPS period communal structures including the large 71 m^2 structure 8 and the smaller 46 m^2 House 23 (Creel and Anyon 2003; Haury 1936; Haury and Sayles 1947). A ceramic of A.D. 650 to 750 is available for structure 8, and House 23 has a tree-ring cutting date of A.D. 838v (Creel and Anyon 2003). These dates provide evidence that, although the two Harris communal structures date to the MPS period, they were probably not contemporary. The residents of this site appear to have replaced their larger structure with the smaller House 23. It is unclear why the community chose to build a smaller communal structure, but the size data for these structures provide more support for integration than aggregation during the MPS period.

Size data were available for three structures from Wind Mountain situated in southwestern New Mexico (Woosley and McIntyre 1996). The sizes of the structures range from 28 to 41 m^2, and no very large structure dates to the MPS period at Wind Mountain. Whether or not these three structures were contemporary speaks directly to issues of aggregation and integration. According to archaeomagnetic dates, the oval House AB, the largest of the three Wind Mountain communal structures, was built and used between A.D. 620 and 730. The square House AK produced archaeomagnetic dates ranging from A.D. 640 and 780 and ceramic dates for the circular House O range from A.D. 650 and 750 (Woosley and McIntyre 1996). The three structures are different shapes and are randomly spaced among the 50 pit structures at the site (Woosley and McIntyre 1996). Architectural, archaeomagnetic, and construction data from the Wind Mountain suggest that the three communal structures were contemporary (Woosley and McIntyre 1996). Variation in size data from the site provides evidence for some degree of population aggregation during the MPS period. The relatively small communal structures identified at the site also provide evidence that large central meeting places were not present during the LPS period, also suggesting aggregation.

During the MPS period, communal structure size decreases from the EPS period from an average size of 58 m^2 to only 43 m^2. At the same time, there is only one site, Wind Mountain, with evidence for increasing aggregation during the MPS period. The fact that communal structure size decreases in the absence of data for increasing aggregation is interesting because it may imply that in fact communities placed an increasing emphasis on integration during this period. By reducing the numbers of people who could participate in communal activities, the community could reinforce the importance of group membership. Size data for both EPS and MPS period communal structures indicate relative stability in social integration.

Late Pit Structure Period (A.D. 850 to 1000). Large communal structures initially associated with the EPS period reappear in many areas of the Mogollon region during the LPS period. At the same time, there are many small structures dating to this period. In general, there is a great deal more communal structure size variation during the LPS period than during previous periods (Table 5.28). Some LPS period structures are relatively small (e.g., structures 21 and 22, both 12 m^2, from Lee village), while others are very large, including the 232 m^2 communal structure excavated in southern New Mexico at LA 3274 (Martin et al. 1957). Average size for the 38 LPS period communal structures (Table 5.27), for which size data were available, is approximately 57 m^2, larger than during the MPS period, but similar to that calculated for the EPS period. Variation in communal structure size may provide evidence for population aggregation in many areas during this period. Interestingly, in some cases, large to very large communal structures are found at LPS period sites (e.g., LA 3274 and Harris village).

Table 5.28. **Communal Structure Size during the LPS Period.**

Site Number	Site Name	Structure Number	Size (m^2)
LA 6000	Lee	21	12
LA 6000	Lee	23	12
LA 64931	SU	Pithouse Y	12.5
LA 190	Cameron Creek	105	13.3
LA 190	Cameron Creek	127	13.7
LA 6083	Gallita Springs	Feature 38	16
LA 6000	Lee	20	16
LA 78337	Bradsby	1	16.2
LA 6000	Lee	18	18
LA 190	Cameron Creek	112	18.1
LA 6000	Lee	19	19
LA 2465	NAN	91	20
LA 6000	Lee	22	22
LA 39261			25
LA 1691/LA 15002	Swarts	Room 2	27.5
LA 127260	Wind Mountain	House XX	28
LA 127260	Wind Mountain	House Y	29.8
LA 190	Cameron Creek	119	35.3
LA 127260	Wind Mountain	House U	36.9
LA 3099	WS Ranch/McKeen	Kiva C	39.7
LA 2465	NAN	52	43.2
LA 2465	NAN	43	58
LA 71877	Lake Roberts Vista	Great Kiva	60
AZ W:10:111	Nantack	Pithouse 10	60
LA 18888	Beauregard	Structure 1	64
LA 5841	Cooney Ranch #1	Communal Structure 1	64
LA 127260	Wind Mountain	House X	70.5
LA 9657	Sawmill/Fox Farm	Kiva	75.6
LA 1691/LA 15002	Swarts	Room W	76
LA 1113	Old Town	A16	78
LA 190	Cameron Creek	Kiva	85.3
LA 38624	Starkweather	Pithouse B	99
LA 4424	Wheatley Ridge	House 7	100.4
LA 1691/LA 15002	Swarts	Room AE	109.4
LA 1867	Harris	House 10	143
AZ W:10:111	Nantack	Great Kiva 1	152.8
LA 635	Galaz	42A	175.3
LA 3274		Great Kiva	232.2

The communal structure found at LA 3274 is very large, 232 m^2, and associated with a very small community (Martin et al 1957). The LPS period site consists of 33 structures and the very large Great Kiva, which has a storage room and a long ramp entryway. The LA 3274 communal structure provides evidence for a LPS period community that emphasized social integration (Martin et al. 1957). Given the discrepancy between the size of the Great Kiva and the size of the community, it is also possible that the large structure served as a meeting place for multiple communities. At the same time, it is possible that the people in this community chose to build a large communal structure, just as people today construct elaborate churches for religious and ritual reasons. Regardless of who was being integrated, the Great Kiva at LA 3274 provides evidence for social integration during the LPS period.

Old Town (Creel 1998, 1999a), Harris, Galaz (Anyon and LeBlanc 1984), and Wheatley Ridge (Laboratory of Anthropology site files, Santa Fe, New Mexico) sites all have a single relatively large (i.e., at least 75 m^2) communal structure (Table 5.26). At the same time some sites (e.g., SU, Gallita Springs, and Bradsby) have one rather small (i.e., less than 20 m^2) communal structure at their sites during the LPS period. These size variations were not present to the same degree during either of the previous periods and provide evidence for diversity in integration during the LPS period. At some sites, large structures are used to integrate people, while at others rather small structures are constructed. As previously stated, the very small structures may not be communal structures at all (Gilman 2006; Lekson 1989), but that does not erase the fact that at least the large structures evidence social integration during the LPS period. Communal structure size data from the LPS period also provide some evidence for population aggregation during this period.

Six LPS period sites have more than one communal structure (Table 5.26). Nantack (Breternitz 1959) has two LPS period communal structures, the Mimbres valley sites of NAN (Shafer 2003) and Swarts (Carlson 1965) have three, Wind Mountain (Woosley and McIntyre 1996) has four, Cameron Creek (Bradfield 1931) has five, and Lee village (Bussey 1972, 1975) has six communal structures. The contemporaneity of LPS period communal structures at Mogollon sites is presented below, as these data help to provide evidence for aggregation and/or integration.

Size data from the two LPS period communal structures at Nantack village, a site in eastern Arizona, provide further support for integration at the site (Breternitz 1956, 1959). Nantack consists of 21 pit structures and includes Pithouse 10, which is 60 m^2, and the Great Kiva , which is approximately 153 m^2 (Breternitz 1956, 1959). Ceramic dates for the two LPS period communal structures range from A.D. 900 to 1000. Although these dates suggest that the structures were contemporary, Breternitz (1956) examined the site's construction history and found that Pithouse 10 was constructed before Great Kiva 1. Breternitz (1956, 1959) suggests that the community initially constructed the smaller structure and later built the much larger structure, perhaps to serve a growing population (Breternitz 1956). It is also possible that Great Kiva 1 was built to facilitate visitors to the site, as the size of the structure would have been more than adequate to accommodate members of the Nantack community. Size data from

Nantack village support the idea social integration was emphasized within this LPS period community.

At NAN, a 20-30-structure LPS period village, there is evidence for three contemporary structures (Burden 2001; Shafer 1983, 1989, 1990, 2003). The dates for three LPS period communal structures, Rooms 43, 52, and 91, overlap. Archaeomagnetic dates and construction sequences suggest that communal structure 52 was one of the first structures to be constructed at the site, and it dates between A.D. 859 and 930 (Burden 2001; Shafer 1989, 1990). The early construction of Room 52 suggests that it was important to the people building the community to have a communal structure as part of their initial village plan. It is possible however, that structure 43 was built first, as a non-cutting tree-ring date of A.D. 900 is available. A ceramic date range of A.D. 900 to 1000 places structure 91 chronometrically, as does a construction history for the site that provides information about when this structure was built.

Interestingly, structure 43, which construction sequences for the site suggest may have been constructed later than structure 52, is the largest of the three NAN communal structures (Burden 2001). It is possible that the initial structure, 52, was not large enough for the community, and so the community built a larger one to accommodate a greater number of the community's members.

If the three NAN communal structures are contemporary, the size variation they display provides evidence for population aggregation in the Mimbres area during the LPS period. If the structures are not contemporary, and only one structure was used at a time, data from NAN may be evidence for social integration during the LPS. The two smaller structures, 52 (43 m^2) and 91 (20 m^2) which were associated with specific areas of the site, were burned and have dedicatory objects, suggesting that they may have been destroyed and replaced by the larger, 58 m^2 structure 43 (Burden 2001; Creel and Anyon 2003; Shafer 1989, 1990). Size data from the three LPS period NAN communal structures suggest that the site was formed via aggregation evidenced by the presence of two smaller communal structures (Shafer 2003). The aggregated NAN community became integrated at some point, as evidenced by the construction of a larger communal structure during the later part of the LPS period.

The Mimbres valley Swarts ruin consists of 40 to 60 pit structures, which includes three communal structures, Room AE, Room 2, and Room W (Cosgrove and Cosgrove 1974). A date range of A.D. 750 to 1000 was available for two of the structures and a tree-ring non-cutting date of A.D. 900vv was available for Room W (Anyon and LeBlanc 1980; Cosgrove and Cosgrove 1974). The three Swarts communal structures vary greatly in size.

Room AE is the largest of the three at 109 m^2; Room W is smaller at 76 m^2 and structure 2 is the smallest at 28 m^2 (Cosgrove and Cosgrove 1974). Construction data for the site suggest that Rooms AE and 2 were abandoned prior to the construction of Room W (Carlson 1965). All three of the Swarts structures were burned upon their abandonment, but no radiocarbon or tree-ring dates are available (Cosgrove and Cosgrove 1974). Construction sequences can be used to support the idea that structures AE and 2 were destroyed and replaced with a single communal structure, Room W (Cosgrove and Cosgrove 1974). Interestingly, Room W is smaller than structure AE, although it is still a large structure. At Swarts, size data, combined with frequency and location data, provide support for early LPS period population aggregation, which was replaced by social integration later during the period.

At the Wind Mountain site, specific dates are available for Houses U, Y, X, and XX, the site's LPS period communal structures (Woosley and McIntyre 1996). Archaeomagnetic and ceramic dates for these four structures range from A.D. 750 to 1030. The four Wind Mountain communal structures could have been built and abandoned at various times throughout this almost 300-year period. However, dates for specific structures indicate that some of the structures were contemporary. For example, the archaeomagnetic dates for the largest Wind Mountain communal structure, House X, which is 71 m^2, range from A.D. 800 to 940 (Woosley and McIntyre 1996).

Dates for House XX, which is much smaller than House X at 28 m^2, range from A.D. 778 to 1030. Ceramic dates, which range from A.D. 750 to 1000, are the only ones available for Houses U and Y (Woosley and McIntyre 1996). As a result, it is difficult to assess the contemporaneity of these two LPS period structures. Houses Y and U are relatively small and are 30 and 37 m^2, respectively. The presence of four possibly contemporary communal structures with a wide range of sizes provides evidence for a continuation of MPS period population aggregation at Wind Mountain during the LPS period. That there are three smaller communal structures and one larger one at Wind Mountain has implications for issues of aggregation at the site. The overlapping dates for the multiple Wind Mountain communal structures, which vary in size from 28 to 71 m^2, provide evidence for some degree of population aggregation at the site. It is also possible that the large House X was built to help promoter integration at an aggregated site. However, the size variation may simply reflect diversity that existed within an aggregated community.

There are five LPS period communal structures at the 40-pit structure Cameron Creek site (Bradfield 1931). The structures range in size from 13 to 85 m^2. Three of the communal structures, 105, 127, and 112, are relatively small, 13, 14, and 18 m^2 respectively, structure 119 is 35 m^2, and one, designated “Kiva,” is quite large at 85 m^2 (Anyon and LeBlanc 1980; Bradfield 1931). It is difficult to assess the contemporaneity of the Cameron Creek communal structures because such a wide range of dates is available for the site. Some researchers (Anyon and LeBlanc 1980) suggest that some of these five structures date to the LPS period, while others date to the EP period. The contemporaneity of communal structures at this site appear to indicate that population aggregation occurred to some degree. The size variation that exists at Cameron Creek is similar to that seen at Wind Mountain and while it indicates some degree of aggregation, it may establish the presence of integration at the site. The Kiva is much larger than the other communal structures at the site and could reflect community diversity or could have been used to integrate an aggregated community. In the absence of more definitive chronometric data, it is only possible to state that aggregation may have occurred at Cameron Creek.

At Lee village (Bussey 1972), there are six relatively small communal structures and all of them date to the LPS period (Bussey 1972). From smallest to largest, structures 21 and 23 are both 12 m^2, structure 20 is 16 m^2, structures 18 and 19 are 18 and

19 m^2, respectively, and structure 22 is 22 m^2 (Bussey 1972). As previously stated, using a Robinson's Index, Bussey (1972:51-53) calculated construction sequences for several of the communal structures dating to the LPS period. Based on his findings, he was able to say that structures 21, 22, and 23 predate structures 18, 19, and 20. Bussey (1975) proposed a date range of A.D. 920 to 980 for structures 21, 22, and 23 and A.D. 980 to 1050 for 18, 19, and 20.

Following Bussey (1975), at least three of the six structures at Lee village were contemporary at any one time, and it is likely that the earlier three may also have been replaced by the three almost identically sized communal structures at some point during the LPS period. It is unclear why these structures were replaced, and only one of the earlier structures, 21, showed evidence of burning (Bussey 1972). Size data, when combined with construction evidence for the six Lee village communal structures provide evidence for population aggregation during the LPS period.

Size variability during the LPS period provides evidence for population aggregation at Wind Mountain, Cameron Creek, and Lee sites, aggregation followed by integration at NAN and Swartz, and social integration at all others (e.g., Old Town, Galaz, and Nantack). There is more evidence for population aggregation during this period than during either of the previous pit structure periods. However, evidence for social integration remains prevalent during the LPS period. There is more LPS period variation in communal structure size than during either the EPS or the MPS period. Average communal structure size during the LPS period is almost identical to that of the

EPS period and is certainly affected by the very small and very large structures in the sample.

Very large communal structures (i.e., greater than 70 m^2) are much more common during the LPS period, and some sites (e.g., Galaz, Nantack, and LA 3274) have structures larger than 140 m^2. These large structures may indicate an increase in the size of LPS period communities, in that many LPS period structures are much larger than those identified during the MPS period. LPS period size variation continues into the EP period and the average communal structure size increases once again.

Pueblo Period

At the beginning of the Pueblo period, size variation continues from the LPS period. Assemblage size for the EP period is the largest of all the periods and appears to reflect population increase in many areas of the Mogollon region during this period (Anyon and LeBlanc 1980; Cordell 1997). Average communal structure size decreases to its lowest value during the beginning of the LP period only to increase during the LLP period, when communal structure sizes are, on average, the largest that they have ever been. Detailed analyses of communal structure size, by period, are included in the following sections.

The Early Pueblo Period (A.D. 1000 to 1150). Size data were available for 50 EP period communal structures from 27 sites (Table 5.29). The average size of an EP period communal structure is approximately 63 m^2, which is about five square meters larger than the LPS average (Figure 5.27). During the EP period, there is a great deal more variation in communal structure frequency and location than is seen during any of the Pit Structure periods; the same is true for communal structure size during the EP period. EP period communal structure sizes range from very small, approximately 5 m^2, to very large, 288 m^2, with a great deal of variation in-between. Unlike during the Pit Structure periods, only 12 EP period sites have one communal structure these include Diablo, Dry Prong, Elk Ridge, Ojo Caliente G, Redrock, Saige-McFarland, Sand Flat, TJ, Wheaton Smith, Yeo 194, LA 18753, and LA 66686. Eleven EP period sites including Pine Creek, Treasure Hill, West Fork, Woodrow, Rock House, Pueblo Lillie Allen, Graveyard Point, Mattocks, Galaz, Dinwiddie, and Black's Bluff have two communal structures. Tla Kii and Carter Ranch have three EP period communal structures and there are five at NAN and Wind Mountain (Table 5.29).

Table 5.29. Communal Structure Size during the EP Period.

Site Number	Site Name	Structure Number	Size (m^2)
LA 66782	Sand Flat		4.7
	Carter Ranch	Kiva 1	8.1
	Carter Ranch	Room 16	8.4
LA 127260	Wind Mountain	Room 15	9
LA 127260	Wind Mountain	Room 3	9.1
LA 5421	Saige-McFarland	Pithouse 3	9.8
LA 8675	West Fork	10	9.8
LA 6536	Graveyard Point	Feature 8	11.4
LA 1118	Rock House	Feature 8	11.6
LA 1118	Rock House	Feature 7	11.6
AZ P:16:2	Tla Kii	Kiva 2	12
LA 3639	Pine Creek	Room 1	12.7
LA 6783	Dinwiddie	Feature 14	12.8
LA 635	Galaz	Kiva 107	12.8
LA 6783	Dinwiddie	Feature 11	13.3
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Pithouse/Kiva 2	13.5
LA 676	Mattocks	Unit 410	13.8
LA 34787	Black's Bluff	Kiva 7	14

Table 5.29 continued.

LA 16241	Treasure Hill	Room 6	14.3
LA 16241	Treasure Hill	Room 8	14.6
LA 676	Mattocks	Kiva 48	14.8
LA 18753			15.2
LA 127260	Wind Mountain	House V	15.3
LA 3639	Pine Creek	Room 4	15.9
LA 8675	West Fork	6	16
LA 6538	Diablo	Feature 7	16.8
LA 6536	Graveyard Point	Feature 9	16.8
LA 2465	NAN	58	17.8
LA 127260	Wind Mountain	House P2	18.2
LA 34787	Black's Bluff	Great Kiva 13	28
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Pithouse/Kiva 1	28.4
LA 18903	Wheaton Smith	Unit 34	28.8
LA 2465	NAN	57	32.2
LA 2465	NAN	39	36
LA 127260	Wind Mountain	Room 7	37.9
LA 2465	NAN	18	38.8
LA 66686		Kiva	42
LA 2465	NAN	45	95
LA 78963	Elk Ridge	Kiva	100
LA 86310	Ojo Caliente G	Great Kiva	113
LA 2454	Woodrow		120
LA 635	Galaz	73 (Parrot Kiva)	146.8
LA 5412	Redrock		189.4
W:6:5	Dry Prong	Kiva 1	192
LA 54955	TJ		200
	Carter Ranch	Great Kiva	235
AZ P:16:2	Tla Kii	Kiva 52	260.2
LA 2454	Woodrow		279
LA 1294	Yeo 194	Great Kiva	279
AZ P:16:2	Tla Kii	Kiva 1	287.6

Pine Creek pueblo is located on a tributary of the Gila River in southwestern New Mexico (Anyon and LeBlanc 1980). The two EP period communal structures at this site, Rooms 1 and 4, are relatively small (Anyon and LeBlanc 1980). Room 1 is 13 m^2 and Room 4 is 16 m^2. The size of the two structures suggests that they would have been used by smaller segments of the Pine Creek community. Dates for the two structures span the entire EP period from A.D. 1000 to 1150, and Anyon and LeBlanc (1980) suggest that the two communal structures were contemporary, although they do not provide chronometric data to support this claim. The two Pine Creek pueblo communal structures are relatively small and may have been used during the same period. If they are contemporary, size data for these structures1 provide evidence for population aggregation in this area of the Mogollon region during the EP period, however there is insufficient evidence to support this claim.

Treasure Hill, situated on Cameron Creek in southwestern New Mexico, also appears to provide evidence for population aggregation during the EP period (Anyon and LeBlanc 1980; Cosgrove 1923). Rooms 6 and 8 are the two EP period structures and are approximately the same size, 14 and 15 m^2, respectively (Anyon and LeBlanc 1980; Cosgrove 1923). Ceramic dates for the two structures, Rooms 6 and 8, do overlap (Cosgrove 1923). Room 6 is associated with the northern roomblock and Room 8 with the east roomblock (Anyon and LeBlanc 1980; Cosgrove 1923). While there are no definitive chronometric data for these structures, it is unclear if they were contemporary or if they were used sequentially. However, given the small sizes and location data for the two structures, Treasure Hill appears to provide evidence for EP period aggregation.

As was the case at Treasure Hill, there are no absolute dates for the two West Fork communal structures (Anyon and LeBlanc 1980; Ice 1968). Date ranges for communal structures 10 and 6 are A.D. 1000 to 1150. Both of the structures are relatively small, structure 10 is 10 m^2 and 6 is larger at 16 m^2 (Shafer 2003). The two structures are associated with specific roomblocks at this EP period site (Ice 1968). In the absence of absolute dates for structures 10 and 6, it is difficult to determine if the two structures were contemporary. However, size and location data support the idea that the West Fork communal structures provide evidence for EP period population aggregation.

There are two EP period communal structures at the 300-room Woodrow ruin, located in southwestern New Mexico (Stuart and Gauthier 1981). Neither of the Woodrow structures was given a number, and both are quite large, 120 and 279 m^2 (Stuart and Gauthier 1981). The structures are embedded within two of the site's 16 roomblocks (S. Lekson, personal communication 2005). The lack of dates for the structures is problematic for determinations of whether or not they were coeval. The communal structures have very little post-depositional fill within them, and the site appears to have been abandoned at the end of the EP period (S. Lekson, personal communication 2005; Stuart and Gauthier 1981). Because these structures were not excavated, there are no floor context ceramics, which makes it difficult to argue that one of the structures was abandoned and another built and used. Given size data alone, in the absence of clearer chronometric data, it is difficult to say if the Woodrow communal structures provide evidence for EP period population aggregation or integration.

Rock House ruin is situated on the Mimbres River and has two EP period communal structures (Anyon and LeBlanc 1980). The two structures, Features 7 and 8, are exactly the same size (11.6 m^2), and their dates overlap with one another. Construction data for the site show that Feature 8 was abandoned prior to the construction of Feature 7 (Anyon and LeBlanc 1980; Laboratory of Anthropology site files, Santa Fe, New Mexico). In this case, the people living at Rock House ruin replaced their original communal structure with another one of the exact same size; therefore, these structures provide evidence for social integration during the EP period.

The two EP Pueblo Lillie Allen communal structures, Kivas 1 and 2, were studied by Kayser (1971). Kayser's (1971) examinations led him to conclude that the construction of Kiva 1 predated Kiva 2. At the same time, he also suggested that the two communal structures were used at the site simultaneously. Kiva 1 is 24 m^2, approximately double the size of Kiva 2, which is 14 m^2 (Kayser 1971). Because there are two communal structures, which are associated with different areas of the site and because they vary in size, Kivas 1 and 2 likely represent evidence for increased population aggregation during the EP period.

The two Graveyard Point communal structures do not vary a great deal in size (Hammack 1966). Features 8 and 9 are both quite small at 11 and 17 m^2. Both structures are spatially separated from the rest of the site's architecture. Ceramic dates are the only ones available for the two EP period communal structures and so it is not possible to determine whether the two were contemporaneous. Given the similar size of the two structures, if they are contemporary they appear to reflect population aggregation during the EP period (Anyon and LeBlanc 1980).

In the Mimbres valley at the Mattocks ruin, there are two communal structures. Unit 410 was initially a habitation pit structure and was remodeled into a communal structure, (Anyon and LeBlanc 1980:267; Gilman and LeBlanc n.d.; LeBlanc 1983). Kiva 48, the second EP period communal structure, is quite small at 15 m^2. The remodeled Unit 410 was slightly smaller, 14 m^2 (Gilman and LeBlanc n.d.). As is the case with several other EP period communal structures discussed in this section, the sizes of the small structures, like those identified at Mattocks, are problematic. Gilman (1998) and others (Lekson 1979) have discussed small "out of sequence" pit structures suggesting that they are not communal structures at all, but rather represent temporary residences for people constructing surface roomblocks. Because Unit 410 and Kiva 48 are approximately the same size and are associated with two different parts of the site suggests that they were the physical manifestation of aggregation at Mattocks. It is unclear if these small structures are contemporary if they are they provide evidence for EP period aggregation.

At the Mimbres valley Galaz ruin, there are two EP period communal structures (Anyon and LeBlanc 1984). Kiva 107 and structure 73, also referred to as Parrot Kiva, were identified at the site. Kiva 107 is very small, 12 m^2, and the Parrot Kiva is very large at 147 m^2. Ceramic dates for Kiva 107 range from A.D. 1000 to 1150, while ceramic dates for Parrot Kiva range from A.D. 950 to 1150 (Anyon and LeBlanc 1984). Anyon and LeBlanc (1984:135-137) state that Kiva 107 was remodeled two times during the EP period and that the Parrot Kiva was purposefully destroyed at the end of the EP period (Creel and Anyon 2003). Given the relative dates for these structures, it is difficult to determine whether the two structures are contemporary, but the fact that Kiva 107 was remodeled suggests that it was used throughout the EP period. It is possible that both population aggregation and integration occurred at this 150-room pueblo. The very small Kiva 107 may have been built and used by one group within the larger community. The very large Parrot Kiva most likely served the community as a whole.

During the EP period at the Dinwiddie site, in southwestern New Mexico, there are two communal structures (Bussey 1972). Based on ceramic data collected during site excavations the site has been dated between A.D. 1032 and 1100 (Bussey 1972:78). Features 11 and 14 are both approximately 13 m^2, and the relative dates available for the structures do overlap (Anyon and LeBlanc 1980; Bussey 1972; Linse 1999a). There are two roomblocks at the Dinwiddie site, one eastern and one western (Anyon and LeBlanc 1980; Linse 1999a). Feature 14 is attached at the northern end of the western roomblock (Anyon and LeBlanc 1980; Bussey 1972:62). Feature 11 is associated with the eastern roomblock at the site (Anyon and LeBlanc 1980:268-269; Bussey 1972:62). Given the relatively short occupation at the site, the size of the communal structures, and the location of these structures associated with roomblocks, aggregation likely occurred during the EP period at Dinwiddie.

There are 12 roomblocks and two communal structures at the EP period site of Black's Bluff located in southwestern New Mexico (Anyon and LeBlanc 1980; Brunet 1972; Fitting et al. 1972). The two communal structures, Kiva 7 and Great Kiva 13, date to the EP period. Unfortunately, only ceramic dates ranging from A.D. 1000 to 1175 are available for the two structures (Fitting et al. 1972). Neither structure is exceptionally large. Great Kiva 13 is 28 m^2 and Kiva 7 is half the size at 14 m^2 (Anyon and LeBlanc 1980). The larger of the two structures, Great Kiva 13, is located in a prominent location while the smaller Kiva 7 is associated with one of the site's roomblocks (Fitting et al. 1972).

Given the lack of absolute dates, it is difficult to evaluate whether or not they are contemporary. If the two are contemporary, the Great Kiva could reflect the importance of social integration at the site, while Kiva 7 reflects possible population aggregation at the site. As was the case at Galaz, the sizes of the Black's Bluff communal structures are interesting because they may reflect diversity within the community (i.e., some people build and use smaller communal structures while others do not). The presence of two smaller structures and one large one suggests that at Black's Bluff aggregation and integration occurred at this EP period site.

Tla Kii is located on Forestdale Creek in east-central Arizona. Kivas 1, 2, and 52, make up the Tla Kii's EP communal structure assemblage (Haury 1985; Herr 2001). Kiva 1 is 288 m^2 and dates from A.D. 1008 to 1121, a date of A.D. 1035 was provided for the 12 m^2 Kiva 2, and a ceramic date range of between A.D. 1000 and 1150 was provided for the 260 m^2 (Kiva 52) structure at the site. Interestingly, site reports (Herr 2001) indicate that the Tla Kii inhabitants did not complete the construction of Kiva 2, which was situated within one of the roomblocks. Kiva 2 was abandoned in favor of the much larger Kiva 1, which is 288 m^2, which was situated 25 meters to the south of the site.

Construction of a small communal structure may have represented a desire of the people living at Tla Kii to privatize their activities or to create a space where fewer people could attend functions. The abandonment of this smaller structure, which was never finished and therefore never used and the construction of a much larger one suggests that integration of large numbers of people became the ultimate priority. Kiva 52 is also large, 260 m^2, and given its size, it is probably not a contemporary of Kiva 1, as the residents of a 21-room pueblo would not likely need two very large communal structures (Herr 2001). When considered as a whole, it is likely that size data from Tla Kii provide evidence to support the idea that social integration, rather than aggregation, was emphasized at this site during the EP period.

Communal structure data from the Carter Ranch (Laboratory of Anthropology site files, Santa Fe, New Mexico; Longacre 1970), situated in the Forestdale region in eastern Arizona, are problematic because only date ranges are available for the EP period assemblage. There are tree-ring cutting dates for the 235 m^2 Great Kiva ranging from A.D. 1116 to 1156 and ceramic dates for the 8 m^2 Room 16 and the 8 m^2 Kiva 1, which range from A.D. 1000 to 1150. Kiva 1 is enclosed within one of the site's plazas. Room 16 is associated with one of the roomblocks at the site, and the Great Kiva is 10 meters from the site's center. Site reports housed at the Laboratory of Anthropology in Santa Fe, New Mexico, state that the Great Kiva was constructed earlier than the other two much smaller structures. The physical separation of the large communal structure from the site's center provides support for some degree of social integration at Carter Ranch.

The facts that the Great Kiva was burned upon its abandonment and that the two later structures are incorporated into the site's architecture appears to provide evidence for integration and then aggregation during the EP period. It does appear that population aggregation did occur at the site, as evidenced by the presence of two very small communal structures. Size data from Carter Ranch also provide support for initial integration, followed by a period of population aggregation.

The Mimbres valley NAN Ranch ruin has five EP communal structures (Burden 2001; Shafer 2003). Aggregation appears to have occurred during the EP period, as was the case during the LPS period at this site. Dates for the 39 m^2 communal structure 18 range from A.D. 1071 to 1100. The 32 m^2 structure 57 dates from A.D. 1025 to 1070; structure 58, which is 18 m^2, dates from A.D. 1000 to 1130. The largest communal structure, 45, was 95 m^2 and has a tree ring date of A.D. 1107v. Structure 39 is 36 m^2 and has a tree ring date of A.D. 1090v. All five of these EP period communal structures were used during the EP period (Burden 2001).

Using construction sequences for the site, Shafer (2003) and Burden (2001) have provided evidence that structure 57 (A.D. 1025 to 1070), was a contemporary of structure 58 (A.D. 1000 to 1130). Structure 57 was abandoned before the construction of structures 18, 45, and 39 (Burden 2001). Shafer (2003) suggests during the EP period, communal structures 18, 45, 39, and 58 were in fact contemporary. The sizes of the three small structures provide evidence for population aggregation at NAN Ranch ruin, and there is also evidence for some degree of social integration, given the presence of one large, centrally located communal structure.

Evidence for population aggregation can also be found at the EP period site of Wind Mountain (Woosley and McIntyre 1996). The site consists of three roomblocks and five communal structures (Woosley and McIntyre 1996). As was the case during the MPS and LPS periods, aggregation appears to have occurred during the EP period at Wind Mountain. The five Wind Mountain communal structures include Room 3 (A.D. 1000 to 1150), Room 7 (A.D. 1040 to 1130), Room 15 (A.D. 1030 to 1150), House V (A.D. 970 to 1050), and P2 (A.D. 1100+/-) (Woosley and McIntyre 1996). The structures range in size from 15 to 38 m^2. All of the structures are relatively small and are scattered throughout the site (Woosley and McIntyre 1996). As previously discussed, following Gilman (1998) and Lekson (1989), the size of the five structures does make their delineation as communal structures difficult. That the site has a history of more than one communal structure makes it interesting as an example of long-term population aggregation in this area of the Mogollon region.

Data from both NAN and Wind Mountain provide examples of multi-period aggregation. At these sites, aggregation begins during the LPS period and continues into the EP period. While not all of the communal structures at NAN and Wind Mountain are contemporary, at both sites, multiple contemporary communal structures appear to have been used at the same time.

During the EP period there appears to be size data that can be used as evidence for both population aggregation (e.g., Treasure Hill, West Fork, and Wind Mountain) and social integration (e.g., Diablo, Dry Prong, Elk Ridge, Rock House, Saige-McFarland, Sand Flat, and TJ) in various areas of the Mogollon region. There are also sites like Galaz, NAN, and Black's Bluff with evidence for both aggregation and integration during the EP period and Carter Ranch with evidence for integration followed by aggregation.

Communal structure sizes vary a great deal during this period. Some sites (e.g., Wind Mountain) have multiple small communal structures, while others have a single very large communal structure (e.g., Yeo 194). The size variation may suggest several possibilities. First, that some degree of cultural diversity is present at these sites during this period (i.e., aggregation). Second, that the inhabitants of certain roomblocks had greater social importance than others did (i.e., aggregation). Third, that aggregation and integration can occur simultaneously even at a single site. Finally, forth, that integration can replace aggregation at a site.

Late Pueblo Period (A.D. 1150 to 1450). The LP period was divided into ELP and LLP periods (Figure 5.28). The decline of average size to 54 m^2 is for the LP period as a whole (Figure 5.28). However, it appears that the decline occurred primarily during the early part of the LP period, when average communal structure size decreased significantly from the ELP period to 34 m^2 (Figure 5.28). This decrease coincides with a period of social reorganization in many areas of the Mogollon region, including the Mimbres, Reserve, and western areas (Cordell 1997; Nelson and LeBlanc 1986; Nelson 1999). Communal structure size increases once again during the LLP period to the highest ever documented to an average of approximately 80 m^2.

One site that provides evidence for long-term integration during the LP period is the Point of Pines ruin (Gerald 1957; Stone 2001). Point of Pines (W:10:50) is a very large 800-room site situated in eastern Arizona that dates to the ELP and LLP periods (Gerald 1957; Stone 2001). There are two communal structures at the site, Kivas 1 and 2 (Gerald 1957). Kiva 1 is a very large structure, 200 m^2, which was constructed at the beginning of the ELP period. This structure was later remodeled and expanded to an even larger Kiva 2 at 264 m^2 (Gerald 1957; Stone 2001). In addition to being made larger than Kiva 1, Kiva 2 was elaborated architecturally upon its construction to include three internal rooms.

The communal structure data from Point of Pines can be used to suggest that Kiva 1, a large communal structure, was built and used during the ELP period and was later replaced by an even larger structure during the LLP period. At Point of Pines, one large integrating structure was built and used during each of the two LP periods to help organize the community's large population.

Early Late Pueblo Period (A.D. 1150 to 1300). Size data were available for 32 of the ELP period communal structures (Table 5.30). The ELP period structures listed in Table 5.30 can be used to support the idea that population aggregation occurred in many areas during the ELP period (see Nelson 1999). However, communal structure size varies quite a bit during the ELP period, although not to the same degree witnessed during the EP period. The smallest ELP period structure is less than 8 m^2 and the largest is 180 m^2. Three ELP period sites, Chodistaas, the Gila Cliff Dwellings, and W:10:65, have two communal structures; Higgins Flat and Taylor Draw have three ELP period communal structures, and both Turkey Creek and W:10:37 have four.

Table 5.30. Communal Structure Size during the ELP Period.

Site Number	Site Name	Structure Number	Size (m^2)
W:10:37		Kiva 5	7.5
W:10:37		Kiva 3	9.6
W:10:37		Kiva 2	10.5
W:10:51	Point of Pines	Pithouse 13	10.6
W:10:37		Kiva 1	10.6
W:10:65		Kiva 2	10.9
W:10:65		Kiva 1	11
AZ W:9:123	Turkey Creek	Room 152-K1	11.6
LA 6565	Taylor Draw	Feature 15	12
AZ W:9:123	Turkey Creek	Room 251-K3	13
AZ W:9:123	Turkey Creek	Room 237-K2	14
LA 6565	Taylor Draw	Feature 22	16
LA 6565	Taylor Draw	Feature 7	16
W:10:37		Kiva 4	17.3
LA 68188	Fox Place		18.5
W:10:57		Kiva 1	21.1
LA 8891	Schoolhouse Canyon	Kiva	22.09
LA 4913	Gila Cliff Dwellings	Room 27	25
LA 3271	Valley View	Room 2	29.3
LA 467	Hulbert		30.5
LA 4913	Gila Cliff Dwellings	Room 17	31.5
LA 2112	Smokey Bear/Block Lookout	Feature 4	32.8
AZ P:14:24	Chodistaas	Room 2a	33.8
LA 15075	Montoya	Room 4	37.8
AZ P:14:8	Grasshopper Springs	Room 7/Protokiva	39
LA 4026	Goesling Ranch		46.1
LA 8682	Higgins Flat	Kiva 2	48
LA 2949	Apache Creek	Great Kiva	50
AZ P:14:24	Chodistaas	Room 18a	50
LA 8682	Higgins Flat	Kiva 1	99.8
LA 8682	Higgins Flat	Great Kiva	128.4
AZ W:9:123	Turkey Creek	Great Kiva	180

At Chodistaas pueblo (Lowell 1999; J. Jefferson Reid personal communication, 2000, 1992; Riggs 2001), the size data help to support the idea that population aggregation occurred during the ELP period. The two communal structures identified at the site, Rooms 18a and 2a, are 50 and 34 m^2, respectively, and each is associated with one side of the 18-room pueblo. Room 18a is a walled communal structure with an attached room, located on the south side of the roomblock. Room 2a is not walled and is located on the community's north side. Both structures have been dated to between A.D. 1263 and 1290, based on tree ring cutting date ranges from the site (Lowell 1999). The relatively short occupation of the site suggests that the two communal structures were contemporary. The size variation supports the idea the Chodistaas is an example of ELP period aggregation, with two distinct groups living at the site, a northern and a southern community, each with an associated communal structure.

At the Gila Cliff Dwellings in southern New Mexico, Rooms 17 and 27 date to the ELP period. A tree-ring cutting date of A.D. 1287 is available for Room 17, and a tree ring cutting date range of A.D. 1270 to 1290 was provided for Room 27 (Anderson et al. 1986; Gadd 1993). The two rectangular structures, 17 and 27, are 32 and 25 m^2, respectively (Anderson et al. 1986; Gadd 1993). The relatively short-term occupation of the site provides support for the idea that the two structures are contemporary. Rooms 17 and 27 are about the same size, and are associated with two of the site's caves. These data suggest some degree of aggregation at the site.

At W:10:65, a 40-room pueblo site located in the Point of Pines region of eastern Arizona, there are two small, 11 m^2, communal structures that date between A.D. 1150 and 1265, based on ceramics found within the fill of the structures (Olsen 1959; Stone 2001). It is difficult to evaluate whether they were used at the same time or not because of the lack of absolute dates. The sizes of the two structures and the fact that they are associated with two different roomblocks suggest that some degree of population aggregation was present at the site. Because it is not possible to determine whether the structures were contemporary, there is insufficient evidence to support this contention.

Construction data from Higgins Flat (Martin 1979; Martin and Rinaldo 1950; Martin et al. 1956; Rinaldo et al. 1956) provide evidence that the site's three communal structures were contemporary. The community of Higgins Flat pueblo, a 15-25-room ELP period pueblo, appears to have had early population aggregation, which was subsequently replaced by social integration. The Great Kiva (A.D. 1249 to 1281), Kiva 1 (A.D. 1175 to 1250), and Kiva 2 (1175 to 1250) at Higgins Flat, situated along the upper San Francisco River in western New Mexico, overlap in date ranges (Martin 1979; Martin and Rinaldo 1950; Martin et al. 1957). However, construction data from the site indicate that the Great Kiva was superimposed on Kiva 1, and therefore replaced it (Martin 1979).

The Great Kiva is very large, 128 m^2, and appears to have replaced the somewhat smaller Kiva 1, 100 m^2 (Rinaldo et al. 1956). The Great Kiva and Kiva 1 were both situated in between the site's two roomblocks. While a specific date is not available for Kiva 2, construction evidence has been used to suggest that it was a contemporary of Kiva 1. Kiva 2 is smaller than the other two communal structures at 48 m^2 and is physically separated from both of the roomblocks, situated outside of the eastern roomblock. Construction data can be used to suggest that the Higgins Flat community initially consisted of two aggregating groups, one associated with Kiva 1 and the other with Kiva 2. Over time, the centrally located Great Kiva appears to have become the focus of communal activities for the entire community. The smaller Kiva 2 appears to have fallen into disuse after the Great Kiva was built. The three communal structures at Higgins Flat appear to provide an example of an initially aggregated community that became integrated over time.

Taylor Draw, a 60-room pueblo situated in the Jornada area of the Mogollon region, has four ELP period communal structures according to the Laboratory of Anthropology site files housed in Santa Fe, New Mexico. However, I have found no data for the fourth structure. Therefore, the three structures for which there is evidence are discussed here. Taylor Draw provides an example of population aggregation in the Jornada area. Features 7, 15, and 22 date between A.D. 1100 and 1200, based on ceramics and construction data (e.g., building sequences; Laboratory of Anthropology site files, Santa Fe, New Mexico). Construction histories developed for the communal structures suggest they were contemporary. Feature 15 is the smallest of the three structures and is 12 m^2. Features 7 and 22 are both 16 m^2. No location data are available for these structures. If the Taylor Draw communal structures are contemporary, the site represents aggregation in the Jornada region. Given the lack of absolute dates for the structures, however, it is not possible to determine whether they were contemporary. While size data support aggregation, the lack of chronometric data provides insufficient evidence for aggregation or integration at Taylor Draw.

Four communal structures from Turkey Creek pueblo date to the ELP period (Lowell 1991; R. Karl, personal communication, 2003). The site is situated along Turkey Creek in the Point of Pines region of eastern Arizona and has 335 rooms (Lowell 1991). The Great Kiva and Rooms 152-K1, 251-K2, and 237-K3 all date within a 61-year period. The Great Kiva has a tree-ring cutting date of A.D. 1240 and 152-K1, 251-K2, and 237-K3 range in age from A.D. 1225 to 1286 (Lowell 1991). The largest structure, the Great Kiva, is 180 m^2 and it is centrally located. The other three structures, 152-K1, 251-K2, and 237-K3, are much smaller, 12 m^2, 14 m^2, and 13 m^2, respectively, and are scattered throughout the site.

Size data, when combined with chronometric and location data, can be used to suggest that both population aggregation and social integration occurred during these 61 years at Turkey Creek. The three very small structures are found throughout the site, and two of the structures were found underneath rooms (Lowell 1991). As previously discussed, construction sequences available for the site suggest that the three smaller communal structures were associated with the first part of the site's occupation (Lowell 1991). These three smaller communal structures suggest that the Turkey Creek community was formed by population aggregation. At the same time, the very large centrally located Great Kiva suggests that at some point during the ELP period the community began to promote social integration. Construction sequences and variation in structure size suggest that initial aggregation at the site was replaced by integration toward the end of the site's occupation.

W:10:37 (Olsen 1959; Stone 2001), situated in east-central Arizona, has five ELP period communal structures. Kivas 1, 2, 3, 4, and 5 have been dated between A.D. 1150 and 1265, based on ceramic data. The five structures range in size from approximately 8 m^2 (Kiva 5) to 17 m^2 (Kiva 4), with average communal structure size of about 11 m^2. The ELP period community at W:10:37 consisted of 40 rooms, which is a ratio of rooms to communal structures is 8 to 1. The lack of absolute dates makes it difficult to determine if all of the communal structures were contemporary, although Stone (2001) has suggested based on construction data that these structures were contemporary. It is possible, given the ratio of communal structures to habitation rooms and the size variation, that the W:10:37 community was relatively segmented. It is possible that this ELP period site consisted of five aggregated clusters of eight rooms, each with a differently sized communal structure.

Size data for ELP period communal structures suggest that during this period both aggregation and integration occurred at Mogollon sites. At some sites, (e.g., Higgins Flat and Turkey Creek) aggregation is evidenced by the presence of multiple communal structures). Size results are similar to those provided by the analyses of frequency and location data in that during this period integration is present at many sites, but aggregation continues to be present at several sites within the region.

Late Late Pueblo Period (A.D. 1300 to 1450). Communal structure size data were available for 10 LLP period structures from six sites (Table 5.31). Structure size variation continues during this later part of the LP period, but the average size at this time increases substantially to 80.4 m^2 (Figure 5.28). The increase of average communal structure size by almost 50 m^2 from the ELP period to the LLP period is notable. While LLP period structure size varies from 13 m^2 to 263 m^2, communal structure sizes are similar to those associated with the EP period. There are fewer middle range communal structures in the LLP period assemblage (Table 5.31). In other words, there are small and very large, but no medium sized communal structures in the LLP period assemblage.

Table 5.31. Communal Structure Size during the LLP Period.

Site Number	Site Name	Structure Number	Size (m^2)
LA 8780	Grasshopper	Room 341	12.5
LA 5793	Ormand	Room 79	17.1
W:10:47		Kiva 1	19
W:10:52		Kiva 1	20.1
W:10:52		Kiva 2	20.1
W:10:48		Kiva 1	21.2
LA 8780	Grasshopper	Room 246	29.2
LA 8780	Grasshopper	Great Kiva	181.8
W:10:50	Point of Pines	Kiva 1	220
W:10:50	Point of Pines	Kiva 2	263

At large LLP period sites like eastern Arizona's 500-room Grasshopper pueblo and the 800-room Point of Pines ruin, very large communal structures (182 and 263 m^2, respectively) are found in enclosed plaza areas. Three of the six LLP period sites have one relatively small (approximately 20 m^2) communal structure, and three sites have more than one communal structure for which size data were available. W:10:52 and Point of Pines have two LLP period communal structures each and Grasshopper has three (Table 5.30).

At W:10:52, a 100-room LLP period pueblo, there are two communal structures, Kivas 1 and 2 (Smiley 1952). Although location data are not available for these communal structures, size data can be used to suggest that population aggregation occurred at the site during the LLP period. Both structures are relatively small, each being approximately 20 m^2. Smiley (1952) suggests that the structures were contemporary. He states that based on construction data the two W:10:52 communal structures were used during the same 50-year period (A.D. 1400 to 1450). Two relatively small communal structures at a 100-room pueblo occupied for 50 years provide evidence for population aggregation, because the structures are small enough that they would have served a segment of the site's population rather than the entire community.

During the LLP period at the Point of Pines site, situated in eastern Arizona, two very large communal structures were identified. Kiva 1 is 220 m^2 and Kiva 2 is even larger at 263 m^2 (Gerald 1957; Stone 2001). The two structures do not appear to have been contemporary (Stone 2001). Dates for Kiva 1 range from A.D. 1265 to 1325/1350, while Kiva 2 has been dated from 1325/1350 to 1400 (Gerald 1957; Stone 2001). Construction data for the site suggest that Kiva 2 replaced the remodeled Kiva 1 and that Kiva 2 was used for the majority of the LLP period (Stone 2001). Point of Pines provides evidence for social integration during the LLP period at this large site.

Grasshopper pueblo provides support for a dual emphasis on population aggregation and social integration during the LLP period (Reid 1989; Riggs 2001). At Grasshopper pueblo, the Great Kiva is very large, 182 m^2, and has a tree-ring date of A.D. 1330 (Reid 1989; Reid and Montgomery 1999; Riggs 2001). This large structure was not built until the site had been occupied for more than 50 years, and it may have been constructed in an effort to promote integration within a growing community. There are two smaller communal structures at Grasshopper. Each is embedded within two of the site's roomblocks and each was constructed as the roomblocks were added to the site. Room 246 is 29 m^2 and is associated with roomblock 3 (Riggs 2001). Room 341 is 12 m^2 and attached to roomblock 7. Both smaller communal structures were built before the Great Kiva and their size and locations reflect initial aggregation at the site. The large Grasshopper Great Kiva, which was built later, would have provided space for many more community members to participate in communal activities. This larger facility may have been built to promote social integration within an aggregated community.

Size data, combined with chronometric and location data, suggest that integration occurred at Ormand, W:10:47, W:10:48, and Point of Pines. These data provide evidence for LLP period aggregation was identified at W:10:52. Communal structure size variation at Grasshopper provides evidence for LLP period aggregation followed by integration. Reasons for LLP period social integration in the Mogollon region are explored below and in Chapter 6.

Communal Structure Size: A Summary

Size data are used in this section as measure aggregation and integration at Mogollon sites (Table 5.32). Communal structure sizes vary quite a bit during all periods. The EPS, LPS, and EP period size averages are similar, but in some cases proceed or follow what are sometimes extreme variations in size. It may be the case that population aggregation and social integration occur in patterns with periods of aggregation are mitigated by an increased emphasis on integration.

Table 5.32. Sites with Evidence for Aggregation and/or Integration Based on Communal Structure Size Data.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient data
EPS	(1) Three Circle	(17) Bear, Bluff, Crooked Ridge, Cuchillo, Diablo, Galaz, Harris, Lagoon, McAnally, Mogollon, Old Town, Promotory, Ridout Locus, Saige-McFarland, SU, Winn Canyon, LA 19075			
MPS	(1) Wind Mountain	(7) Black's Bluff, Gallita Springs, Harris, Mogollon, Old Town, Turkey Foot Ridge, Turquoise Ridge			
LPS	(2) Lee, Wind Mountain	(16) Beauregard, Bradsby, Cooney Ranch #1, Galaz, Gallita Springs, Harris, Lake Roberts Vista, Nantack, Old Town, Sawmill, Starkweather, SU, Wheatley Ridge, WS Ranch, LA 3274, LA 39261	(2) NAN, Swarts		(1) Cameron Creek
EP	(6) Dinwiddie, Graveyard Point, Pueblo Lillie Allen, Treasure Hill, West Fork, Wind Mountain	(14) Diablo, Dry Prong, Elk Ridge, Ojo Caliente G, Redrock, Rock House, Saige-McFarland, Sand Flat, TJ, Tla Kii, Wheaton Smith, Yeo 194, LA 18753, LA 66686		(1) Carter Ranch	(3) Mattocks, Pine Creek, Woodrow
ELP	(3) Chodistaas, Gila Cliff Dwellings, W:10:37	(11) Apache Creek, Fox Place, Goesling Ranch, Grasshopper Spring, Hulbert, Montoya, Point of Pines, Schoolhouse Canyon, Smokey Bear, Valley View, W:10:57	(1) Higgins Flat		(2) Taylor Draw, W:10:65
LLP	(1) W:10:52	(4) Ormand, Point of Pines, W:10:47, W:10:48	(1) Grasshopper		

***Size data from Galaz, Black's Bluff, and NAN (EP) and Turkey Creek (LLP) provide evidence for simultaneous aggregation and integration.**

During the EPS period, communal structures are an average of 59 m^2. Average size drops substantially to 43 m^2 during the MPS period, but there is only evidence from one site, Wind Mountain, indicates that population aggregation occurs during this period. There is a rebounding of average structure size during the LPS period, when the average floor area of these structures is approximately 57 m^2 (Figures 5.27 and 5.28). The majority of LPS period sites have only one communal structure, but size data do offer some evidence for aggregation continuing into the LPS period. At NAN and Swarts, initial aggregation was followed by integration.

Average communal structure size increases slightly into the EP period communal structures, calculated to about 63 m^2 however, average size is relatively stable across time. Some Early Pueblo period sites appear to have been more aggregated than integrated, possibly due to rapid population growth and immigrating populations. Six sites have size evidence for aggregation and size data from Tla Kii and Carter Ranch suggest that integration and aggregation occurred at these sites during the EP period. However, many EP period sites have only one relatively large communal structure, providing evidence that although population begins to be an issue, social integration continues to be emphasized at the majority of EP period sites.

Population aggregation appears to continue, and possibly to increase during the LP period. Interestingly, when all LP period sites are lumped together, the average size of the communal structure decreases during the LP period occupation of the Mogollon area in general to 54 m^2 (Figure 5.32). When the LP period is divided into early and late components, average communal structure size declines during the ELP period to 34 m^2.

Communal structure size is the smallest it has ever been during the ELP period (Figure 5.28). These data can be used to suggest that population aggregation occurred during this period because aggregating groups of people living at sites appear to have built small communal structures with their roomblocks, an architectural style also seen in Ancestral Pueblo communities in areas of northern New Mexico (Hewett 1906; Nisengard, n.d., 2005). Evidence for LLP period aggregation, based on size data, was occurs at only one site, W:10:52 and communal structure size rebounds to an unprecedented average of 80 m^2 (Figure 5.28). During the LLP period Grasshopper site, it appears that even when there is evidence for population aggregation, integration is emphasized (see Riggs 1999, 2001 for discussion of population aggregation at Grasshopper pueblo).

Several researchers have provided evidence for substantial population dispersal at the end of the EP period in some parts of the Mogollon region (Anyon and LeBlanc 1980, 1984; Cordell 1994; Hegmon et al. 1998; Nelson 1999). Some of these researchers have also found data in some areas of the Mogollon region (e.g., Mimbres valley, Grasshopper) to support the idea that LP period sites were less populated, but possibly, more integrated (Anyon and LeBlanc 1980). The communal structures included in the size analysis do illustrate that larger communal structures were built during the LP period, thus providing support for the idea that communal structures were likely serving the entire community or at least larger segments of their communities.

As previously stated, there has been debate about who exactly is being integrated by a small communal structure or ‘kin kiva’ (Gilman 2006; Gilman and LeBlanc n.d.;

Lekson 1989). It is possible that the Great Kivas and large plaza pueblos of the Pueblo period lacked the level of intimacy common to earlier times. If this was the case, the smaller structures that are contemporaneous with larger communal structures may represent the meeting places for members of cooperating kin groups. Cooperating kin groups may include extended families, related but autonomous communities that participate in marriage alliances, or two or more communities that are cooperating economically, politically, and/or religiously.

Size data can be combined with frequency and location data to provide additional support for the findings outlined in this section. In many cases, data from these three characteristics compliment one another, in other cases analyses provide in conflicting results. Comparisons of these three types of data are provided at the end of this chapter and in Chapter 6.

Communal Structure Shape

As stated in Chapter 1 (Table 1.1), I suggest that the shape of a communal structure can be related to issues of aggregation and integration, in that contemporary within-site and between structure variations may be indicative of population aggregation at a site. In contrast, for this analysis, less variation and increased standardization in the shape of contemporary communal structures are interpreted as evidence of social integration. In some cases, there are multiple contemporary communal structures of the same shape at a single site. Similarity in shape may suggest that there is an overarching belief system, which mandates the shape of a communal structure within a particular community. Shape similarity may also indicate a desire by members of an aggregated community to do things to "fit in."

Throughout the course of the analysis of shape data, I found that structure shape is largely time dependent, for example, earthen lobes largely associated with the EPS period, while rectangular structures are common during the LPS and Pueblo periods. However, patterns in communal structure shape can provide support for frequency, location, and size data, to help measure population aggregation and social integration.

In general, Mogollon communal structures are D-shaped, rectangular, square, and circular; circular kivas may or may not have earthen lobes. There are also some irregularly shaped structures in the assemblage. For purposes of simplicity, for Figure 5.30, I coded oval structures as circular and oval structures with lobes as circular structures with lobes. All of the irregular structures were described as "rectangular and/or irregular," and so these structures have been coded as rectangular (Figure 5.30). In an effort to understand structure shape variability, and its relationship to aggregation and integration I provide a discussion of structure shape by period in the following sections. Shape data are available for 167 of the structures in the Appendix II database to demonstrate that these structures do vary (Figure 5.30). Specific dates were available for 149 of the 167 structures (Appendix II).

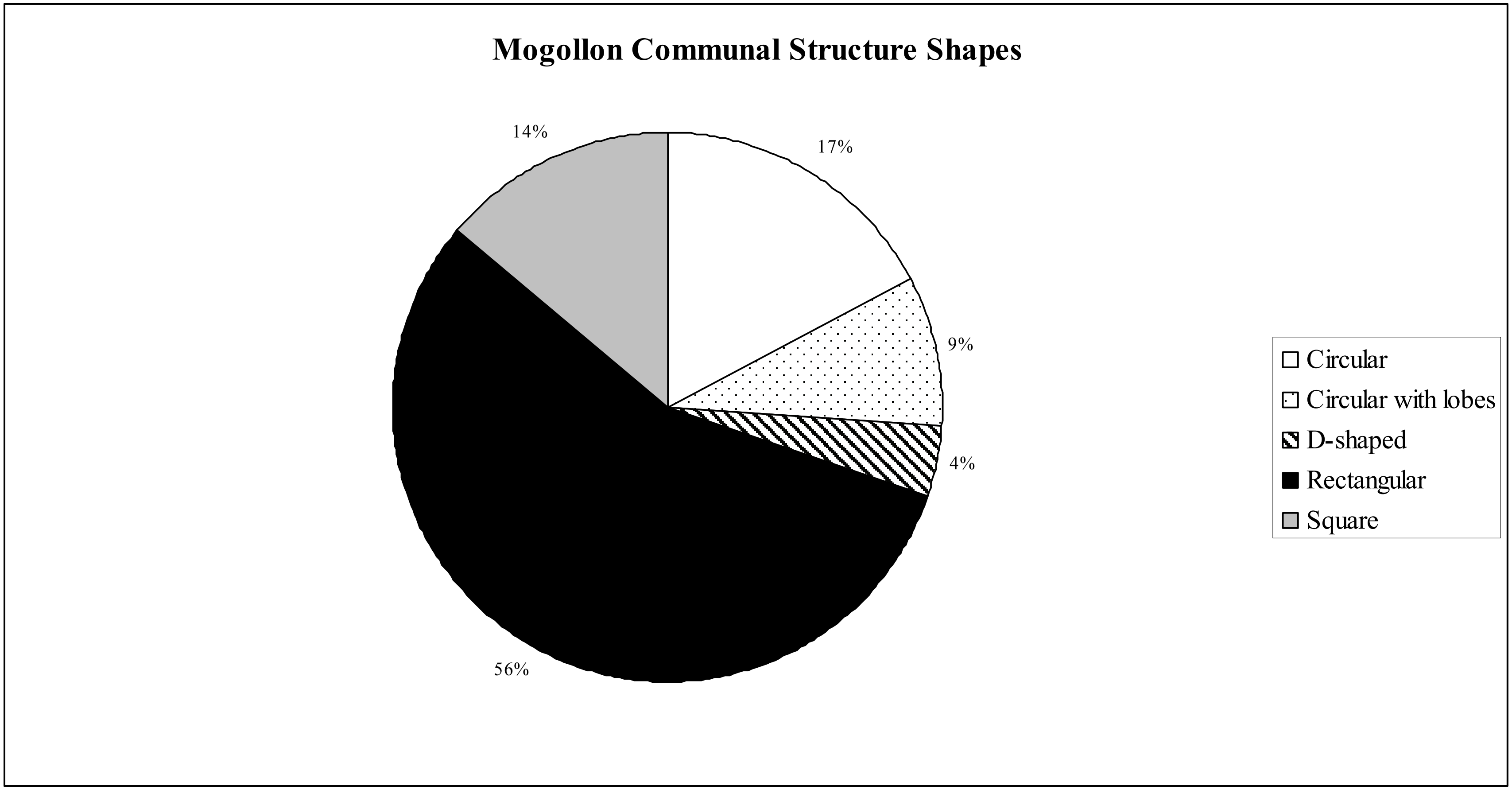


Figure 5.30. Percentage of Communal Structure Shapes at Sites in the Mogollon Region.

Pit Structure Period

During the Pit Structure period, several communal structure shapes not seen during later periods are present. Certain shapes, specifically lobed circular communal structures, are present during the EPS period, but disappear from the Mogollon region after this period. At the same time, communal structure shape during the early portion of the Pit Structure period varies little with circular structures dominating the assemblage. Rectangular, D-shaped, and square structures are present in EPS and MPS periods, however rectangular structures do not become dominant until the LPS period.

Early Pit Structure Period (A.D. 250 to 700). Little variation in structure shape exists during the EPS period (Figure 5.31). Eighty-six percent, or 19 of 22, of all EPS period communal structures in this assemblage are circular; 68 percent of these structures have earthen lobes that surround them at the entries (Figure 5.31 and Table 5.33). Rectangular communal structures account for only two of the 22 structures dating to this early period and there is one D-shaped structure. The occurrence of lobed structures, not found during any other period, helps to distinguish these early communal structures from those that date to later periods. In some cases, these lobes help to differentiate other pit structures found at these sites that appear to have been used for habitation purposes.

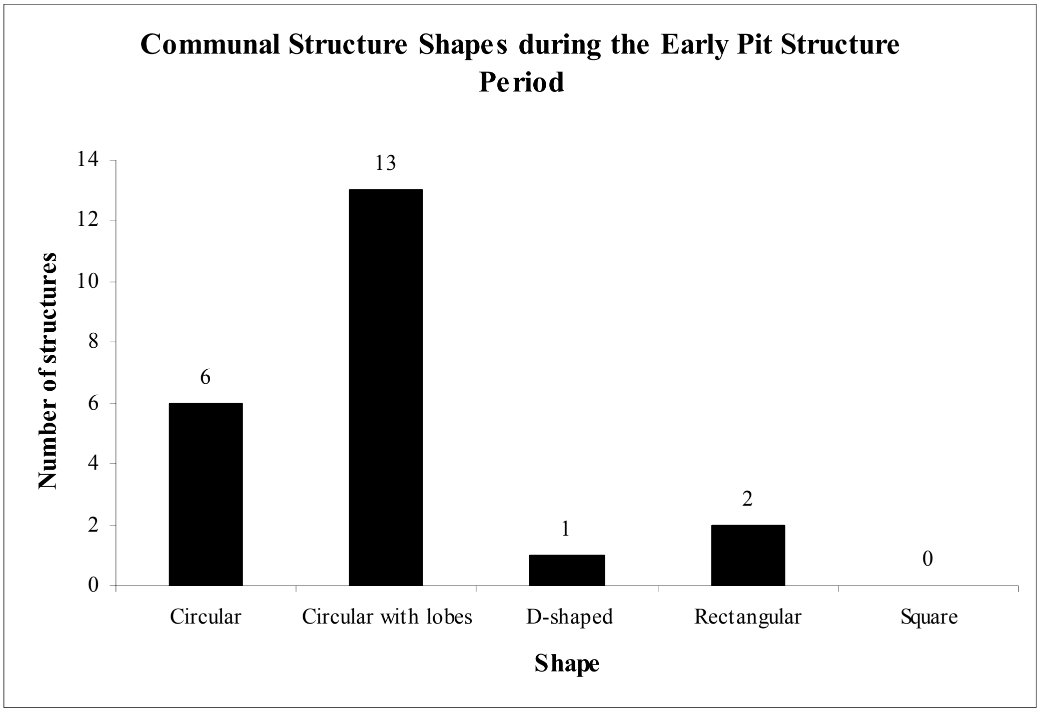


Figure 5.31. Communal Structure Shapes during the EPS Period.

Table 5.33. Communal Structure Shapes during the EPS Period.

Site Number	Site Name	Structure Number	Structure Shape
AZ P:16:1	Bear ruin	Kiva No. 1	Circular
LA 103907	Bluff	House 5	Circular
W:10:15	Crooked Ridge	Pithouse 9	Circular
LA 9713	Promotory	House B	Circular
LA 127260	Ridout Locus	House F	Circular
LA 32536	Cuchillo	1	Circular with lobes
LA 6538	Diablo	Feature 14	Circular with lobes
LA 635	Galaz	Unit 8	Circular with lobes
	Lagoon		Circular with lobes
LA 12110	McAnally	Unit 11	Circular with lobes
LA 1113	Old Town	A67	Circular with lobes
LA 64931	SU	Pithouse A	Circular with lobes
LA 64931	SU	House V	Circular with lobes
LA 53	Three Circle	Room 19	Circular with lobes
LA 34813	Winn Canyon	Room 2/Kiva	Circular with lobes
LA 19075			Circular with lobes
LA 1867	Harris	House 14	D-shaped/Oval

Table 5.33 continued.

Site Number	Site Name	Structure Number	Structure Shape
LA 53	Three Circle	2A	Oval
LA 6538	Diablo	Feature 5	Oval with lobes
LA 11568	Mogollon	House 5A	Oval with lobes
W:10:15	Crooked Ridge	Structure 19	Rectangular
LA 5421	Saige-McFarland	Pithouse 1/Great Kiva	Rectangular

The majority of EPS period sites have only one, large, circular communal structure. The frequency and shape data provide support for the idea that social integration was promoted during this period. The fact that so many of the structures are circular may be indicative of relatively small populations, small communities, regional integration, or a reflection of novice construction techniques employed during the EPS period. Four EPS period sites, Crooked Ridge (Wheat 1955), Three Circle (Bradfield 1927-1928), Diablo (Hammack 1966), and SU (Martin and Rinaldo 1947), have two EPS period communal structures.

Dates for the two communal structures at Crooked Ridge were insufficient in determining the contemporaneity of the structures. As a result, while shape data provide some evidence for aggregation, in that they are two different shapes, these data do not provide any additional information about aggregation or integration at the site. At the SU site, dates for the two structures provide information that they were not contemporary. However, both of the SU structures are circular with lobes. These data can be used to help support the idea that integration occurred at the site during the EPS period. The community built a second structure to replace the earlier one. Shape data alone do not provide support for aggregation or integration at the site. However, when these data are combined with frequency, location, and size data they contribute an additional piece of evidence to reinforce the idea that integration occurred at the SU site.

At Diablo, Features 5 and 14 date to the EPS period and are only slightly different in shape, the former is oval with lobes and the latter is circular with lobes. Chronometric data for the two Diablo communal structures are inconclusive and a date range of 100 to 200 years has been provided. As a result, size data do not provide specific information about aggregation and/or integration. There are chronometric data that provide evidence that the two Three Circle communal structures were contemporary. These data have been used to support the idea that some degree of population aggregation occurred at the site during the EPS period. The fact that the two Three Circle communal structures are different shapes (2A is oval and Room 19 is circular with lobes) provides additional support for aggregation at the site, as variation in communal structure shape is one indicator of aggregation.

Middle Pit Structure Period (A.D. 700 to 850). During the MPS period, people living in the Mogollon region live in circular, oval, and rectangular pit structures with rounded corners. These people also build communal structures in a variety of shapes (Figure 5.32 and Table 5.34). Although the MPS period sample is relatively small (n = 11), there are changes in communal structure shape during this period when it is compared to the EPS period. Specifically, MPS period communal structures are spread more evenly among the possible shapes than during the EPS period (Table 5.34 and Figure 5.32).

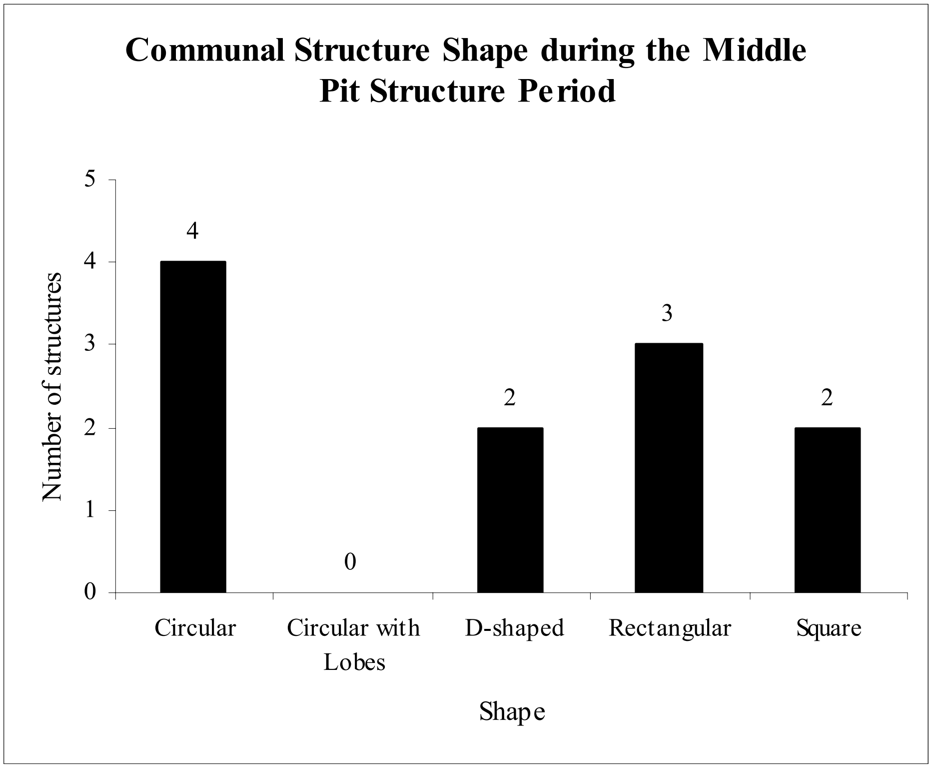


Figure 5.32. Communal Structure Shapes during the MPS Period.

Table 5.34. Communal Structure Shapes during the MPS Period.

Site Number	Site Name	Structure Number	Structure Shape
	Turquoise Ridge	Structure 35	Circular
LA 127260	Wind Mountain	House O	Circular
LA 11568	Mogollon	House 3	Circular
LA 1113	Old Town	A71	D-shaped
LA 1867	Harris	8	D-shaped
LA 127260	Wind Mountain	House AB	Oval
LA 34787	Black's Bluff	Pit House 1	Rectangular
LA 1867	Harris	House 23	Rectangular
LA 9709	Turkey Foot Ridge	Pithouse K	Rectangular
LA 6083	Gallita Springs	Feature 40	Square
LA 127260	Wind Mountain	House AK	Square

As previously stated, earthen lobes disappear from communal structures after the EPS period. While circular structures (including oval) are still the most common in the EPS period shape assemblage, D-shaped, rectangular, and square structures are also built (Figure 5.32). Eighty percent of MPS period sites have only one communal structure. The shape data may reflect some degree of diversity (i.e., aggregation) in the Mogollon region as a whole during this period. Two MPS period sites, Harris and Wind Mountain, have more than one communal structure and may provide evidence for aggregation.

At the Harris site, located on the Mimbres River in southwestern New Mexico, there are two MPS period communal structures, structure 8, which is rectangular, and the D-shaped House 23 (Creel and Anyon 2003; Haury 1936; Haury and Sayles 1947). The two Harris communal structures were not contemporary and therefore do not provide information concerning aggregation or integration at the site. Communal structure shape variation during the MPS period at this site may be indicative of stylistic variation (Conkey 1989; Conkey and Hastorf 1990), which does not necessarily provide information about aggregation or integration. At the same time, architectural variation at the site may indicate a change in social, religious, or economic control within the community (Rapoport 1969, 1982), which could provide evidence for integration (i.e., only one communal structure at the site) or aggregation (i.e., different groups living at the site with separate control of the communal structure).

There are three MPS period communal structures at Wind Mountain, situated in southwestern New Mexico (Woosley and McIntyre 1996). House AB is an oval structure and the largest of the three. The square House AK and the circular House O also date to the MPS period (Woosley and McIntyre 1996). The three structures are randomly spaced among the 50 pit structures at the site (Woosley and McIntyre 1996). Data from the Wind Mountain indicate that the three communal structures were contemporary (Woosley and McIntyre 1996). Shape variations among these structures provide evidence for population aggregation during the MPS period.

Late Pit Structure Period (A.D. 850 to 1000). Shape data were available for 26 LPS period communal structures. Structure shape variation continues from the MPS period into the LPS period. During the LPS period, circular, D-shaped, rectangular, and square communal structures are all found in the assemblage, but rectangular structures dominate (Table 5.35 and Figure 5.33). Rectangular communal structures comprise 81 percent of those in the assemblage (Figure 5.33). Four LPS period sites, for which shape data were available, have more than one communal structure. There are two LPS period communal structures at Nantack village (Breternitz 1959). NAN (Shafer 2003) and Swarts (Anyon and LeBlanc 1980) ruins both have three LPS period communal structures and Wind Mountain (Woosley and McIntyre 1996) has four.

Table 5.35. Communal Structure Shapes during the LPS Period.

Site Number	Site Name	Structure shape	Room No.
LA 38624	Starkweather	Circular	Pithouse B
LA 64931	SU	Circular	Pithouse Y
LA 127260	Wind Mountain	D-shaped	House X
LA 78337	Bradsby	Rectangular	1
LA 5841	Cooney Ranch #1	Rectangular	Communal Structure 1
LA 635	Galaz	Rectangular	42A
LA 1867	Harris	Rectangular	House 10
LA 71877	Lake Roberts Vista	Rectangular	Great Kiva
LA 2465	NAN	Rectangular	43
LA 2465	NAN	Rectangular	52
LA 2465	NAN	Rectangular	91

Table 5.35 continued.

Site Number	Site Name	Structure shape	Room No.
AZ W:10:111	Nantack	Rectangular	Great Kiva 1
AZ W:10:111	Nantack	Rectangular	Pithouse 10
LA 1113	Old Town	Rectangular	A16
LA 1691/LA 15002	Swarts	Rectangular	Room W
LA 1691/LA 15002	Swarts	Rectangular	Room 2
LA 1691/LA 15002	Swarts	Rectangular	Room AE
LA 9657	Sawmill/Fox Farm	Rectangular	Kiva
LA 4424	Wheatley Ridge	Rectangular	House 7
LA 127260	Wind Mountain	Rectangular	House Y
LA 127260	Wind Mountain	Rectangular	House U
LA 127260	Wind Mountain	Rectangular	House XX
LA 3099	WS Ranch	Rectangular	Kiva C
LA 3274		Rectangular	Xxx
LA 18888	Beauregard	Square	Structure 1
LA 6083	Gallita Springs	Square	Feature 38

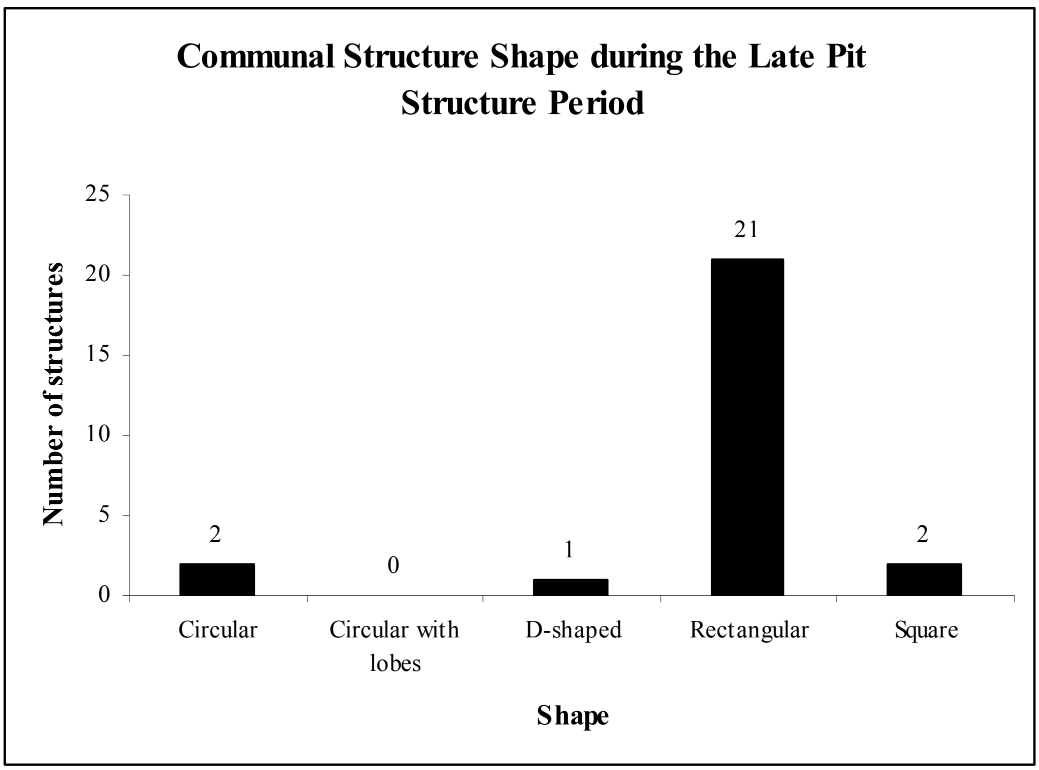


Figure 5.32. Communal Structure Shapes during the LPS Period.

The two Nantack communal structures are not contemporary and are the same shape and at least two of the three LPS period communal structures identified at NAN and Swarts are contemporary, and all of them are rectangular. While frequency data from these sites provide evidence for aggregation, shape data, provide contradictory support for integration at these sites. Redundancy in shape choice may indicate a degree of integration across time. As was previously stated, shape data may be largely time dependent and may in fact not provide a great deal of evidence specific to issues of aggregation and/or integration.

NAN and Swarts ruins each have three LPS period rectangular communal structures. At NAN, 43 replaced structures 52 and 91 at some point during the LPS period. The fact that all of these structures are rectangular suggests some degree of integration at the site, which appears to have culminated in the abandonment of two structures in favor of a single communal structure at the site. The three Swarts communal structures, Rooms W, AE, and 2 provide evidence similar to that found at NAN. All three structures are rectangular and during the LPS period, AE replaced W and 2. LPS period shape data for the Swarts structures provide evidence for some degree of social integration at the site, which may have been an overarching presence given the fact that even when there are multiple communal structures they are all the same shape.

As was the case during the MPS period, chronometric data for the four Wind Mountain communal structures provide evidence that these structures were contemporary (Woosley and McIntyre 1996). One of the structures is D-shaped and the other three are rectangular. There is some variation in communal structure shape at Wind Mountain during the LPS period, which provides additional evidence for population aggregation at the site.

Pueblo Period

The Early Pueblo Period (A.D. 1000 to 1150). Shape data were available for 47 EP period communal structures (Figure 5.34). Shape is relatively consistent between the LPS and EP periods (Table 5.36). Circular communal structures continue to be relatively rare, while rectangular communal structures are the most common. Square communal structures are also identified at EP period sites (Figure 5.34). During this period, communal structures are frequently attached to masonry rooms. Twelve EP period sites have two communal structures. There are three communal structures, for which shape data are available, at Carter Ranch pueblo. Both NAN and Wind Mountain have five EP period communal structures.

At Pine Creek, there are two EP period communal structures, Rooms 1 and 4 (Anyon and LeBlanc 1980). Room 1 is square and Room 4 is rectangular, both are spatially separated from other structures at the site. The two structures can only be dated between A.D. 1000 and 1150 and it is not clear if the two structures were contemporary. As a result, shape data alone for the two structures provides evidence for aggregation at the site. In the absence of specific chronometric data, however it is not possible to say whether this was the case at Pine Creek.

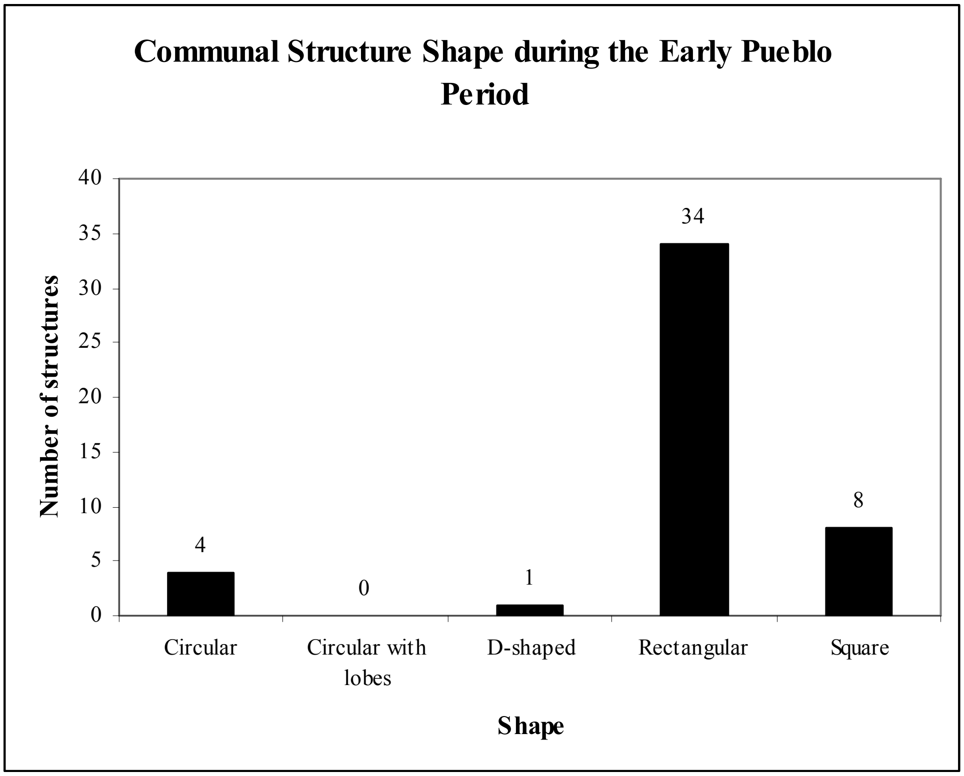


Figure 5.34. Communal Structure Shapes during the EP Period.

Table 5.36. Communal Structure Shapes during the EP Period.

Site Number	Site Name	Structure Number	Structure Shape
	Carter Ranch	Great Kiva	Circular
LA 11075	Gatton's Park		Circular
LA 54955	TJ		Circular
AZ P:16:2	Tla Kii	Kiva 1	Circular
	Carter Ranch	Kiva 1	D-shaped
	Carter Ranch	Room 16	Rectangular
W:6:5	Dry Prong	Kiva 1	Rectangular
LA 78963	Elk Ridge	Kiva	Rectangular
LA 635	Galaz	Kiva 107	Rectangular
LA 635	Galaz	73	Rectangular
LA 6536	Graveyard Point	Feature 8	Rectangular
LA 6536	Graveyard Point	Feature 9	Rectangular
LA 33642	Jennie Riley Stallworth	Great Kiva	Rectangular
LA 33642	Jennie Riley Stallworth		Rectangular
LA 676	Mattocks	Unit 410	Rectangular
LA 676	Mattocks	Kiva 48	Rectangular
LA 2465	NAN	58	Rectangular

Table 5.36 continued.

Site Number	Site Name	Structure Number	Structure Shape
LA 2465	NAN	57	Rectangular
LA 2465	NAN	18	Rectangular
LA 3639	Pine Creek	Room 4	Rectangular
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Pithouse/Kiva 1	Rectangular
LA 5412	Redrock		Rectangular
LA 1118	Rock House	Feature 8	Rectangular
LA 1118	Rock House	Feature 7	Rectangular
LA 5421	Saige-McFarland	Pithouse 3	Rectangular
LA 66782	Sand Flat		Rectangular
AZ P:16:2	Tla Kii	Kiva 2	Rectangular
LA 16241	Treasure Hill	Room 6	Rectangular
LA 16241	Treasure Hill	Room 8	Rectangular
LA 8675	West Fork	10	Rectangular
LA 8675	West Fork	6	Rectangular
LA 127260	Wind Mountain	House P2	Rectangular
LA 127260	Wind Mountain	Room 3	Rectangular
LA 127260	Wind Mountain	Room 15	Rectangular
LA 127260	Wind Mountain	Room 7	Rectangular
LA 127260	Wind Mountain	House V	Rectangular
LA 2454	Woodrow		Rectangular
LA 2454	Woodrow		Rectangular
LA 66686		Kiva	Rectangular
LA 6538	Diablo	Feature 7	Square
LA 6783	Dinwiddie	Feature 14	Square
LA 6783	Dinwiddie	Feature 11	Square
LA 2465	NAN	39	Square
LA 2465	NAN	45	Square
LA 3639	Pine Creek	Room 1	Square
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	Pithouse/Kiva 2	Square
LA 18903	Wheaton Smith	Unit 34	Square

The two EP period communal structures at Treasure Hill are both rectangular. Rooms 6 and 8 are associated with two of the site's roomblocks and are approximately the same size (Anyon and LeBlanc 1980). Researchers have suggested that Rooms 6 and

8 were contemporary, which indicates some degree of aggregation at the site. The fact that the two structures are the same shape is interesting and may indicate some degree of standardization in construction. This standardization may suggest integration within an aggregated site during the EP period.

Features 7 and 8 are the two EP period Rock House ruin communal structures (Anyon and LeBlanc 1980). As was the case at Treasure Hill, both Rock House structures are rectangular. Unlike the previously discussed site however, Features 7 and 8 were not coeval. The rectangular Feature 7 was constructed initially attached to the site's only roomblock. Feature 7 was subsequently abandoned and remodeled into the structure referred to as Feature 8. The shape data for Features 7 and 8, when combined with chronometric data provide evidence for social integration at the site.

At West Fork, structures 6 and 10 date to the EP period. Like many communal structures that date to this period, both West Fork structures are rectangular (Anyon and LeBlanc 1980; Ice 1968). A ceramic date range of A.D. 1000 to 1150 is the only one available for structures 6 and 10 and it is not clear if these structures were contemporary. Given the lack of chronometric dates for the West Fork structures, shape data do not contribute additional information about aggregation or integration.

Structure 73 and Kiva 107 are two rectangular EP period communal structures from Galaz (Anyon and LeBlanc 1984). Structure 73 is also referred to as Parrot Kiva, because a macaw was placed into the structure upon its abandonment and destruction. Based on the ceramic dates and construction evidence available for these two structures, it appears that Parrot Kiva was constructed prior to Kiva 107, perhaps during the latter part of the LPS period (Anyon and LeBlanc 1984:134). However, during the EP period Kiva 107 was built. Therefore, the two structures were both were used during the EP period. The longevity of Kiva 107's use is supported by the fact that it was remodeled twice during the EP period (Anyon and LeBlanc 1984:135-137). Shape data for the two structures suggest that while integration may have been emphasized during the EP period, given the presence of an initial communal structure. Construction of a second structure suggests aggregation, however, the fact that they are both rectangular suggest some degree of integration at the site.

The two unnumbered EP period Woodrow ruin communal structures are both rectangular. The structures have not been subject to excavation and as a result, they can only be dated generally to the EP period. While the structures are the same shape and provide some evidence of integration (i.e., architectural standardization), lack of more specific chronometric data make it difficult to assess these data in terms of aggregation and integration.

At Pueblo Lillie Allen, Kivas 1 and 2 date to the EP period. Both structures are relatively small and Kiva 1 is rectangular, while Kiva 2 is square (Kayser 1971). Kayser's (1971) examinations of the two communal structures led him to conclude that the construction of Kiva 1 predated Kiva 2. At the same time, he also suggested that the two communal structures were used at the site simultaneously. Because there are two communal structures of different shapes, the two Pueblo Lillie Allen communal structures provide evidence for initial integration and the site and subsequent population aggregation during the EP period.

There are two EP period communal structures at Jennie Riley Stallworth. One is a rectangular Great Kiva and the other is an unnumbered rectangular structure. Accola and Neely (1980) provide a 100 year ceramic date range from A.D. 1000 to 1100 for the two structures. No more specific chronometric data were available for the two structures. While the presence of two structures at the site provides evidence for aggregation, the fact that both structures are rectangular may suggest some degree of EP period integration. Without more specific dates for the two Jennie Riley Stallworth communal structures, shape data do not contribute to our understanding of aggregation or integration at the site.

Features 8 and 9 are the two EP period Graveyard Point communal structures (Hammack 1966). Both structures are quite small and both are rectangular. Ceramic dates are the only ones available for the two EP period communal structures and so it is not possible to determine whether the two were contemporaneous. Given the shapes of the two structures, they may reflect some degree of integration at the site. However, if they are contemporary they reflect EP period population aggregation (Anyon and LeBlanc 1980).

In the Mimbres valley at the Mattocks ruin, there are two communal structures. Unit 410 is rectangular. Kiva 48, the second EP period communal structure, is also rectangular. Both of these structures are relatively small and each is associated with a roomblock at the site. Because Unit 410 and Kiva 48 are approximately the same size and are associated with two different parts of the site suggests that they were the physical manifestation of aggregation at Mattocks. However, it is unclear if these small structures are contemporary and the fact that they are the same shape may provide evidence for some degree of integration at the site in the form of architectural standardization.

There are two differently shaped EP period communal structures at Tla Kii. Kiva 1 is a circular structure and Kiva 2 is rectangular. The construction of Kiva 2 was never completed and Kiva 1 was the only communal structure actually built and used during the EP period. As a result, the very large, circular Kiva 1 provides evidence for social integration at Tla Kii during the EP period.

Dinwiddie has two EP period communal structures for which shape data are available. Features 7 and 14 are both square structures that are associated with specific areas of the site. Based on ceramic data collected during site excavations the site has been dated between A.D. 1032 and 1100 and the relative dates available for the structures do overlap (Anyon and LeBlanc 1980; Bussey 1972; Linse 1999a). There are two roomblocks at the Dinwiddie site, one eastern and one western (Anyon and LeBlanc 1980; Linse 1999a). The redundancy in shape is indicative of a social, economic, or ritual balance of power, or of architectural standardization (i.e., integration), while the presence of two contemporary communal structures suggests that aggregation occurred during the EP period.

There is a great deal of shape diversity among the three Carter Ranch communal structures. Kiva 1 is D-shaped, Room 16 is rectangular, and there is a circular Great Kiva. Construction and chronometric data for the Carter Ranch communal structures suggest that the Great Kiva was the first built at the site. The large circular structure was abandoned and destroyed before Kiva 1 and Room 16 were built. As a result, of these data and the shape diversity that exists at the site it appears that initial integration was replaced by aggregation.

At NAN Ranch, the five EP period communal structures, 18, 39, 45, 57, and 58, are square and rectangular. While not all of the structures are contemporary, as discussed in the frequency section, shape variation is present throughout the EP period at the site. Communal structure shape data from NAN therefore support the idea that aggregation occurred at the site.

All five of the Wind Mountain communal structures, Houses P2 and V and Rooms 3, 7, and 15, are rectangular. Shape standardization may provide evidence for integration at the site, even though chronometric, location, and size data suggest that aggregation occurred at the site. More specifically, consistency or redundancy in shape choice may provide evidence for architectural and/or community planning (i.e., integration).

Late Pueblo Period (A.D. 1150 to 1400). Shape data were available for 33 ELP period and 10 LLP period communal structures (Appendix II). An increase in architectural variation is documented for the LP period (A.D. 1150 to 1400). Circular (including oval) and rectangular structures are the most common shapes (Figures 5.35 and 5.36). More variation is present during the ELP period than during the LLP period (Figures 5.35 and 5.36) This increase in structure shape variation from the ELP period into the LLP provides evidence for aggregation during the early part of the ELP period and integration during the LLP period.

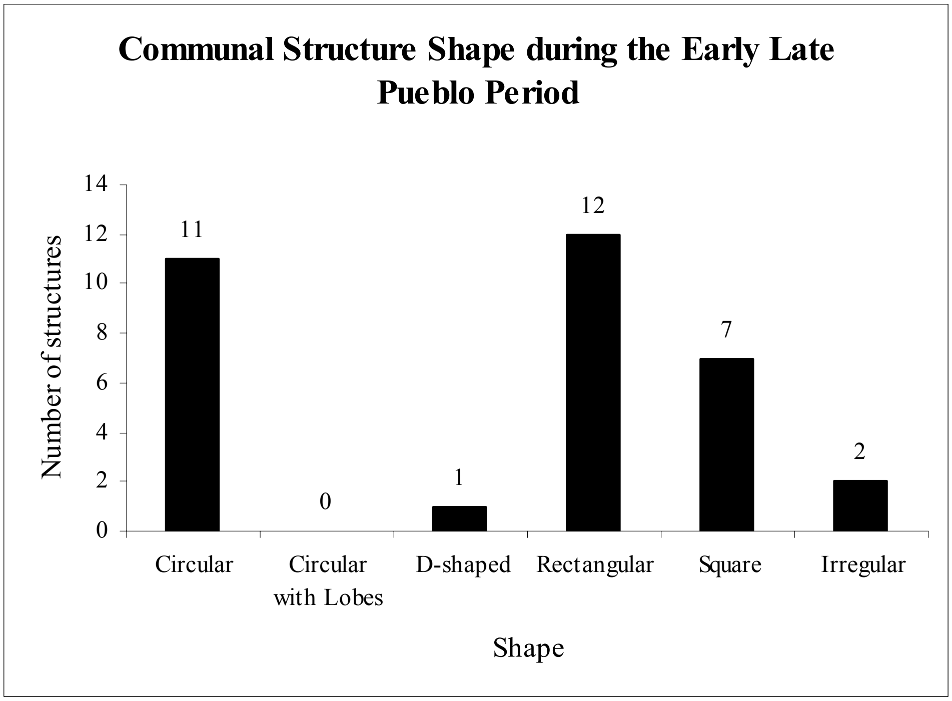


Figure 5.35. Communal Structure Shapes during the ELP Period.

Early Late Pueblo Period (A.D. 1150 to 1300). Circular and rectangular communal structures occur at almost the same frequency during the ELP period with D-shaped, and square shapes also present. Ten of the 33 structures for which shape data were available are the only structures at their ELP period site (Table 5.37). There are, however, several sites with multiple communal structures. Five ELP period sites, including Point of Pines, the Gila Cliff Dwellings, Higgins Flat, Chodistaas, and W:10:65, have two communal structures. Taylor Draw has three ELP period structures, Turkey Creek has four, and W:10:37 has five communal structures.

Table 5.37. Communal Structure Shapes during the ELP Period.

Site Number	Site Name	Structure Name	Structure Shape
LA 2949	Apache Creek	Great Kiva	Circular
LA 4026	Goesling Ranch		Circular
W:10:50	Point of Pines	Kiva 5	Circular
LA 1119	Small House North of Arroyo Seco		Circular
LA 6565	Taylor Draw	Feature 15	Circular
LA 6565	Taylor Draw	Feature 22	Circular
LA 6565	Taylor Draw	Feature 7	Circular
AZ W:9:123	Turkey Creek	Room 152-K1	Circular
LA 8682	Higgins Flat	Kiva 1	D-shaped
W:10:37		Kiva 5	Irregular
W:10:37		Kiva 4	Irregular
LA 15075	Montoya	Room 4	Oval
W:10:65		Kiva 2	Oval
W:10:65		Kiva 1	Oval
AZ P:14:24	Chodistaas	Room 2a	Rectangular
AZ P:14:24	Chodistaas	Room 18a	Rectangular
LA 68188	Fox Place		Rectangular
LA 4913	Gila Cliff Dwellings	Room 27	Rectangular
LA 8682	Higgins Flat	Great Kiva	Rectangular
AZ W:9:123	Turkey Creek	Great Kiva	Rectangular
AZ W:9:123	Turkey Creek	Room 251-K3	Rectangular
AZ W:9:123	Turkey Creek	Room 237-K2	Rectangular
LA 3274			Rectangular
W:10:37		Kiva 1	Rectangular
W:10:57		Kiva 1	Rectangular
LA 4913	Gila Cliff Dwellings	Room 17	Rectangular
AZ P:14:8	Grasshopper Spring	Room 7/Protokiva	Square
LA 467	Hulbert		Square
W:10:51	Point of Pines	Pithouse 13	Square
LA 8891	Schoolhouse Canyon	Kiva	Square
LA 2112	Smokey Bear/Block Lookout	Feature 4	Square
W:10:37		Kiva 3	Square
W:10:37		Kiva 2	Square

Frequency and size data for Point of Pines have been used to support the idea that social integration occurred at the site during the ELP period. The two communal structures at Point of Pines are different shapes, one is circular, and the other is square. Because the structures were not contemporary the shape data for this site do not provide additional information about aggregation or integration. Both of the Gila Cliff Dwellings communal structures are contemporary, rectangular, and are associated with different parts of the site. Because the two Gila Cliff Dwellings communal structures are the same shape, they provide evidence for some degree of integration (i.e., shape standardization) at this ELP period site.

Shape data from the two Higgins Flat communal structures provide evidence that initial aggregation at the site was later replaced by integration. Kiva 1 predates the Great Kiva and the two structures are different shapes. Kiva 1 is D-shaped and the Great Kiva is rectangular (Martin and Rinaldo 1950). The shape data alone do not provide additional support for or challenge conclusions concerning aggregation or integration. However, when combined with chronometric and other data, it does appear that aggregation was replaced by integration by the end of the site's occupational history. In terms of shape data independently, evidence for integration is that the smaller D-shape communal structure was replaced with a much larger rectangular Great Kiva.

As previously stated, the Chodistaas communal structures provide evidence that population aggregation occurred at the site during the ELP period. Shape data cannot contribute additional support for this conclusion, as both of the structures are rectangular, and therefore may reflect some degree of integration. Both of the W:10:65 communal structures are oval and dating for them is insufficient, as a result, while shape data may be used to suggest redundancy of shape during the period, they cannot provide definitive information about aggregation or integration at the site. Insufficient data also affects shape data results for the Taylor Draw site. The three ELP period structures at Taylor Draw are circular, and suggest some degree of integration however, the structures cannot be dated relative to one another.

Of the four Turkey Creek (Lowell 1991; R. Karl, personal communication) communal structures, three, Rooms 237-K2, 251-K3, and the Great Kiva, are rectangular and Room 152-K1 is circular. The largest structure, the Great Kiva, is centrally located. Again, the smaller structures are scattered throughout the site. Residents of Turkey Creek pueblo constructed the smaller structures at the beginning of the site's occupation (Lowell 1991). Later, they built the larger, rectangular Great Kiva. Given the initial communal structure shape variation, these data provide evidence for aggregation at the site upon its establishment. Construction of a Great Kiva suggests that an aggregated community made efforts to promote social integration during the later part of the ELP period. The variation in communal structure shape at Turkey Creek provides evidence for initial aggregation at the site and when combined with chronometric data support the idea that integration also occurred at the site.

There are five ELP period communal structures at W:10:37 (Olson 1959; Stone 2001). Chronometric data from the site provide insufficient evidence for the contemporaneity of the structures and as a result, these data alone do not provide evidence for either aggregation or integration at the site. Communal structure shape variation, however, does provide support for aggregation at the site. Two of the W:10:37 communal structures, Kivas 4 and 5, are irregularly shaped, Kivas 2 and 3 are square, and Kiva 1 is rectangular. The diversity in structure shape at W:10:37 can be used to demonstrate ELP period population aggregation at the site.

Late Late Pueblo Period (A.D. 1300 to 1450). Ten communal structures from six sites date to the LLP period (Figure 5.36). Two sites, W:10:47 and W:10:48 have a single rectangular communal structure. There are multiple LLP period communal structures at Point of Pines, W:10:52, and Grasshopper pueblo (Table 5.38). Data from these sites can be used in varying degrees to provide evidence for aggregation and integration during the LLP period. In some cases shape data compliment chronometric and other data, in other cases, shape data contradict existing data.

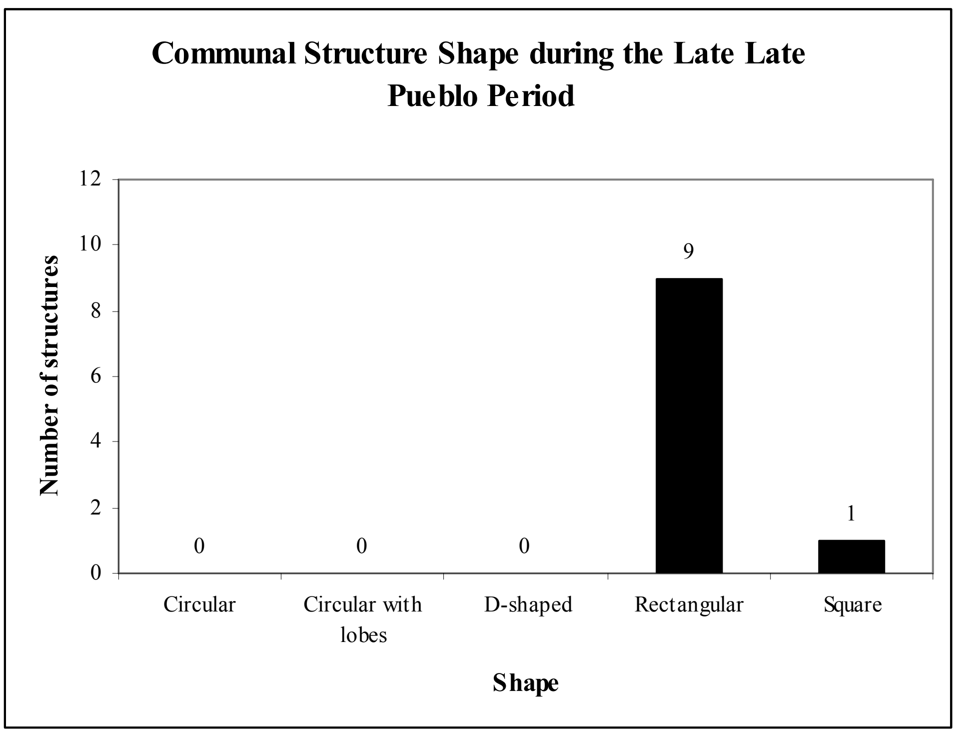


Figure 5.36. Communal Structure Shape during the LLP Period.

Table 5.38. Communal Structure Shapes during the LLP Period.

Site Number	Site Name	Structure Number	Structure Shape
LA 8780	Grasshopper	Great Kiva	Rectangular
LA 8780	Grasshopper	Room 341	Rectangular
LA 8780	Grasshopper	Room 246	Rectangular
LA 5793	Ormand	Room 79	Rectangular
W:10:50	Point of Pines	Kiva 1	Rectangular
W:10:47		Kiva 1	Rectangular
W:10:52		Kiva 1	Rectangular
W:10:52		Kiva 2	Rectangular
W:10:48		Kiva 1	Rectangular
W:10:50	Point of Pines	Kiva 2	Square

The two Point of Pines communal structures are different shapes, one being square and the other rectangular, however, the two are not contemporary. However, shape data does provide some evidence that the very large, 800-room community was integrated. The original rectangular Kiva 1 was modified into a larger, square communal structure, Kiva 2 with three internal rooms. The remodeling of a structure with four equal sides within which there are several rooms suggests an elaboration of an integrating communal structure. While the three internal rooms may reflect some degree of aggregation within the community, the fact that they situated within the walls of the only communal structure at the site may reflect a decision by three possibly autonomous groups to reinforce solidarity (i.e., integration).

Kivas 1 and 2, the two W:10:52 communal structures, were likely contemporary (Smiley 1952). However, because these two structures are both rectangular, shape data may provide evidence for integration. As previously discussed, the Grasshopper communal structures are also contemporary (Riggs 2003). All of the Grasshopper communal structures are rectangular. As was the case at W:10:52 the fact that the Grasshopper structures are contemporary provides evidence for population aggregation at the site. However, the shapes of these structures could be interpreted as providing evidence for social integration at the site. As stated at the beginning of the section, redundancy in shape may provide evidence for an overarching belief system, mandating communal structure shape. Shape similarity may also be indicative of a desire by members of an aggregated community to assimilate.

Communal Structure Shape: A Summary

Circular communal structures are found during most of the periods at Mogollon sites. During the EPS period, 86 percent of the structures are circular and 68 percent of these have lobes. At the same time, there is some variation during this early period. Shape variation continues into the MPS period and only 27 percent are circular during this period. The percent of circular communal structure drops to 8 percent during the LPS period and people living ion the Mogollon region begin to build many more rectangular structures than previously documented in the region. Eighty-one percent of LPS period communal structures are rectangular, which is a mirror image of shape diversity during the EPS period. During the EP period, the percent of rectangular structures drops to 72 percent, while the number of circular structures remains about the same. Square structures become more common during the EP period as well and account for 17 percent of the assemblage. The percent of circular communal structures increases from previous periods during the ELP period and are 25 percent of the assemblage. Thirty-six percent of ELP period communal structures are rectangular, which also marks a change from the LPS and EP periods. There is a great deal of diversity in ELP period communal structure shapes. This diversity does not continue into the LLP period when no circular communal structures are present and rectangular structures account for 90 percent of the assemblage.

Shape data provide varying degrees of support for aggregation and integration at Mogollon sites across time. In some cases, (e.g., Nantack, Gila Cliff Dwellings, and Wind Mountain) shape data contradict other data in terms of aggregation and integration. In other cases (e.g., Carter Ranch and NAN), shape data provide additional support for chronometric information and other . Shape data for Mogollon communal structures do provide some additional information about aggregation or integration in the region (Table 5.39).

Table 5.39. Sites with Evidence for Aggregation and/or Integration based on Communal Structure Shape Data.

Period	Evidence for aggregation	Evidence for integration	Evidence for aggregation then integration	Evidence for integration then aggregation	Insufficient data
EPS	(1) Three Circle	(15) Bear, Bluff, Cuchillo, Galaz, Harris, Lagoon, McAnally, Mogollon, Old Town, Promotory, Ridout Locus, Saige-McFarland, SU, Winn Canyon, LA 19075			(2) Crooked Ridge, Diablo
MPS	(1) Wind Mountain	(7) Black's Bluff, Gallita Springs, Harris, Mogollon, Old Town, Turkey Foot Ridge, Turquoise Ridge			
LPS	(1) Wind Mountain	(16) Beauregard, Bradsby, Cooney Ranch #1, Galaz, Gallita Springs, Harris, Lake Roberts Vista, NAN, Nantack, Old Town, Sawmill, Starkweather, SU, Wheatley Ridge, WS Ranch, LA 3274	(1) Swarts		
EP	(1) NAN	(16) Diablo, Dinwiddie, Dry Prong, Elk Ridge, Galaz, Gatton's Park, Redrock, Rock House, Saige-McFarland, Sand Flat, TJ, Tla Kii, Treasure Hill, Wheaton Smith, Wind Mountain, LA 66686		(2) Carter Ranch, Pueblo Lillie Allen	(6) Graveyard Point, Pine Creek, Jennie Riley Stallworth, Mattocks, West Fork, Woodrow
ELP	(2) Chodistaas, W:10:37	(11) Apache Creek, Fox Place, Gila Cliff Dwellings, Goesling Ranch, Grasshopper Spring, Hulbert, Montoya, Schoolhouse Canyon, Smokey Bear, W:10:57, W:10:65	(2) Higgins Flat, Turkey Creek		(2) Taylor Draw, Point of Pines
LLP		(6) Grasshopper, Ormand, Point of Pines, W:10:47, W:10:48, W:10:52			

Communal Structure Hearths

One interesting note in the analysis of internal communal structure features is that it revealed that 56 percent of all communal structure hearths (67 of 119) in the database are circular or oval (Figure 5.37) (see Creel and Anyon 2003 for a similar discussion).. A great deal of variation is found in the remaining 44 percent. Communal structure variation is consistent across time, although the number of hearths increases during the Pueblo period (Figures 5.38, 5.39, 5.40, 5.41, 5.42, and 5.43). The importance of hearth diversity as it relates to issues of aggregation and integration is discussed below.

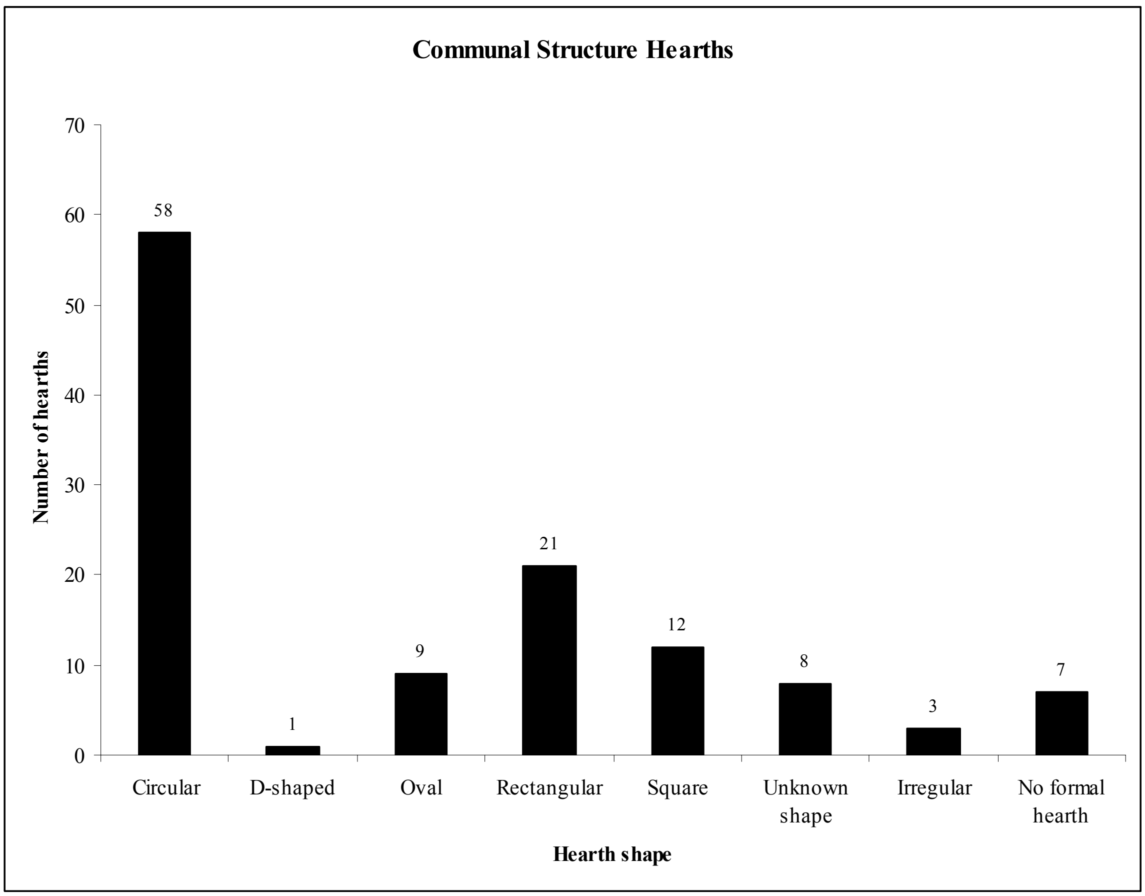
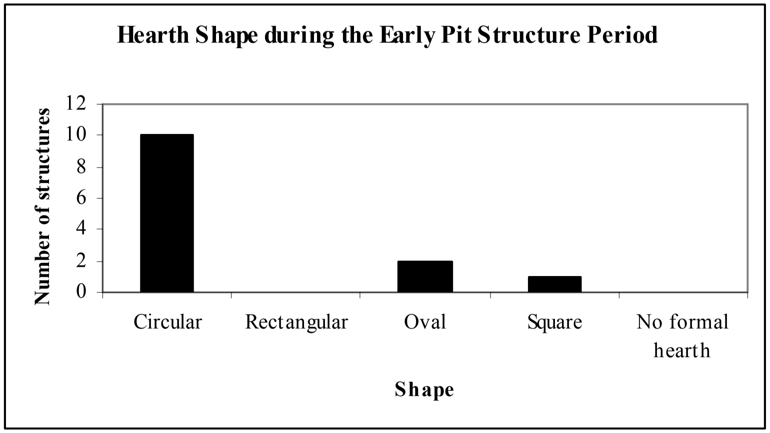
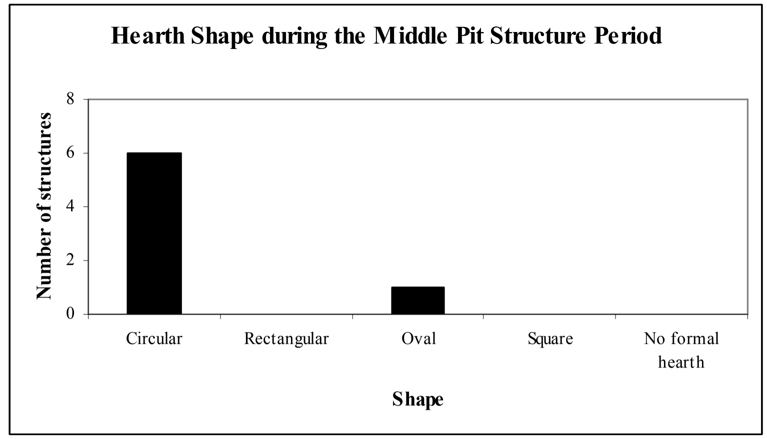
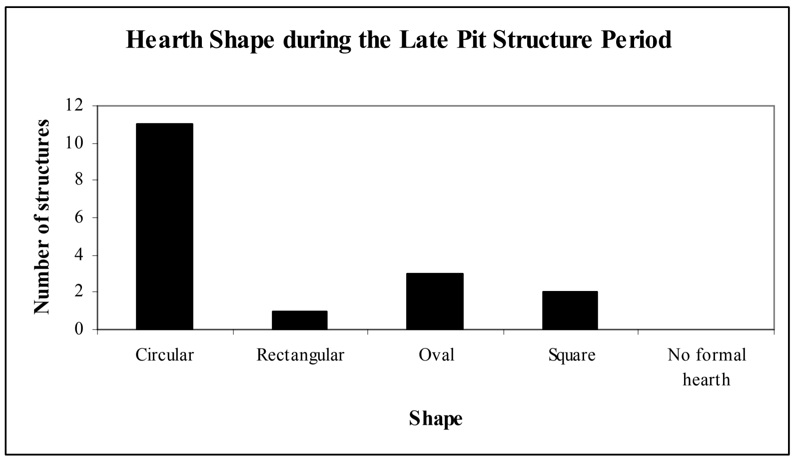


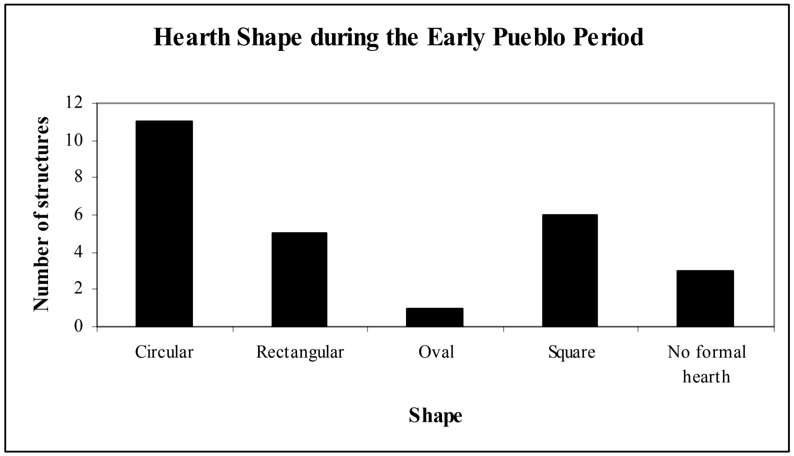
Figure 5.37. A General Overview of Communal Structure Hearth Shape.

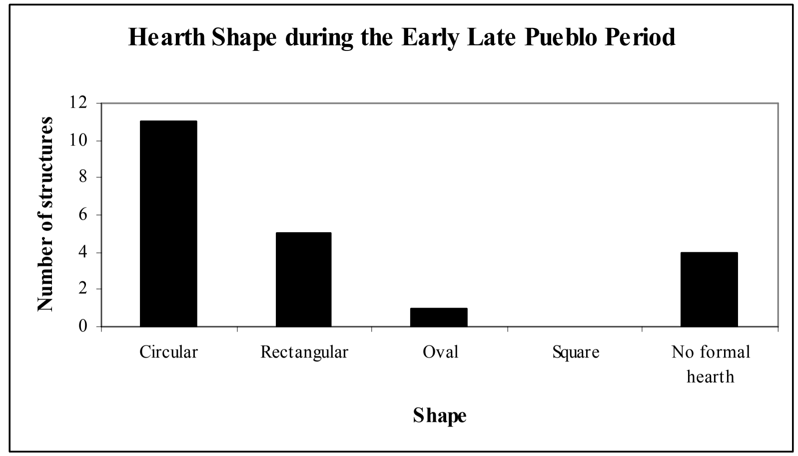


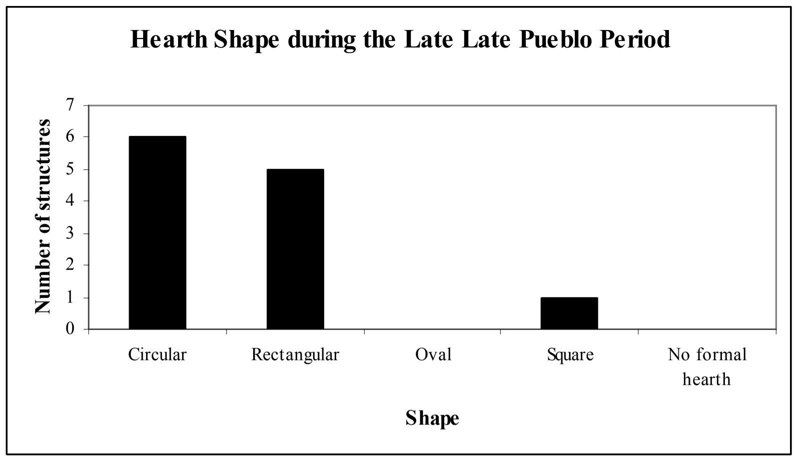




Figures 5.38, 5.39, and 5.40. Hearth Shape during the EPS, MPS, and LPS Periods. D-shaped, unknown shape, and irregular hearths are included in Figure 5.37, but no hearths of these three shape categories are dated to specific periods.







Figures 5.41, 5.42, and 5.43. Hearth Shape during the EP, ELP, and LLP Periods. D-shaped, unknown shape, and irregular hearths are included in Figure 5.37, but no hearths of these three shape categories are dated to specific periods.

I was also interested in the relationship between communal structure shape and hearth shape (Figure 5.44). The analysis of communal structure hearths provides evidence that hearth shape changes through time, as does communal structure shape. In this sample, almost all of the EPS period hearths in the assemblage are circular (Figure 5.38). During the MPS period, all of the communal structure hearths are circular (Figure 5.39). Hearth shape variation increases during the LPS period when circular, square, oval, and rectangular hearths are constructed. This variation continues into the EP period and several communal structures dating to this period have no formal hearth. There is a slight decrease in variation during the ELP period and square communal structures disappear from the assemblage all together. During the LLP period, circular and rectangular hearths are found in almost equal numbers in communal structures.

Hearth shape may be time dependent as suggested by some archaeologists (Creel and Anyon 2003; Diehl and LeBlanc 2001). However, the fact that diversity is present may provide evidence for regional aggregation, in that people start to use all shapes at the same time (i.e., LPS period). Ultimately, communal structure hearth shape is somewhat useful as a measure of aggregation and integration, and provides some supporting evidence for these phenomena in the Mogollon region as a whole

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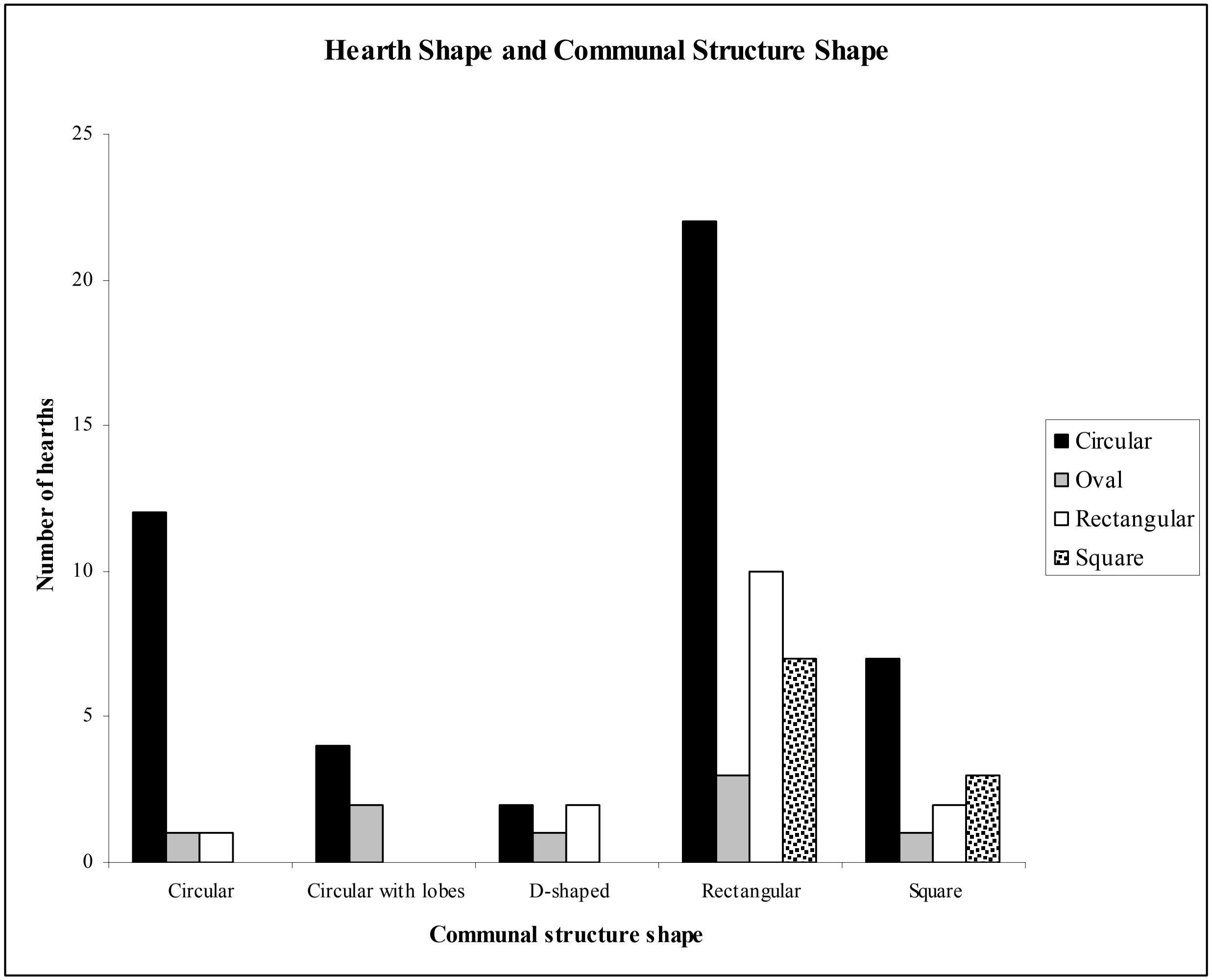

Figure 5.44. Communal Structure Shape and Hearth Shape.

Communal Structure Orientation

As was the case for features, initially, I thought that an analysis of communal structure orientation, based primarily on ramp entryways, would provide information about aggregation and integration. I proposed that redundancy in orientation in multiple contemporary communal structures would indicate integration, whereas variation would be indicative of aggregation. Orientation data were available for 136 of the Appendix II communal structures (Figure 5.45), with specific dates available for 126 structures. After completing an initial analysis of structure orientation, I found that more than 68 percent of the communal structures in this database are oriented to the East or to the Southeast (Figure 5.45). Kang (1989:4) cites similar percentages in his study of Mogollon pit structures. Given this result, it was clear that my expectations summarized in Table 1.1 were not necessarily supported by the orientation data. However, in some cases communal structure orientation can be a useful measure of integration and aggregation. In other cases, orientation data appear to contradict other data. For example, at Wind Mountain there are nine communal structures dating from the MPS to the EP period (Woosley and McIntyre 1996). Seven of the nine Wind Mountain communal structures are oriented to the east (the other two are oriented to the northeast and the north), suggesting a redundancy in communal structure orientation not found in other characteristics of these structures.

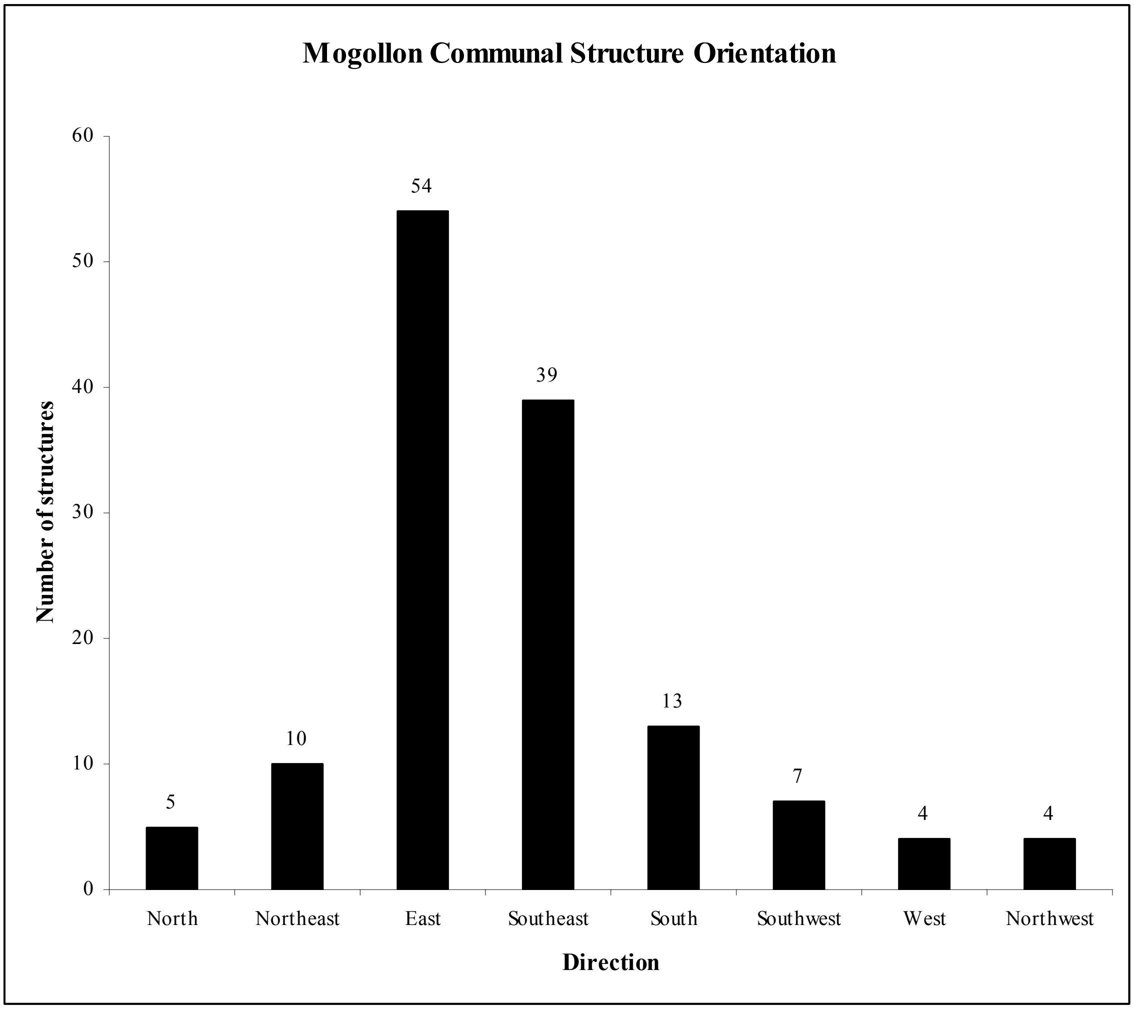

Figure 5.45. General Communal Structure Orientation.

Redundancy in orientation is likely related to a variety of factors. Communal structure orientation may be indicative of regional social mechanisms in that standardization may be promoted to emphasize group identification at a regional scale. However, many pit structures used for habitation purposes are oriented to the east as well. Therefore, orientation could be related to a need to maximize or minimize the amount of sunlight/thermal energy in a particular room. In his study of thermal energy, Kang (1989) found that east-facing structures maximize solar energy, particularly during cool morning hours. It is also possible that orientation choice is related to overarching beliefs, which would supersede other alternatives (Kang 1989:6). As previously stated, there is some variation in communal structure orientation.

As was the case with features, there are a few examples for which structure orientation provides supporting evidence for aggregation and/or integration at a site. Sites with multiple communal structures with varying orientations will provide evidence for aggregation and sites with multiple communal structures dating to several periods with consistency in orientation will provide support for social integration.

Pit Structure Period

Early Pit Structure Period. During the EPS period, 19 of the 23 communal structures for which orientation data are available are oriented to the east or the southeast (Figure 5.46). Diablo, Three Circle, and Crooked Ridge all have two communal structures dating to the EPS period. However, both of the structures as Diablo and Three Circle are oriented to the east (Appendix II). At Crooked Ridge, structure 19, one of the EPS period communal structures, is oriented to the east, while the other, pithouse 9, is oriented to the southwest. The two Three Circle communal structures are contemporary and therefore appear to provide evidence for EPS period aggregation, however the fact that both structures are oriented in the same direction may provide some evidence for an overarching architectural standard at the site. Chronometric data from Crooked Ridge and Diablo were insufficient. Therefore, while the orientations of the two structures at Crooked Ridge do vary and therefore may provide evidence for aggregation, it is difficult to assess this because it is unclear if the structures were contemporary.

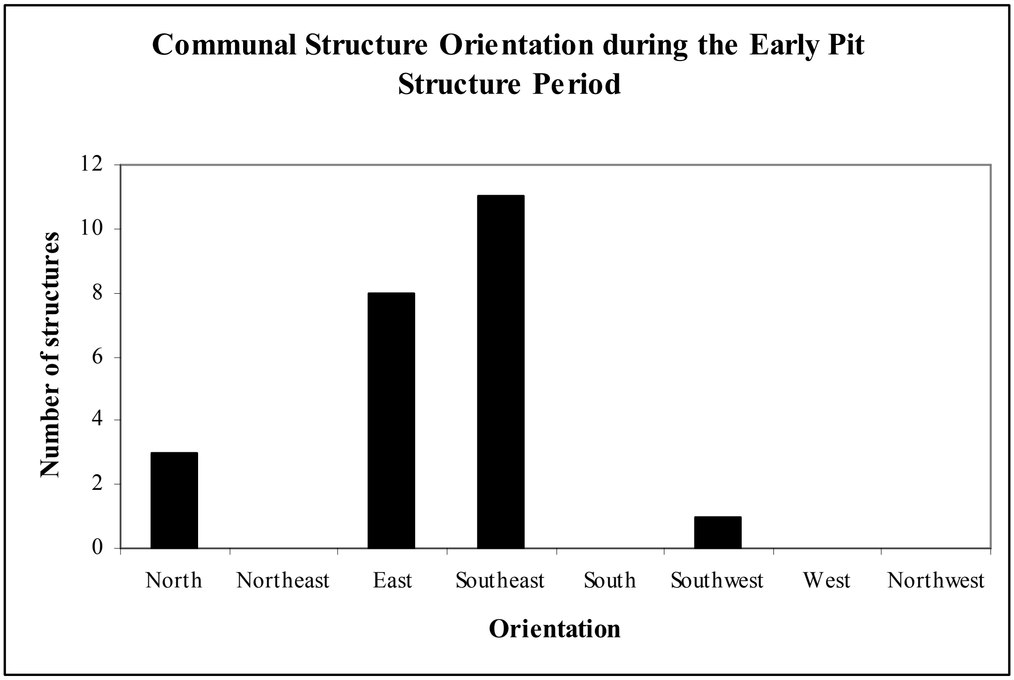

Figure 5.46. Communal Structure Orientation during the EPS Period.

EPS period communal structure orientation data from specific sites does not provide information about aggregation in the Mogollon region. The fact that there is variation, as opposed to standardization, may suggest some degree aggregation in the region during the EPS period.

Middle Pit Structure Period. Communal structure orientation during the MPS period is quite similar to that seen during the EPS period (Figure 5.47). Again, a majority of 10 MPS period communal structures are oriented to the southeast and east with a few structures oriented in other directions (Figure 5.47 and Appendix II). Wind Mountain and Harris have multiple MPS period communal structures; Wind Mountain has three and Harris has two. The two Harris communal structures were not contemporary and as a result do not provide information about aggregation at the site. At Wind Mountain, it appears that the three MPS period communal structures were contemporary and there is some orientation variation. House O's orientation is only given as "east by Woosley and McIntyre (1996). House AK is oriented at 15 degrees and House AB orientation is 117 degree (Woosley and McIntyre 1996). The variation in these three structures provides support for aggregation in that there is no orientation standardization at the site. MPS period communal structure orientation data is quite similar to that seen during the EPS period and does not provide a great deal of information about aggregation.

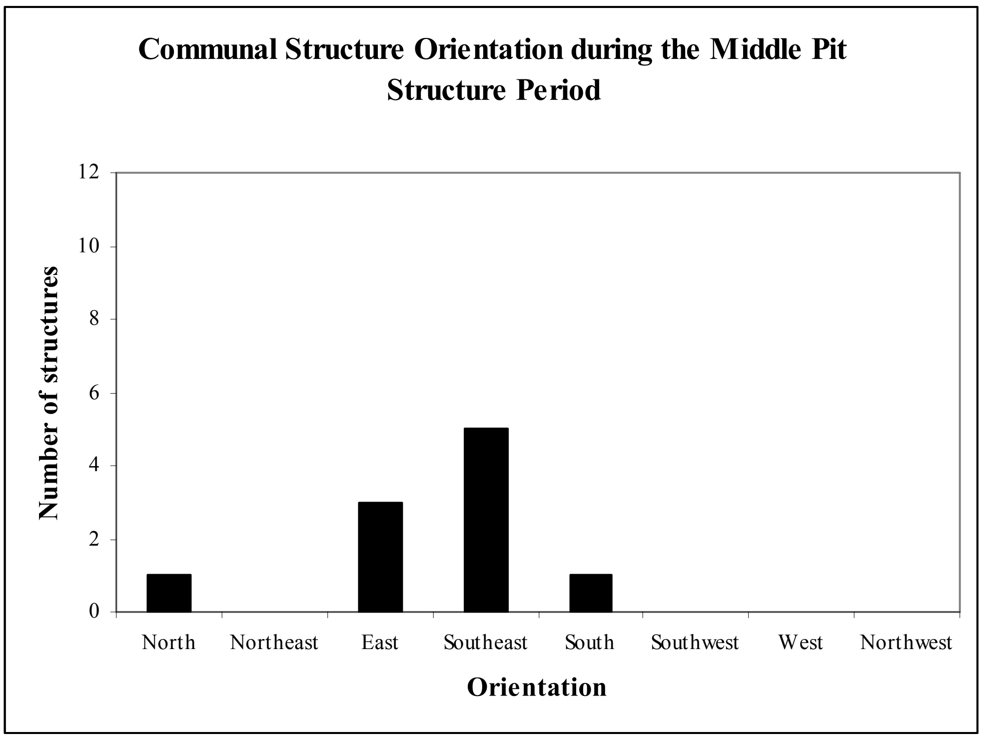

Figure 5.47. Communal Structure Orientation during the MPS Period.

Late Pit Structure Period. During the LPS period, there is an increase in communal structure orientation. While a majority of structures is oriented to the east and southeast, some structures are oriented to the north, northeast, south, and west (Figure 5.48). There is also an increase in the sample size for this period; orientation data are available for 25 LPS period communal structures (Appendix II). NAN, Nantack, Swarts, and Wind Mountain all have multiple LPS period communal structures for which orientation data are available.

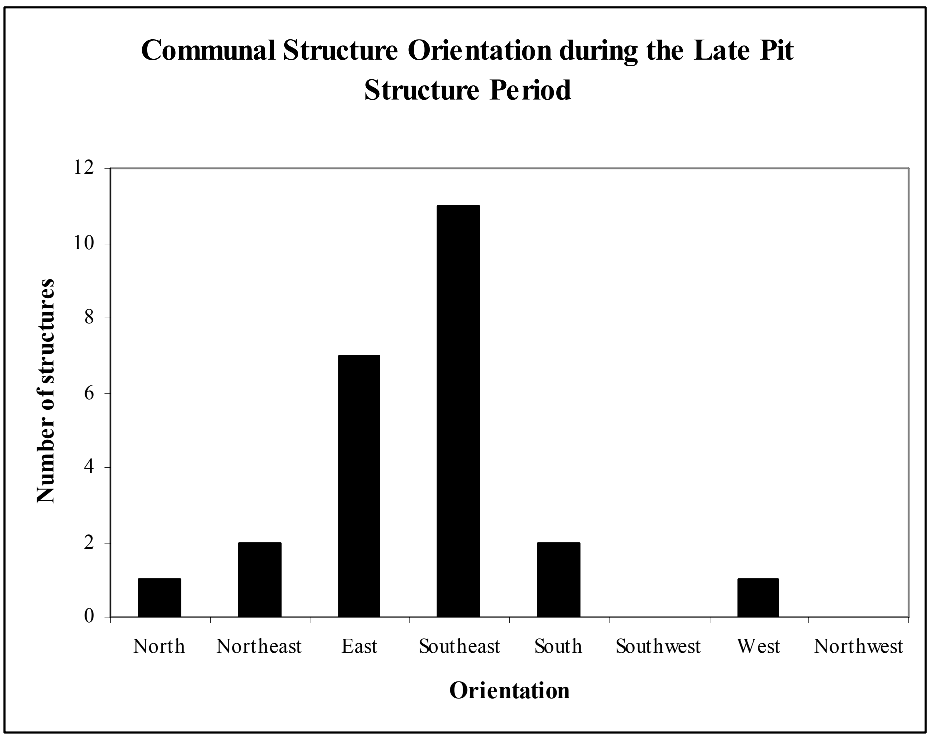

Figure 5.48. Communal Structure Orientation during the LPS Period.

Two LPS period communal structures were identified at Nantack village. However, the two structures were not contemporary and as a result, orientation data do not provide additional information about aggregation at the site. At NAN ranch two of the three LPS period communal structures were contemporary and were ultimately replaced by a third structure. Structures 52 and 91 were coeval and varied in their orientations. Structure 52 is oriented to the southeast at 133 degrees and structure 92 was oriented to the east. This structure variation suggests some degree of aggregation at the site. The two structures were subsequently replaced by structure 43, which was also oriented to the east somewhere between 80 and 100 degrees (Burden 2001; Shafer 2003). Orientation data for NAN's communal structures provides evidence for early PS period aggregation, which was replaced by social integration manifested in the form of a communal structure oriented to the east.

At Wind Mountain, orientation data are available for Houses XX, U, X, and Y. House XX has a northeastern orientation of 66 degrees, House U has an orientation of 85 degrees, House X is oriented to the east-southeast at 102 degrees, and House Y is oriented to the south with a 188 degree orientation. Because these structures vary in their orientation from northeast to south, they do provide evidence of some degree of aggregation at the site during the LPS period.

As was the case during the EPS and MPS periods, structure orientation does not provide a great deal of information about aggregation and/or integration. However, data for the LPS period provided more information than the previous periods. These data also contributes evidence for an increase in general communal structure orientation, these data can be used to support the idea that population aggregation increased in the Mogollon region during the LPS period.

Pueblo Period

Early Pueblo Period. Orientation data were available for 36 EP period communal structures (Figure 5.49). Tla Kii, Carter Ranch, Wind Mountain, Woodrow, Pueblo Lillie Allen, and Dinwiddie have multiple communal structures oriented in the same direction (Appendix II). These structures provide evidence for some degree of integration or at least some degree of architectural standardization at these six EP period sites. At the Graveyard Point, Galaz, West Fork, Mattocks, Rock House, Treasure Hill, and Pine Creek, have two EP period communal structures oriented in different directions. Because it is not clear if the Graveyard Point, West Fork, Mattocks, and Pine Creek structures were contemporary it is not possible to discuss the orientation of these structures as related to issues of aggregation and integration.

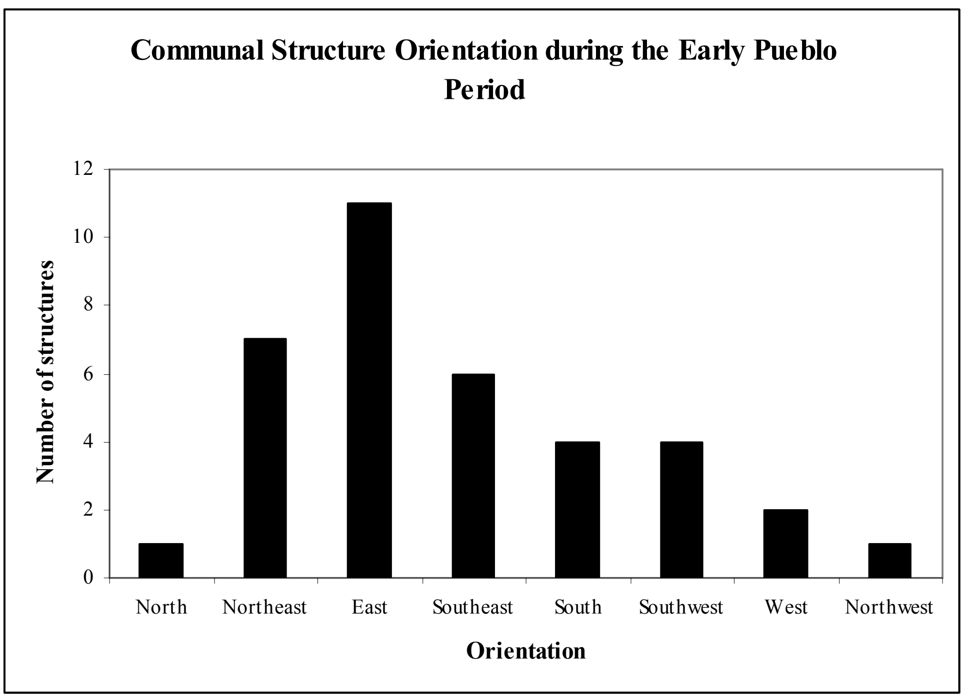

Figure 5.49. Communal Structure Orientation during the EP Period.

Structure 73 and Kiva 107 at Galaz are contemporary. Structure 73 is oriented to the east, while Kiva 107 is oriented to the northeast. Orientation variation at Galaz suggests some degree of aggregation. At Rock House, the southwest oriented Feature 8 replaced the northeast oriented Feature 7 during the EP period. Because the Rock House communal structures are not coeval they provide evidence for integration at the site, the variation in orientation is curious because at an integrated site one would expect to find consistency. It is possible that at Rock House two aggregated communities were present, but in an effort to promote integration at the site only one of the communities maintained the communal structure. Rooms 6 and 8 at Treasure Hill were contemporary and Room 6 is oriented to the south while Room 8 is oriented to the west. Because the structures were contemporary, and vary in their orientation, they do provide evidence for aggregation at this EP period site.

Structures 39, 45, 58, 57, and 18 at NAN date to the EP period and are included in the orientation analysis. Three of the structures are oriented to the northeast/southwest and two are oriented to the east. Not all of these structures were coeval. Structures 39, 18 and 58 were contemporary as were 45 and 58. Structure 57, which is oriented to the northeast/southwest, was destroyed in a fire and structure 18, oriented in the same direction was built atop the destroyed structure. When 18 was subsequently destroyed, structure 45, oriented to the east, was built atop it. The presence of two communal structure orientations and variation from structure to structure across time suggests some degree of aggregation at the site during the EP period.

Late Pueblo Period.

As was the case during earlier periods and eastern or southeastern orientation continues to be the preference for Mogollon communal structures, although there is some variation present.

Early Late Pueblo Period. Orientation data are available for 24 ELP period communal structures (Figure 5.50). Multiple communal structures with available orientation data are identified at six sites. The Hough site, Taylor Draw, Chodistaas, and the Gila Cliff Dwellings all have two structures, while Higgins Flat and Turkey Creek have three and there are five at W:10:37 (Appendix II).

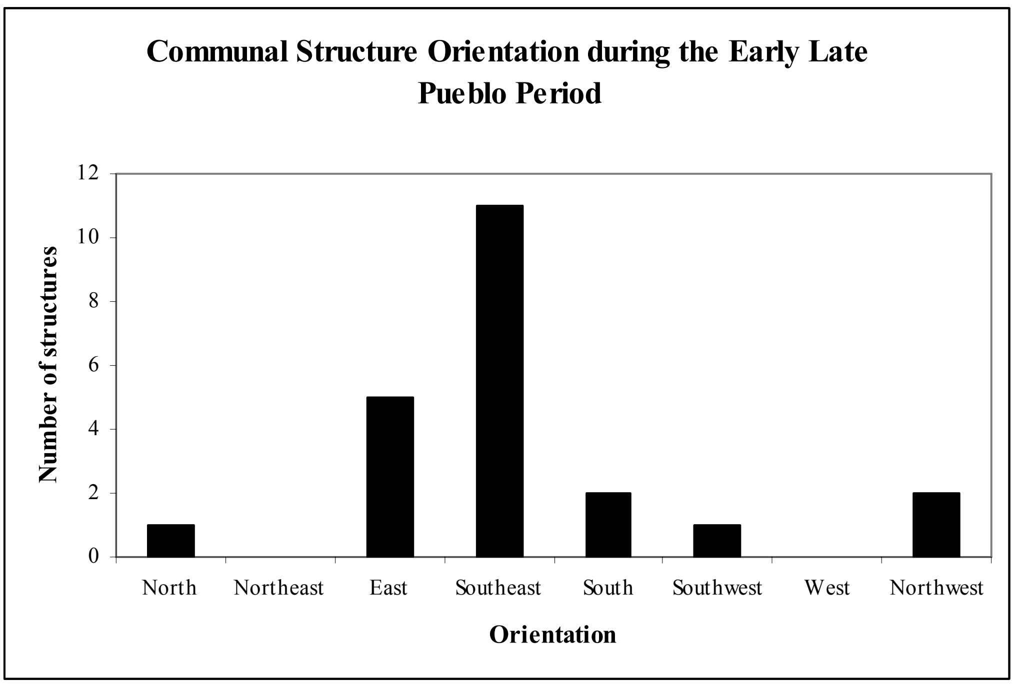

Figure 5.50. Communal Structure Orientation during the ELP Period.

All of the Hough, Chodistaas, Gila Cliff Dwellings, and Turkey Creek are oriented to the southeast (Figure 5.50 and Appendix II). Redundancy in communal structure orientation within these sites suggests some degree of integration, even in cases where the communal structures are contemporary and appear to reflect aggregation (e.g., Chodistaas and the Gila Cliff Dwellings). Communal structure orientation variation is however present at Taylor Draw, Higgins Flat, and W:10:37.

There are two communal structures at Jornada Taylor Draw, Features 7 and 15. Feature 7 is oriented to the northwest, while 15 is oriented to the southwest. There are about 60 rooms and three communal structures at the site, although orientation data are available for only two of the three. It is not clear if the ELP period communal structures were coeval and as a result while orientation variation provides evidence for aggregation at the site it is not possible to definitively say that this is the case.

Orientation data are available for the three ELP period Higgins Flat communal structures, Kivas 1 and 2 and the Great Kiva. Kiva 1 and the Great Kiva are oriented to the southeast and Kiva 2 is oriented to the east. Kivas 1 and 2 were coeval and preceded the construction of the Great Kiva at the site. Orientation variation between the two coeval communal structures suggests aggregation initially occurred at the site. The replacement of these structures with the Great Kiva provides evidence for integration. Orientation data from Higgins Flat provide evidence for aggregation and subsequent integration.

Kivas 1, 2, 3, 4, and 5 date to the ELP period at the 40-room W:10:37. Kivas 2, 3, and 4 are oriented to the east, while Kivas 1 and 5 are oriented to the south. Orientation variation provides evidence for some degree of aggregation at the site because the structures were coeval.

Late Late Pueblo Period. Kivas 1 and 2 at Point of Pines are both oriented to the southeast providing evidence for integration at the site. Similarly, the three Grasshopper communal structures are oriented to the east, providing evidence for some degree of integration even at a site with other evidence for aggregation. The only LLP period site with two communal structures oriented in different directions is W:10:52. Kiva 1 is oriented to the east, while Kiva 2 is oriented to the southwest. It is unknown if the W:10:52 structures were coeval so it is not possible to state whether or not the structure variation present at the site reflects aggregation.

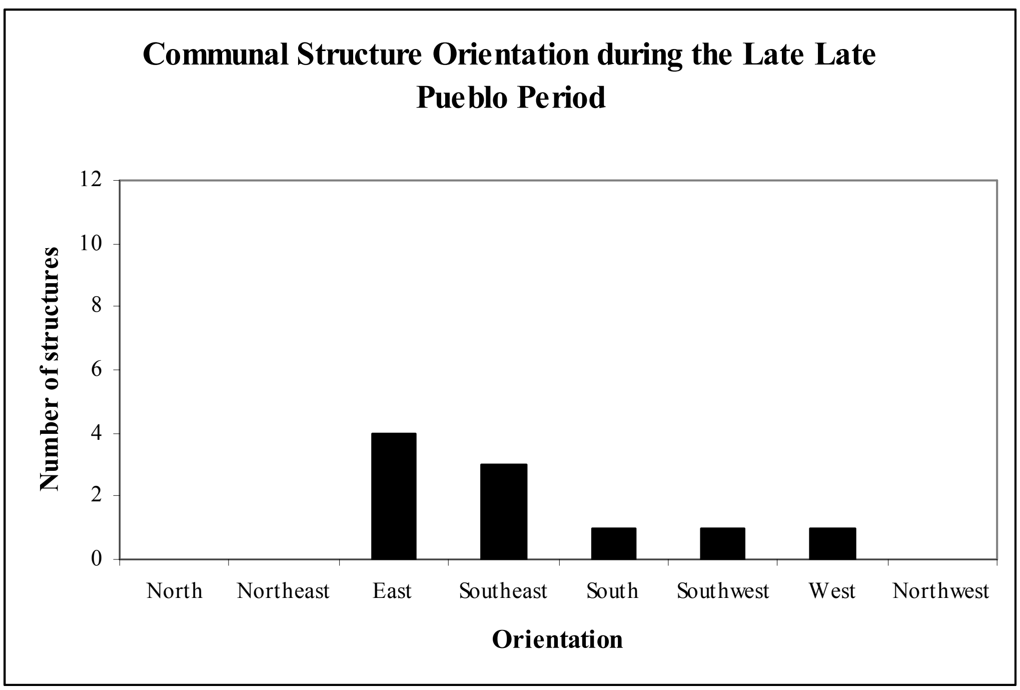

Figure 5.51. Communal Structure Orientation during the LLP Period.

As previously stated, the majority of the Appendix II sites are oriented to the east or southeast (Figure 5.45). While an eastern orientation is the most common, communal structure orientation does vary to some degree throughout the Pit Structure and Pueblo periods (Figures 5.46, 5.47, 5.48, 5.49, 5.50, and 5.51). Interestingly, we begin to see more ramps orientated in directions other than east and southeast during the LPS and EP periods (Figures 5.48 and 5.49). During the EP period, the most communal structure orientation variation occurs (Figure 5.49). However, some degree of variation continues through the ELP and LLP periods (Figures 5.50 and 5.51).

Given the results of this limited analysis of communal structure orientation, an eastern or southeastern orientation appears to have been the preference for residents of the Mogollon region. However, a great deal of variation does exist, and may reflect some degree of population aggregation across all periods. Variation may also be a result of a lack of standardization, thus also supporting the contention that aggregation occurred throughout the Mogollon region from the EPS period to the LLP period. However, orientation may simply not be a useful measure of aggregation and integration.

Wall Construction Technique

Construction data, more specifically, building materials, were collected for the communal structures included in this analysis to provide information about aggregation and integration in Mogollon communities (Appendix II; Table 1.1). To summarize briefly the expectations outlined in Table 1.1, I propose that redundancy across time or at the same time within sites in the construction techniques used to erect communal structures would reflect integration. Variation in wall construction materials for contemporary communal structures at a single site is indicative population aggregation.

Construction data were available for 78 of the Appendix II communal structures, and specific dates were available for 73 of those structures (Figure 5.52). I used data reported by researchers in published and unpublished reports, articles, and field notes. The five categories reported were adobe, bermed, earthen, masonry, and adobe and masonry (Figure 5.52).

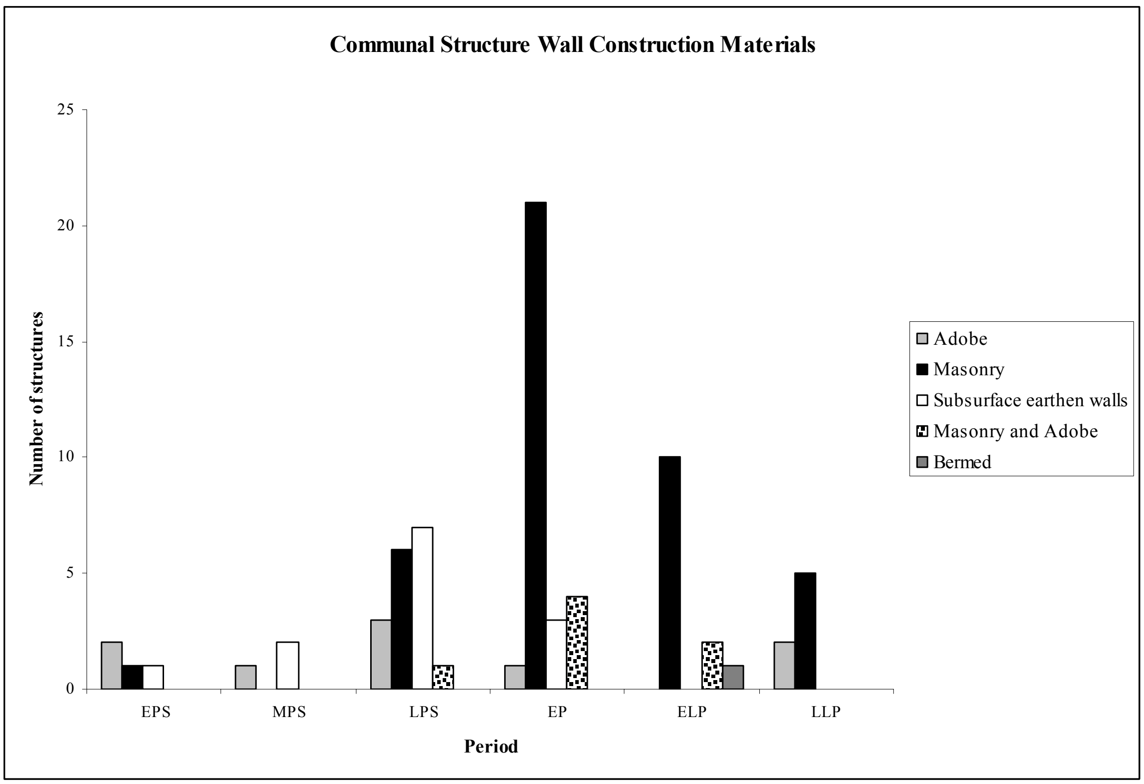

Figure 5.52. Communal Structure Wall Construction Materials by Period.

Adobe walls refer to those walls constructed from adobe itself, not adobe plaster. Bermed wall consist of mounded or banked earth. Earthen walls are those identified in subterranean structures that have been excavated into the natural soils and bedrock. Earthen walls can be plastered or unplastered. The materials used to construct masonry walls vary from place to place depending on resource availability, these walls may also be plastered. Adobe and masonry walls are those constructed with a combination of the two materials. While adobe and masonry walls are the most common across time, there is some variation that may be related to issues of aggregation and integration.

Figures 5.53 and 5.54 illustrate variation in communal structure wall construction materials from the Pit Structure to Pueblo periods. One of the most obvious differences in communal structures from the Pit Structure to Pueblo periods is the presence of a majority of subterranean structures during the former period (Figures 5.53 and 5.54). Some degree of variation exists across all periods, although relatively little material diversity is present during the MPS, ELP, and LLP periods. The most variation exists during the LPS and EP periods.

During three of the six periods, some form of masonry was the most common wall construction material (Figures 5.52, 5.53, and 5.54). Interestingly, masonry-walled communal structures are first evidenced at Saige-McFarland during the EPS period, several hundred years before the construction of masonry-walled above ground roomblocks. Masonry was not the only construction material used by people living in the Mogollon region and many structures in the sample were excavated into native clays or bedrock and subsequently plastered with adobe (Figure 5.52).

Except for recent information presented by Creel (1999c) and Anyon and Creel (2003), it is difficult to associate any particular construction techniques with communal structures. Creel (1999c) suggests that certain communal structures are constructed with a predetermined plan for destruction. Purposeful destruction of communal structures is discussed in a subsequent section. I did find in my analysis of construction materials that these data were not always useful measures of aggregation and/or integration. In many cases, sites with multiple communal structures had construction data for only one of the structures. In other cases, very general descriptions of the construction materials were provided by researchers, which made it difficult to discuss between structure variation, which was thought to provide evidence for aggregation and/or integration.

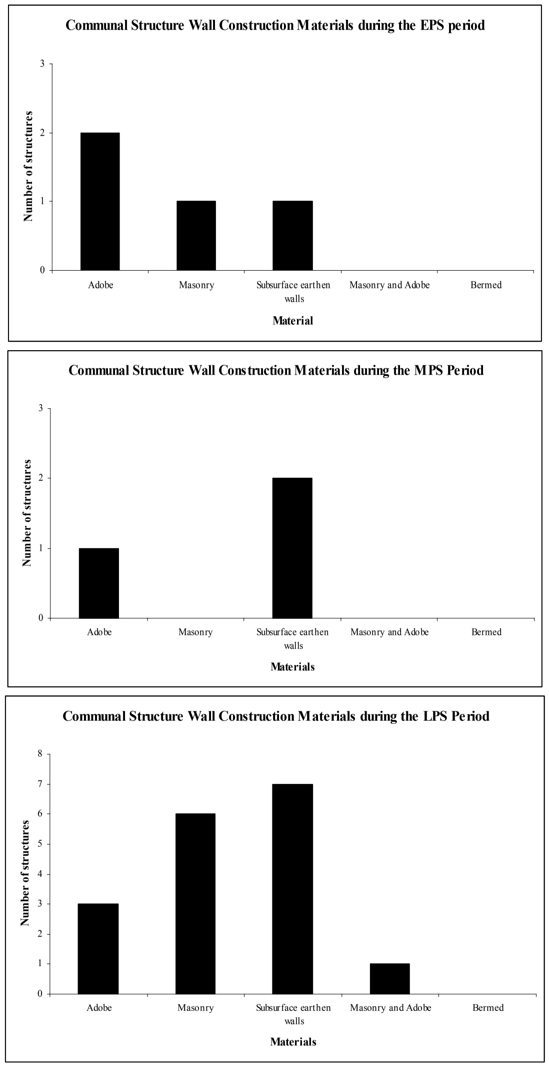

Figure 5.53. Pit Structure Wall Construction Materials.

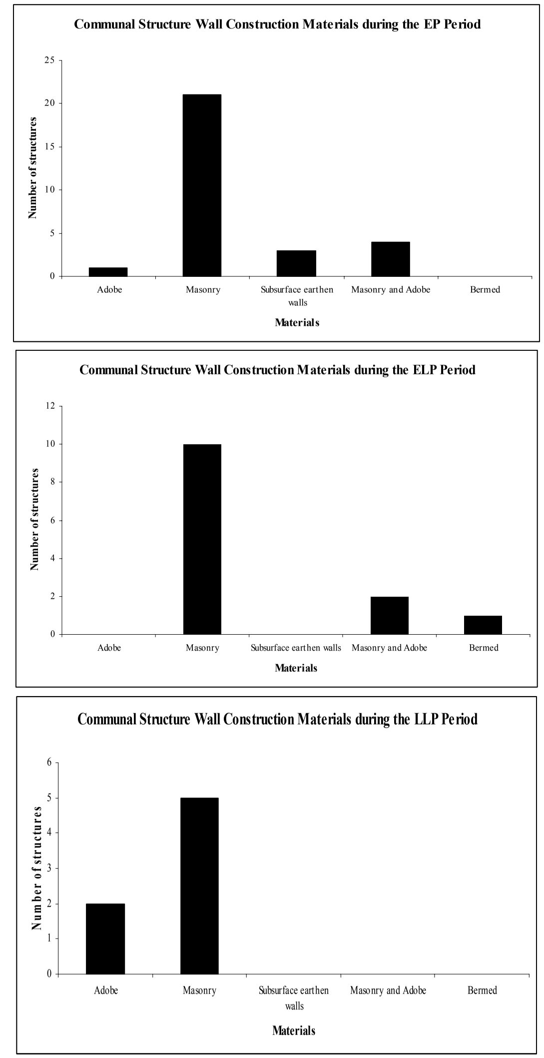

Figure 5.54. Pueblo Wall Construction Materials.

The "Closing" of a Communal Structure

In a 2003 article, Anyon and Creel discuss the purposeful destruction of some Mimbres Mogollon communal structures. They provide evidence that in some cases communal structures were built with destruction in mind, and when they had served their purpose within their communities, they were either collapsed or burned, often after dedicatory items had been placed within their walls. It is possible that the purposeful destruction of communal structures was a practice only associated with the ancient Mimbreños, but it is also possible that such "rituals" occurred in other areas of the Mogollon region as well. These data may be related to aggregation and integration and for this reason, I looked for evidence of burning and/or what was described as purposeful dismantling of Mogollon communal structures (Table 5.40).

Table 5.40. Evidence for Burning and Dismantling of Mogollon Communal Structures.

Not Burned	Burned	Evidence for intentional burning	Dismantled
52	19	11	3

I proposed that the destruction of a communal structure is associated with issues of aggregation and integration. If multiple communal structures are used at a site simultaneously and have no evidence of dismantling or burning, they are likely indicative of aggregation at the site. If, however, one communal structure is destroyed at a site before a new one is built and used it can indicate social integration in that the people living within a community feel that one communal space must be "closed" before a new one can take its place (see Creel and Anyon 2003). Evidence for burning and other kinds of destruction, or lack there of, was available for 85 of the Appendix II communal structures and specific dates were available for 77 of the 85 structures.

The majority of structures, 61 percent or 52 of the 85 structures, were not burned, 19 structures burned, 11 structures were reported to have been intentionally burned (e.g., vidence for the cleaning out of structures prior to fire, the presence of fuels placed in the structures) (Table 5.39). Three of the 85 structures including the Great Kiva at Ormand (Hammack et al. 1966; Wallace 1998), communal structure 1 at Cooney Ranch #1 (Stokes 2000b), and Room 152-K1 at Turkey Creek (Lowell 1991) were dismantled as reported by researchers based on removal of center posts and other construction materials and the purposeful collapse of structure walls.

The intentional dismantling of Room 97 at the Ormand site is evidenced by the fact that the roof, posts, and artifacts were removed. Upon its abandonment, residents removed the center posts and all roof materials. While the structure was not burned, it likely collapsed when construction materials were removed (Hammack et al. 1966:32; Wallace 1998:167).

Stokes (2000b:28) states that Communal Structure 1 was initially abandoned sometime near the end of the LPS period or early EP period. This structure was subsequently "completely dismantled" at some point during the EP period, based on the presence of diagnostic sherds found in the fill within the structure (Stokes 2000b:28). Room 152-K1 at Turkey Creek (Lowell 1991) was covered with rooms prior to the construction of another ELP period communal structure.

In some cases, (e.g., Feature 4 at the Smokey Bear ruin, A-16 at Old Town, Room 1 at NAN, and communal structure 73 at Galaz) structures appear to have been ritually "closed" prior to their intentional burning (Creel and Anyon 2003). These kinds of rituals include filling sipapus with crystals and white sand, placing dedicatory or termination objects (e.g., bird burials) in the corners or floors of the structures, and placing caches of items (e.g., crystals, shells, and pots) on the structure floors before or after they burned.

Researchers have provided evidence for the burning of Mogollon communal structures across time (Figure 5.55). A structure burning either before its abandonment or after is not uncommon (Figure 5.55 and Appendix II). Information that relates to arguments made by Anyon and Creel (2003) is evidence for purposeful burning and/or intentional destruction of a communal structure (Figures 5.56 and 5.57). These data do relate to aggregation and integration in that there are some sites (e.g., Old Town and Galaz) with evidence for the destruction of a communal structure prior to the construction of another one at the site (i.e., evidence for integration). However, destruction data were not as helpful in terms of identifying aggregation and integration as I had hypothesized. This is largely, because there are limited examples of such activity and very few sites have multiple contemporary communal structures with evidence for variation in destruction. I do provide evidence for sites with these kinds of data that can be used to discuss aggregation and integration after I discuss one other characteristic related to destruction/dismantling of a communal structures, that of burials.

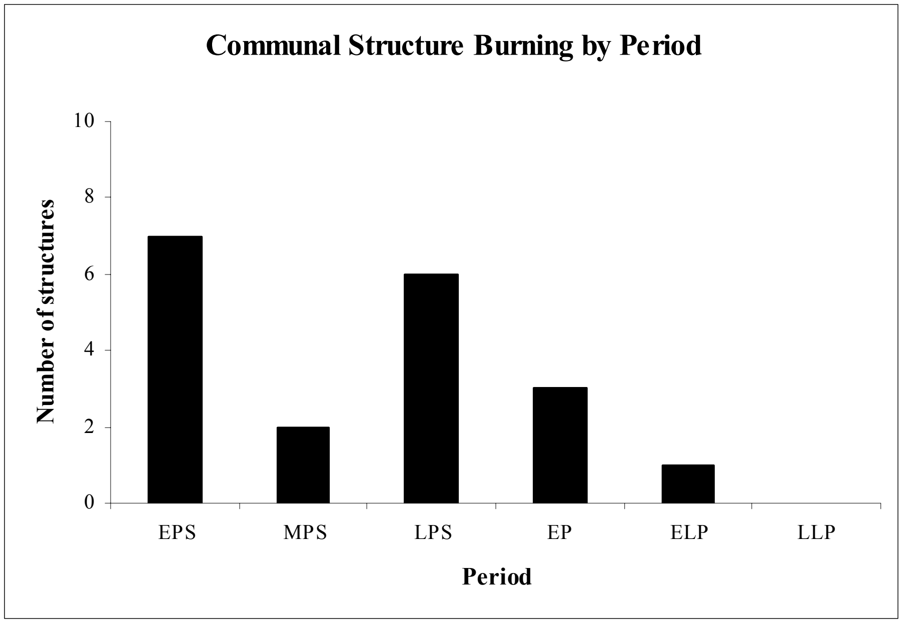

Figure 5.55. Evidence for Communal Structure Burning.

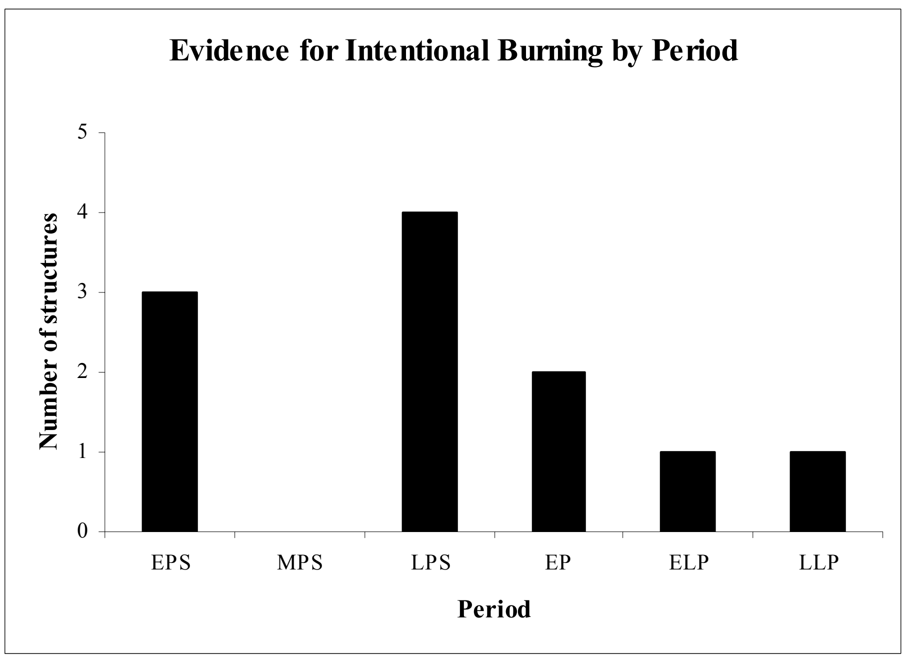

Figure 5.56. Intentionally Burned Communal Structures by Period.

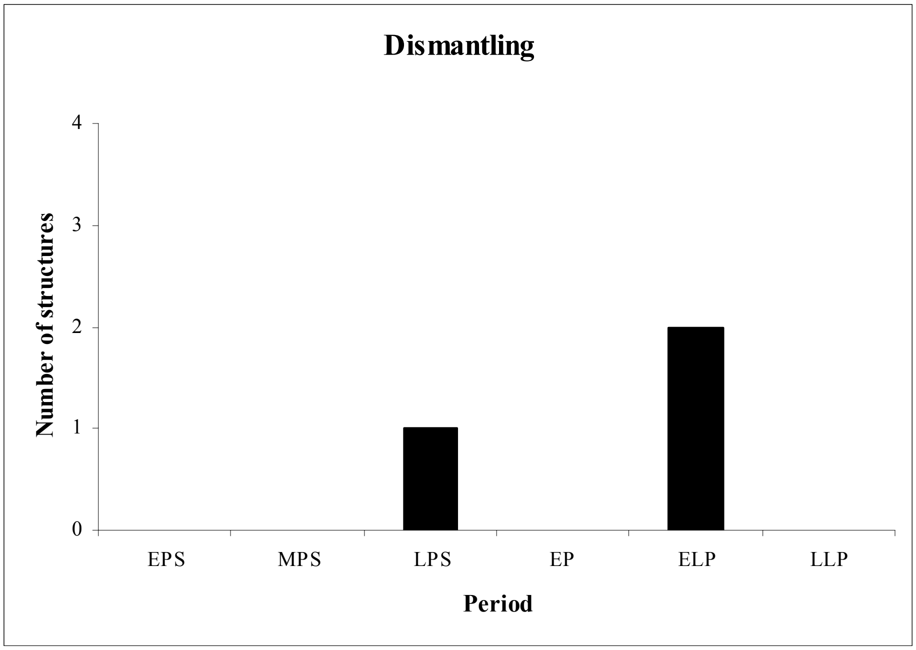

Figure 5.57. Evidence for Communal Structure Dismantling by Period.

Burials

Throughout the course of the research conducted for this study, I found evidence for many burials within communal structures, more than in habitation rooms. I propose that burials are also an indicator of the ritual closing of a communal structure and, to some degree, aggregation and integration. Twenty-one of the communal structures in Appendix II have between 1 and 58 burials in them for a total of 129 burials (Figure 5.58). The majority of the internments appear to have coincided with the burning of the structure. In fact, one communal structure, 42A at Galaz, with evidence for intentional burning holds 58 of the 129 reported burials (although 55 were post-abandonment internments) (Appendix II).

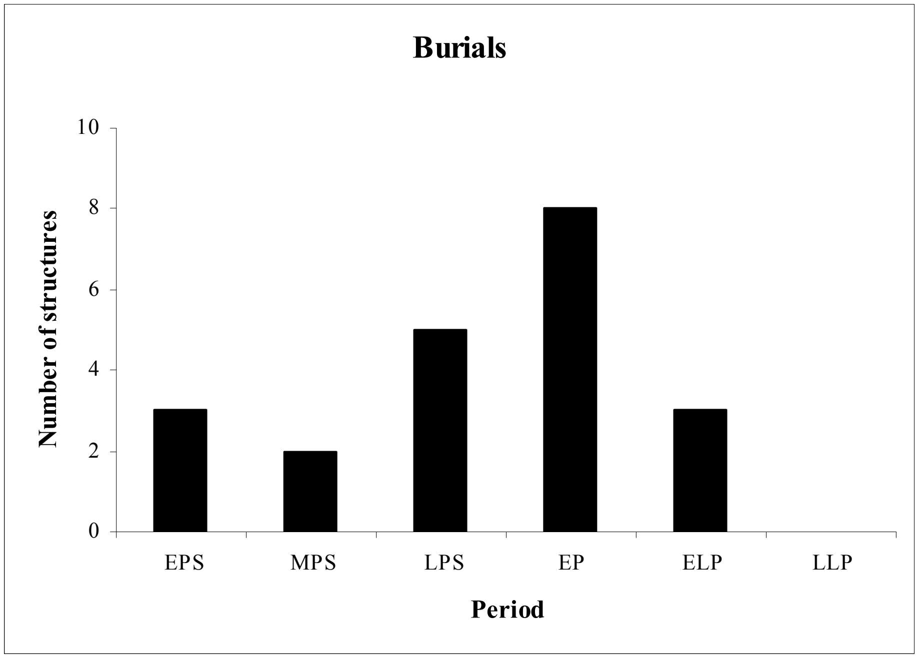

Figure 5.58. Evidence for Burials within Communal Structures. Counts do not include structures with multiple burials.

As was the case with burning and purposeful destruction, the importance of burials within the walls of a communal structure provides information about aggregation and integration in Mogollon communities. In terms of aggregation and integration, burials are a focus because the use of a communal structure for burial purposes may reaffirm that person's connection to that structure and/or to their community. If the residents of a community destroy one communal structure, and/or use it for burials (such that it could not be reused) before building a new structure, there are indications of social integration at the site. If there are multiple communal structures at the site and abandonment/termination rituals vary from structure to structure, these data provide evidence for population aggregation. The Mimbres valley Old Town site provides a good example of a cycle of construction and destruction in a Mogollon community.

Intentionally Burned Communal Structures

At Old Town, the three Pit Structure period communal structures were all built in the same location within the community; the MPS period structure was built atop the EPS period structure and the LPS period structure atop the MPS period structure (Creel 2000). At the end of the LPS period, after remodeling the structure at least twice, members of the community filled the sipapus with white quartz sand, placed termination objects in the corners of the structure (including an owl burial), burned A16, and while it was burning collapsed the walls into the structure (Creel 1998, 1999a, 2000). At this site, the communal structure was built and destroyed in the same place for several hundreds of years and was destroyed at the end of the occupation of this area of the site (Creel 1997, 1998, 1999a). The construction and destruction of Old Town's three communal structures provide evidence for social integration at the site.

NAN site communal structure construction and destruction also seems to relate to aggregation and integration. Room 18 was built atop the smaller, burned Room 57 and Room 45 was constructed on top of 18 when it was also subsequently destroyed by fire (Shafer 2003). In addition, termination also appears to be important at NAN and both of the LPS period communal structures, 52 and 91, were burned at the end of the period (Shafer 2003). Structure 52 was burned using cornhusks as fuel and then filled with gravel and termination objects (Burden 2001; Shafer 2003). Subsequently, the structure was the burial place for at least six people (Burden 2001; Shafer 2003). When structure 91 was abandoned the sipapu was filled with white sand and a red seed jar with 412 amethyst crystals was buried below the floor before the structure was burned

(Burden 2001; Shafer 2003). The destruction of these LPS period communal structures provides evidence for both aggregation and integration. The variation in termination objects, the use of cornhusks as fuels in structure 52 and not in 91, and filling of structure 52 provide evidence for aggregation within the community in that these are evidence of diversity at NAN. The fact that members of the community participated in the destruction of the two structures and conducted rituals to “close” structures 52 and 91 provides evidence for social integration, similar to that seen at Old Town, within an aggregated community.

At the Galaz site, three of the four communal structures were purposefully destroyed (Anyon and LeBlanc 1984). Structure 8 dates to the EPS period. Prior to abandonment, a crystal was placed in the center posthole after it was removed and the structure was burned (Anyon and LeBlanc 1984). Data from the LPS period structure 42A provide an exceptional example of the destruction of a Mimbres valley communal structure. Two decapitated infant burials and one additional burial were found in the purposefully burned 42A (Anyon and LeBlanc 1984). Subsequently, archaeologists uncovered 55 post-abandonment burials dating to the end of the LPS period within 42A. The burials marked the complete closure of this communal structure was truly at this point and it was never used again (Anyon and LeBlanc 1984). The use of structure 42A for so many internments may indicate a change in social integration as well because these 55 people may have been important members of an integrated community buried within the walls of the structure that was used to integrate their LPS period community.

During the EP period, residents of the community destroyed a third Galaz communal structure. Structure 73 is also known as Parrot Kiva because a macaw, with turquoise and shell wrapped around its legs, was placed, as a dedicatory object after the structure was burned (Anyon and LeBlanc 1984). The consistency in the "closure" of communal structures with dedicatory items, burials, and burning provides evidence for a history of integration at the site.

While most of the evidence for purposeful destruction of communal structures comes from sites located in the Mimbres valley, the LLP period Smokey Bear ruin provides evidence for termination practices in the Jornada region (Wiseman 1976). Feature 4, an ELP period communal structure, was intentionally burned but only after the sipapu was covered with a crystalline aragonite stone and "many dedicatory effects" had been placed in the structure (Wiseman 1976:32). The burning of the Smokey Bear communal structure also includes six cremations and nine burials (Wiseman 1976). The fact that Feature 4 is the only communal structure at the site provides evidence for integration, but the additional "closing" rituals associated with the structure provide additional support for integration. Again, the use of the structure for burials, and indeed for so many burials, also provides evidence for the communal importance of Feature 4.

All of the evidence for purposeful communal structure destruction can be related specifically to population aggregation and social integration. Eleven structures including A67, A16, and A71 from Old Town, structures 18, 52, 57 and 91 from NAN, Communal structures 8, 42A, 73 at Galaz, and Feature 4 at Smokey Bear have evidence for intentional burning. The Cooney Ranch #1, Ormand, and Turkey Creek sites have communal structures that had evidence for intentional dismantling. The majority of sites with evidence for destruction are in the Mimbres valley, which provides evidence for some degree of social integration in the area. At these sites, evidence for integration is that the communal structures are destroyed using techniques/rituals (e.g., bird burials, crystals, sand filled sipapus, and human internments) not evidenced in other areas of the Mogollon region. In destroying a communal structure, by fire or purposeful dismantling, particularly a large one like Parrot Kiva and A16, is not an easy task, the act of destruction itself provides evidence for integration. In this instance, group affiliation is reaffirmed via participation in the dismantling and/or destruction of a community's communal structure.

Destruction, dismantling, burning, and burial data also provide evidence for aggregation in that there is variation in termination practices between sites. For instance, at some sites (e.g., Old Town), location preferences were so important that residents destroyed older communal structures to build new ones in the same places. At other sites (e.g., NAN), communal structure location was not necessarily important, but the destruction of previously used communal structures is done before a new one is built. At some sites (e.g., Galaz) communal structures are used for burials, while at others they are not. Finally, while there are bird burials at two sites, Old Town and Galaz, two different birds (one macaw and one owl) were buried. These examples of diversity do provide evidence for regional population aggregation within the area.

The Analysis of Mogollon Communal Structures: A Summary

The communal structure characteristics initially listed in Table 1.1 were intended to measure aggregation and integration. The analysis of these characteristics presented in this chapter revealed that three characteristics, frequency, location, and size, were the most useful measures of population aggregation and social integration (Table 5.41).

Table 5.41. Summary of Measures of Aggregation and Integration.

Measure	Aggregated	Integrated
Frequency: The most useful measure of aggregation and integration, frequency based on dating was a prerequisite for all other measures.	Multiple contemporary communal structures.	Fewer communal structures at a site; in most cases only one structure at a site, regardless of site size.
Location: Useful when frequency was known.	Multiple structures associated with particular areas of a site.	Centrally, prominently, spatially separate, or isolated from other structures at a site.
Size: Useful when frequency was known.	Variability in communal structure size when multiple contemporary structures present.	Usually a large structure, although communal structure size is often relative to site size.
Shape: Useful when frequency was known.	Variation in contemporary communal structure shape at a single site; sometimes contradicted other characteristics.	This characteristic is not revealing at a site level, because there is only one contemporary communal structure but reflects integration across time at a site and may reflect some degree of regional integration.
Wall construction technique/materials: Not a particularly useful measure, largely because of a lack of detailed data. Useful when frequency was known.	Frequently little variation from structure to structure at the same site.	Interesting at sites with a single communal structure with construction material variation. Potentially useful at a regional level.
Hearth shape: A useful measure for communal structures characterization. Useful when frequency was known.	In many cases, hearth shape did not vary a great deal from structure to structure. In some cases, this characteristic did support other data.	This characteristic is not necessarily revealing at a site level but can reflect architectural standardization at a regional level.
Orientation: Not a particularly useful measure. Useful when frequency was known.	Orientation varied among contemporary communal structures; in some cases contradicted other data.	This characteristic is not revealing at the site level but may be used to support regional integration.

Communal Structure Frequency

Communal structure frequency was the most important of all of the characteristics used to measure population aggregation and social integration. Chronometric data from the 110 sites provided information that some sites have more contemporary communal structures than others do, and that communal structure frequency does change through time. At many sites, ceramic dates were the only ones available for communal structures (Appendix II); therefore, in some cases it was difficult to determine whether structures provided evidence for aggregation or integration. Some researchers (Bussey 1972; Dycus 1997) provide detailed construction histories for the communal structures they identified at the sites they studied (e.g., Lee and Diablo villages respectively); these data were very helpful in assessing population aggregation and social integration.

In general, expectations regarding frequency data were that sites with multiple contemporary communal structures were aggregated, because the structures reflect segregation and/or segmentation within a community. Integrated sites have few contemporary communal structures, most commonly only one, as having fewer structures encourages social solidarity. Results from frequency data presented in Table 5.9 showed a majority of sites with evidence for social integration.

There were also data suggesting that at some sites aggregation was common sometimes across time. At other sites, aggregation was eventually replaced by, or complemented with, social integration. A detailed investigation of communal structure dates, or more specifically chronometric data, eliminated some sites from the analyses.

Chronometric data provided information about population aggregation and social integration in the Mogollon region across time. A majority of Mogollon sites have only one communal structure. When the percent of sites with one structure is combined with sites with multiple non-contemporary communal structures the percent of sites with evidence for integration increases There are, however, sites with evidence for aggregation during most periods as well. During the EPS period, six percent of sites have frequency data for aggregation; this percentage increases to 13 percent during the MPS period and drops to nine during the LPS period. During the EP period, traditionally believed to be the period during which population growth affected the Mogollon region, the percent of aggregated sites is only eight percent. During the ELP period, 14 percent of sites in the assemblage have frequency data supporting aggregation. No LLP period sites have evidence for aggregation alone, although the three Grasshopper communal structures support the idea that residents mitigated population aggregation within their community by constructing a large Great Kiva to promote integration

Frequency data provide evidence for social integration at a majority of sites across time. During the Pit Structure period, the percent of sites with only one contemporary communal structure is the same for the EPS and LPS periods, with only a slight decrease during the MPS period. At the same time, a decrease in the percent of sites with evidence for integration during the EP period provides evidence that aggregation. Combinations of aggregation and integration became more common during this period and continued into the ELP period. During the LLP period however, the percent of sites with one communal structure (including those sites with multiple non-contemporary communal structures) is

80 percent, very similar to those calculated for the Early and Late Pit Structure period. Ultimately, the fact that statistically I was unable to disprove the null hypothesis using both *t*-tests and an ANOVA supports my argument that social integration was common across time and throughout most of the Mogollon region.

Communal Structure Location

The second measure of aggregation and integration considered was communal structure location. Location is important because the placement of a communal structure within a community provides information about facility accessibility or lack thereof. For example, a communal structure located within an enclosed roomblock provides easy accessibility for the inhabitants of the roomblock and limits or at least provides for monitoring of access, to the structure. In contrast to that, a centrally/prominently located communal structure helps to promote social integration, because it becomes a focal point for community activities and rituals. In this study, aggregated sites had multiple communal structures attached to or located close to a roomblock or section of the community with which they are associated. Integrated communities commonly had one structure, situated in a central or prominent location. Spatially separated or isolated communal structures also reflect integration because they are accessible to an entire community or communities.

As was the case with frequency data, communal structure location information provides support for social integration at a majority of Mogollon sites across time and space. While location data were more limited than frequency data (i.e., these data were available for 127 structures), they did provide additional information about aggregation and integration across time. Isolated, prominent, and spatially separate communal structures all provided support for social integration. I proposed that communal structures attached to or associated with particular areas of a site supported population aggregation. Initial counts suggested an almost even split between aggregated and integrated sites.

Sixty-two communal structures fall into the associated category. Fifty-two of the structures are in prominent locations at the site. When these 52 structures are combined with the three isolated and 10 spatially separate structures, they account for 51 percent of the assemblage. However, a more detailed analysis of location data provided more support for the presence of social integration at a majority of sites. Some of the associated structures were associated with a single roomblock or with a very small pit structure site (e.g., the Fox Place communal structure, Room 7 at Grasshopper Springs, Features 7 and 8 at Rock House). These structures therefore provide evidence for social integration at these sites. While location data in general provided a great deal of evidence for integration, there were sites with location data suggesting aggregation occurred at several Mogollon sites (e.g., Galaz, Lee, NAN, Gila Cliff Dwellings). In some cases (e.g., Wind Mountain), these data provide evidence for population aggregation across time at individual sites.

Communal structure location data suggest that aggregation became a visible influence as early as the Early Pit Structure period. This trend continues into the LPS period, when the percentage increases to 20 and remains relatively stable into the EP and ELP periods. It is not until the Late Late Pueblo period when evidence for aggregation seems to disappear, although Grasshopper pueblo provides evidence for initial aggregation and subsequent integration during this period.

Communal Structure Size

Communal structure size was the third characteristic selected to measure population aggregation and social integration. More size data were available for Mogollon communal structures than were location data (n = 164). The size of a communal structure is important because smaller structures allow for fewer participants, while larger facilities provide space for more people to take part in communal activities, rituals, and events. The initial hypothesis was that aggregated communities would have multiple relatively small contemporary structures. In contrast, integrated communities should have fewer, larger communal structures. Very large communal structures situated at sites that were relatively small might have integrated larger numbers of people possibly from other communities.

As was the case with chronometric and location data, size data were particularly useful at sites with multiple structures, because these data provided additional evidence for integration and aggregation at sites where the two occurred simultaneously or sequentially. Size data suggest that at some sites with two or more communal structures (e.g., Galaz, Grasshopper, and NAN); one of the structures is very large, thus providing a place for social integration within an aggregated community. It should also be noted that in many cases communal structure size was independent of village size (Appendix II). That is, some relatively small sites had extremely large communal structures (e.g., Bear and Dry Prong). As was the case with frequency and location data, size data supported the idea that people living at the majority of sites were socially integrated.

Results from the analysis of size data closely resembled those of location, although there is some variation. However, size data are important because they provide additional information about aggregation and integration. There is at least one site dating to each of the Pit Structure and Pueblo periods with evidence for population aggregation, although most sites provide evidence for the importance of social integration across time throughout much of the Mogollon region. Interestingly, size data suggest that at Galaz, Grasshopper, NAN, and Black's Bluff aggregation and integration occurred simultaneously. In these cases, there are multiple contemporary smaller communal structures along with one large structure.

Communal Structure Shape

Communal structure shape was a somewhat less useful measure of aggregation and integration. However, shape data from 149 communal structures were available. Sites with a single communal structure did not necessarily contribute to a better understanding of aggregation and integration. However, shape data for sites with multiple communal structures were more helpful. Certain shapes are common during particular periods. For example, circular structures with lobes are only present during the EPS period; rectangular communal structures become most common during the LPS period and are the most common across time.

I initially suggested that shape variation would reflect social diversity within a community, that people aggregating on the landscape would build different communal structure shapes at a single site. In some cases, shape data provided supplemental information about other characteristics (e.g., frequency, location, and size). In these cases, sites with multiple communal structures had structures that were identical in shape (e.g., Grasshopper, NAN, Turkey Creek, and Wind Mountain). This is interesting because these data can be used to suggest that even at aggregated sites some degree of integration, manifested in architectural standardization, exists. It may also be that communal structure shape is related to architectural choices that supersede diversity (i.e., rectangular structures connected to rectangular roomblocks). Shape data were useful in that they did provide information about the potential for aggregation and integration to occur simultaneously, while there may be multiple communal structures at a site (i.e., aggregation) they may all be the same shape (i.e., integration). These data also revealed patterns and trends in communal structure shape across time at the community (e.g., NAN, Old Town, and Wind Mountain) such that shape does not necessarily remain consistent across time even at an integrated site.

Communal Structure Wall Construction

Wall construction technique was a characteristic that was not very effective for measuring aggregation and integration. Wall construction data were relatively limited, available for only 73 of the 206 structures in the Appendix II database. Site reports, articles, and existing databases did not frequently include these data. While the geology and ecology of the Mogollon region are somewhat diverse and therefore a variety of materials may be used to build a communal structure, construction patterns were largely redundant throughout the region. People typically used adobe plaster to line their subterranean communal structures or some form of cobble stone masonry with adobe plaster to construct semi-subterranean, subterranean, and aboveground structures. These structural consistencies may be coincidental, they may be a result of a shared common background among people living in the region, or they may be the result of a pan-Mogollon expression of communal structure architecture. Construction data alone make it is difficult to assess any of the three scenarios.

Hearth Shape

Hearths did stand out as useful among the internal feature data (Appendix II). Hearth shape, like structure shape, is somewhat time dependent, but there is diversity across space. At some sites, changes in hearth shape coincided with structure shape. At other sites, hearth shape varied from structure to structure. For this reason, hearth data did provide additional evidence for aggregation and integration. Communal structure hearths provided evidence that hearth shape changes through time, as does communal structure shape. Almost all of the EPS period hearths in the assemblage are circular and all MPS period communal structure hearths are circular. Variation increased during the LPS period when structures had circular, square, oval, and rectangular hearths. This variation continues into the EP period and some communal structures have no formal hearth. There is a slight decrease in variation during the ELP period and square communal structures disappear from the assemblage all together. The decline continues into the LLP period when circular and rectangular hearths are found in almost equal numbers.

Hearth shape may be time dependent as suggested by some archaeologists (Creel and Anyon 2003; Diehl and LeBlanc 2001). However, the fact that diversity is present may provide evidence for regional aggregation, in that people start to use all shapes at the same time (i.e., LPS period). Ultimately, communal structure hearth shape provides some evidence for aggregation and integration, but is not the most useful characteristic.

Communal Structure Orientation

I thought that communal structure orientation had the potential to reveal information about aggregation and integration. An aggregated site would have more diversity in structure orientation among structures, while a socially integrated site should have a more standardized orientation. It was interesting that structure orientation was somewhat consistent across time for the 126 structures for which these data were available (i.e., an eastern orientation was the most common).

The majority of the Appendix II sites are oriented to the east or southeast. While an eastern orientation is the most common, communal structure orientation does vary to some degree throughout the Pit Structure and Pueblo periods. Interestingly, we begin to see more ramps orientated in directions other than east and southeast during the LPS and EP periods. During the EP period, the most communal structure orientation variation occurs. However, some degree of variation continues through the ELP and LLP periods. However, some variation does exist, and may reflect some degree of population aggregation across all periods. Variation may also be a result of a lack of standardization, thus also supporting the contention that aggregation occurred throughout the Mogollon region from the EPS period to the LLP period.

The Mimbres valley Old Town site provides an interesting example of orientation throughout the entire Pit Structure period. Residents of the Old Town community built three communal structures in approximately the same location, one dating to the EPS period, one to the MPS period, and one to the LPS period (Appendix II). These structures are three different shapes and three different sizes. While all three structures are orientated to the southeast, they do vary. The circular, lobed EPS period structure is at an orientation of 141 degrees, the D-shaped MPS period communal structure is oriented in almost the same direction at 135 degrees. Finally, the rectangular LPS period structure was oriented at 114 degrees. While in general the orientation of the three structures is relatively consistent to the southeast, there is some variation, suggesting that there is not a rigorous compliance with specific architectural patterns. Fine-grained orientation information, combined with location, shape, and size variation from the Old Town communal structures may provide information about change within an integrated community. In this case, the orientation and location of the communal structure were the only redundant characteristics across time and provided evidence for long-term social integration at the site.

Integration, Aggregation, and Analyses of Mogollon Communal Structures

While it does appear that population aggregation occurred in some areas (e.g., the Mimbres valley and Grasshopper, for example) of the Mogollon region, frequency, size, and location data provide evidence that people living in all areas of the region promoted social integration, in more cases than not, across both time and space. Although sites like Lee, Point of Pines, Wind Mountain, and W:10:37 provide examples of aggregation occurring across time, at the majority of sites there is strong evidence for integration. Communal structure data from a few sites, such as Higgins Flat and Grasshopper, demonstrate that aggregation and integration can and do occur simultaneously at a single site. Still other sites such as NAN provide evidence that an aggregated community may become integrated and vice versa.

The percentage of Mogollon sites with only one communal structure, based on frequency data, is a very strong indicator of social integration. The percentage of sites with evidence for integration is relatively high across all periods, but there is some variation, which suggests that while integration was emphasized at the vast majority of Mogollon sites, some degree of population aggregation did occur, especially during the MPS, EP, and ELP periods. The EP period appears to be a time of change, however, while the percent of sites with evidence for integration does decrease, there is not a significant increase in the number of aggregated sites. In addition, the percent of sites with conflicting or insufficient data actually increases during the EP period, contributing to the apparent decrease in the number of sites with evidence for integration.

Social integration was the most common form of community organization in the Mogollon region with some examples of population aggregation and combinations of integration and aggregation. It also follows that population aggregation at the level of the individual site was a relatively short-lived endeavor throughout much of the Mogollon region (however, see Lee and Wind Mountain as exceptions); at a regional level, though, there is a great deal of evidence to suggest that the area as a whole was occupied continuously for centuries. The region experienced population aggregation beginning as early as the Early Pit Structure period, which continued to some degree during the Late Pit Structure and Early Pueblo periods. One of the mechanisms used by people living in the Mogollon region to mitigate the affects of population aggregation was to build communal structures and in some cases large structures, thereby providing integrative mechanisms. The implications of the results presented in this chapter are discussed using a more theoretical perspective in Chapter 6, as is a discussion of suggestions for archaeologists conducting research that includes communal structures.

CHAPTER 6

COMMUNAL STRUCTURES, AGGREGATION, AND INTEGRATION: INTERPRETATIONS, CONCLUSIONS, AND FUTURE DIRECTIONS

Social changes occur within the existing social framework. Population growth and depopulation within the Mogollon region occurred largely from within, as evidenced in the material remains from the area (Cordell 1997:348-355; Creel 1996b). This does not mean that diversity did not exist within the region, between sites, or even within sites, and some researchers (Gladwin and Gladwin 1934; Shafer 1996) have suggested that immigrants were part of the occupation of the Mogollon region (Woodson 1999). Regardless of their origins, people have to learn how to mitigate a situation in which an increase of the number of people living within a community occurs. The more people who live together, the more "complex" decision making and other tasks can become (Adler and Wilshusen 1990; Creel, *in press*). The architectural data presented in Chapter 5 provides evidence for how communities throughout the Mogollon region mitigated these kinds of conditions and changes, particularly in terms of population aggregation and social integration across time.

Traditionally, researchers working in the United States Southwest have suggested that population aggregation occurred throughout the area at various times and was followed by periods of population dispersals (Berry 1982; Blake et al. 1986; Cordell 1997). In the Mogollon region, population aggregation was thought to have occurred in several areas, but the most obvious manifestation of this was focused in the Mimbres valley during a period commonly referred to as the Classic Mimbres phase (Anyon and

LeBlanc 1980; Brady and Clark 1999; Cordell 1997; Gilman 1980; Hegmon and Brady 2001). In my research, I was interested in the timing of population aggregation occurred in various areas of the Mogollon region. I was also curious about the material manifestations of population aggregation and social integration in the archaeological record. Finally, I wanted to explore how people cope with issues of aggregation and the role of integration, particularly in areas that experience unprecedented population increase and community growth (Blake et al. 1986).

Three hypotheses regarding aggregation and integration were presented in Chapter 1. The first of the three deals with the ways in which ecological issues, including rainfall patterns, resource availability, and drought affect aggregation and integration. I found that all of these conditions are present across time throughout the entire Mogollon region and it is difficult to gauge what the impacts of these factors to specific sites were, because there is no evidence of catastrophic events until a drought that affected some parts of the area in A.D. 1150 (Cordell 1997:208).

As Cordell (1997:208) and others (Minnis 1985) have suggested the population aggregation that occurred to some degree during the EP period brought about resource depression, which was only exacerbated by extended and unanticipated decreases in rainfall in at least some areas of the Mogollon region. Communal structure data from the LLP period, which followed a period of population aggregation, provide evidence for a renewed interest in social integration throughout the region (e.g., Grasshopper). The analyses of communal structure data do provide evidence for aggregation during periods of relative resource abundance and “normal” rainfall patterns (e.g., EP and ELP periods).

On the contrary, integration, which is continuous throughout the period considered in Chapter 5, appears to be reinforced across time, but even more strenuously during periods when communities are vulnerable to resource depression and climatological fluctuations (e.g., EPS and LLP periods).

The second hypothesis put forth in Chapter 1 is that aggregation and resource depression and/or conflicts motivate integration. In an effort to evaluate this question, I considered site location as well as communal structure frequency, size, and location during periods when aggregation appeared to be an issue (Cordell 1997). Previous research has suggested that aggregation occurred during the EPS and EP periods.

Topographic data presented in Chapter 5 suggested that many Early Pit Structure (EPS) period settlements, the first physical manifestations of population aggregation on the landscape in the Mogollon region, were situated in defensible topographic locations (e.g., as previously noted by Anyon and LeBlanc (1980); Cordell (1997:204); LeBlanc (1999) and others). These site locations include mesa tops, terraces, ridges, and hilltops. The earliest Mogollon communal structures are found at these sites. The frequency analysis for the EPS period indicated that 83 percent of the EPS period sites included in Appendix II have evidence for integration (i.e., a single communal structure). Location data also supported the idea that integration existed at a majority of EPS period site. Eighty-two percent of structures were situated in prominent, spatially separate, or isolated locations within their communities. Given these site locations are defensive, (Hard and Roney 1998; LeBlanc 1999), communal structure data provide evidence for early integration motivated primarily by aggregation and potential or realized external threats.

The fact that as stated in Chapter 3 during the EPS period people living that the Mogollon region were supplementing their foraging diet with farming, resource depression also existed due to crop failures, raiding, and less than sufficient harvest rates.

Population aggregation has also been thought to occur during the EP period (Anyon and LeBlanc 1980). Communal structure data for this period does suggest that aggregation was more common at this time, with only 64 percent of sites having evidence for integration. In fact across time, frequency data provide evidence the each period with some evidence for population aggregation is followed by a period of integration (e.g., MPS to LPS and ELP to LLP), except for the EP period, which appears to be followed by a continuation of aggregation into the ELP period.

Ultimately, however, I found that in general, even through aggregation occurred at various times, integration was present at a majority of Mogollon sites across time. This may be a result of continuing population aggregation throughout the region and because external threats were always an issue given fluctuations in the production of agricultural goods as a result of rainfall patterns, raiding (Cordell 1997; LeBlanc 1999), over-population (see Blake et al. 1986), and resource depression (Cannon 2001; Minnis 1985).

The third and final hypothesis is that both aggregation and integration are relatively short-lived endeavors, particularly in areas like the Mogollon region of the southwestern United States, with regular fluctuations in resources and rainfall. Analyses of communal structure data provide information that this hypothesis was both correct and incorrect. In general, at the site level aggregation and integration are relatively short lived. The average life of a Mogollon community is in most cases two to three generations (Cordell 1997:246) although people may return to a community after moving away for some time. In the Mogollon region over the entire 1100-year time span, integration was the most common form of organization, so in that way, the region reflects long-term integration, although not necessarily at the site level. Integration is visible in the archaeological record for long periods (e.g., Old Town) at some sites. However, in most cases, sites were relatively short lived (e.g., Bear Ruin, Black's Bluff) and aggregation was often replaced by integration, or an aggregated community was integrated as well (e.g. NAN, Grasshopper).

While the hypotheses initially presented in Chapter 1 and explored here focused on environmental factors, one of the most interesting aspects of the analysis of communal structure data is that social factors likely play an equally important role in aggregation and integration. In the Mogollon region, population aggregation precedes integration, as discussed above. Integration may in fact be a social response to the impacts of planned or unplanned aggregation within a community. Patterns in communal structure frequency, location, and size data suggest that even when aggregation does occur it is tempered by or replaced with integration. In most cases, a focus on integration appears to have superseded environmental conditions in the Mogollon region across time. While this was not my initial interest, it represents a contribution to the literature as well as do my definitions and descriptions of aggregation and integration.

In Chapter 1, I described and defined population aggregation in my own manner and list factors associated with this organizational form. I suggested that aggregation occurs for a variety of reasons, including, fluctuating rainfall patterns (Minnis 1985), increasing agricultural productivity (Stone and Downum 1999), external threats (LeBlanc 1999), and social influences (Fish and Fish 1994). In fact, all of these conditions affected the lives of the people living in the Mogollon region to some degree. I also found that the factors motivating social integration are multifaceted. As discussed in Chapter one, these include, extended periods of ecological distress, decreasing agricultural productivity, concentrated areas of required or desired resources, sustained external threats, or a need for a larger group of people to accomplish long terms goals. During the periods included in this study, one or all of these conditions was present in the Mogollon region.

Research on Mogollon communal structures provided a perspective of aggregation and integration that was unique to the Mogollon region, but also a technique that can be applied to any area with some form of communal architecture. Communal structure research suggested that population aggregation occurred as early as the Late Pit Structure period, if not earlier in some areas (e.g., Mimbres valley), and not at all in others. These structures also provided evidence for consistency in community organization, primarily in the form of social integration. While this thesis is not the first place that such issues have been dealt with, it provides an intensive study of communal architecture, aggregation, and integration.

Given the knowledge that aggregation and integration occur for a variety of reasons, my general conclusion is that both of these phenomena are social issues and that while both may be present at any time, in the Mogollon region in general, people focused on and actively pursued socially integrated communities. This conclusion is important, because I suggest it contradicts some of the ideas about changes in the Mogollon region across time and the impact of population aggregation in communities in the region. We will return to this discussion later in this chapter. However, in order to understand the relationship between aggregation and integration, I examined some of the models presented earlier and the ways in which other archaeologists have defined and dissected these issues in the past.

Theoretical Perspectives on the Analysis of Mogollon Communal Structures

Recently, Creel (*in press*), using Johnson (1982) and Adler's (1989) concepts of scalar stress, suggested that within Mogollon sites, specifically Mimbres sites, there may be different levels of organization within a community. The number of levels and the elaboration of the architectural manifestations of theses levels would depend in part on the size of the community (e.g., the number of households and the numbers of individuals per household). In his study, Creel (*in press*) suggests that communal structures provide evidence for organizational levels.

In a related argument, Hill (1970) proposed that social integration and population aggregation are two independent phenomena, even though they might both occur within a single community. I have suggested that Mogollon communal structures can be used to measure integration and aggregation. I have also stated that across time, it appears that people living in the region promoted social integration in their communities even when aggregation occurred. The data and research I presented in Chapter 5 provide evidence for this argument. The following section provides a review and some conclusions about this evidence.

Analyzing Communal Structures, Aggregation, and Integration: Conclusions and Interpretations

Data from 206 communal structures from 110 sites, presented and analyzed in Chapter 5, support the idea that both population aggregation and social integration occurred in all areas of the Mogollon region included in this analysis, sometimes simultaneously within a single site (e.g., Grasshopper). At the same time, communal structure data in general suggest that people maintained and reiterated a focus on social integration across time and space. Evidence to support this claim can be found in several places. In some cases, a lack of evidence also provides reinforcement for ideas concerning aggregation and integration. One such case can be found in the statistical analyses included in portions of Chapter 5.

While a majority of my analyses focused on comparisons of averages and frequency distributions, I was interested in results from statistical analyses of appropriate data. In an effort to determine the statistical significance of changes in communal structures across time and their relationship to issues of aggregation and integration, I considered which data were appropriate for statistical analyses. Communal structure frequency, because I compared the average number of communal structure per site across time, these data could be analyzed statistically. I also determined that communal structure size averages were also appropriate for statistical analysis.

The statistical analyses I decided to apply to determine significance were t-tests and an ANOVA. These choices were because I was comparing unequal time periods and variable sample sizes. I initially applied unpaired Student's *t*-tests (http://www.physics.csbsju.edu/stats/t-test_NROW_form.html) to these data. Results from these *t*-tests, comparing frequency and subsequently size by period across time, showed that the null hypothesis could not be rejected, and therefore that the changes across time were not statistically significant. I followed the *t*-test with a multivariate ANOVA (http://www.physics.csbsju.edu/stats/anova_NGROUP_NMAX_form.html). The same was true when these tests were applied to communal structure size data (although the *t*-test did show significance from the ELP to the LLP period). These results are interesting on one hand and problematic on the other.

The absence of statistical significance in communal structure frequency does not invalidate the arguments that I subsequently made in Chapter 5. These data provide support for social integration at a majority of sites. The percentage of sites with one communal structure (based on raw counts) prior to more detailed analyses provides information that a majority of sites have only one communal structure (Table 6.1, Appendix II). In addition, in general, there is relatively little variation in average communal structure frequency across time as well (Figure 6.1).

Table 6.1. Percent of Sites with One Communal Structure Based on Raw Counts.

Period	% of sites with one communal structure
EPS	78
MPS	63
LPS	78
EP	56
ELP	52
LLP	70

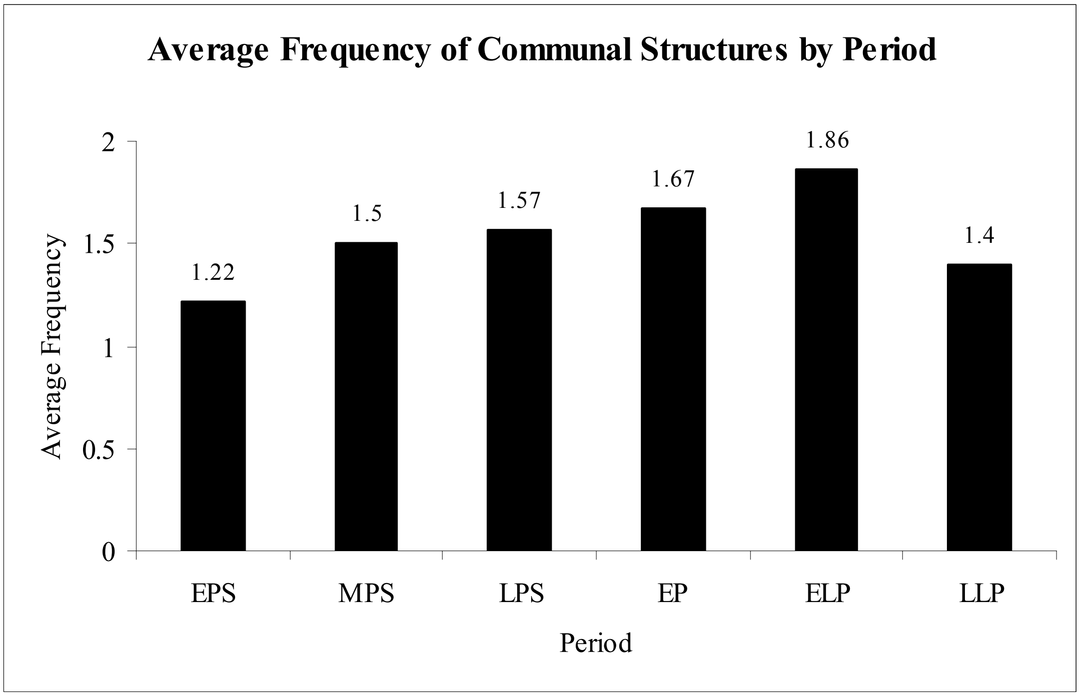

Figure 6.1. Average Communal Structure Frequency by Period.

Average frequency and the percent of sites with only one communal structure also suggests that while changes in social organization, specifically aggregation and integration, did occur in the Mogollon region, integration was the primary organizational form at many sites. The subsequent analyses presented in Chapter 5 provide consistent evidence for social integration across time, which may help to explain the lack of statistical significance. At the same time, these kinds of data do not necessarily lend themselves to statistical analyses for reasons discussed below.

Statistical analysis of communal structure data was difficult for several reasons. First, the chronology of the Mogollon region is based primarily on ceramic and architectural data. Periods vary from 350 years to 150 years, which makes it difficult to analyze data from these unequal periods. In addition, communal structure samples size by period range from 10 to 60, and as a result, calculated standard deviations were quite large. Variability in period length and in the number of structures dating to each of these periods did influence the statistical results presented in Chapter 5 for both communal structure frequency and size. Because of these difficulties, which certainly are not anomalies in archaeological data, I conducted the more thorough investigation of communal structures presented in Chapter 5.

At the end of my analyses, I conclude first that as I suggested, population aggregation and social integration are two unique occurrences, although they can and do overlap and intermingle at individual sites. Second, these two organizational strategies are manifested in the archaeological record, specifically in site architecture. Finally, I found that social integration was the primary form of social organization across time in the Mogollon region. Evidence for this, in addition to the raw communal structure counts discussed above, resulted from the detailed analyses of communal structure frequency, location, and size (Table 6.2).

Table 6.2. Comparison of Percent of Sites with Evidence for Aggregation and/or Integration Based on Analyses of Frequency, Location, and Size Data.

Period	Percent of sites with frequency evidence for integration	Percent of sites with location evidence for integration	Percent of sites with size evidence for integration
EPS	83	78	94
MPS	75	83	87
LPS	83	70	76
EP	64	61	58
ELP	59	60	65
LLP	80	33	80

An Interpretation of the Importance of Aggregation and Integration

The ideas of population aggregation and social integration are not new, however stating the these two phenomena occur and measuring them in the archaeological record of the United States Southwest, using architectural remains, is relatively recent. Researchers like Adler (1989), Blake et al. (1986), Crown and Kohler (1994), and others have presented these kinds of studies in the past and archaeologists continue to reflect on aggregation and integration and what these terms mean and how they are relevant to the study of ancient communities.

The relevance of aggregation and integration is reiterated in ethnographic records and in contemporary society. Ethnographic studies presented by (Adler and Wilsusen 1990; Chagnon 1968, 1992; Dozier 1970a, 1970b; Ferguson 1996; Kent 1990b; Ladd 1979). In many cases, new community development is based on concepts of aggregation and integration, with communities forming in both ways and oscillating between the two. In other cases, ethnographic data shows that while integration is promoted within a community, aggregation can also be present. This is the case in some contemporary American Indian communities like San Ildefonso Pueblo in northern New Mexico.

San Ildefonso has a large centrally located "great kiva" on the south side of the pueblo, which at one point was the only communal structure in the community, and the only structure on the south side of the pueblo (A. Gonzales, personal communication, 2006). However, today there are five communal structures, including four smaller kivas (A. Gonzales, personal communication, 2006). The smaller kivas were built as the community grew and the balance of power between the north and south portions of the community became more concrete. I provide this example because if given only the architectural data, one might assume that the community is socially integrated via the large "great kiva." In reality, the community is in fact integrated in that many times, all members of the pueblo share this kiva, but at certain times of the year the northern portion of the community controls the kiva and at other times, the southern portion has specific use rights (A. Gonzales, personal communication, 2004; Tim Martinez, personal communication, 2003). In addition, smaller communal structures have been built by pockets of the community that wish to have their own private places for rituals, events, and meetings. Three of San Ildefonso's kivas are smaller than 20 m^2 and are referred to as kivas by members of the community, the importance of this s discussed in the following section in some depth. Communal structure data from this community, descendents of Ancestral Pueblo peoples provides evidence for aggregation and integration within the community and for a degree of aggregation within a single communal structure.

While, I would not suggest that ethnographic data could be used to provide a one to one comparison of archaeological data and contemporary data, the San Ildefonso example is important, because it illustrates the complicated nature of aggregation and integration. Human interactions are of course always complicated and involve political, social, spiritual, and economic factors. Archaeologists strive to understand this complexity with the tools and information that they have at their disposal. The San Ildefonso example also provides an example of a potential disconnect between archaeological or contemporary architectural data and social behavior. At the same time, however, knowing ways to identify occurrences of aggregation and integration in the archaeological record provides a point from which archaeologists can ask additional questions regarding the nature of social organization in the ancient Southwest and elsewhere.

Future Directions: Defining Mogollon Communal Structures

One contentious aspect of the research presented in Chapter 5 is what constitutes a Mogollon communal structure. Many years ago, Smith (1952, 1990) posed the same question, and he used data from Ancestral Pueblo (Anasazi) sites to form his definitions. In my analysis of the 206 structures included in Appendix II, I found that in general, standardization in communal structure construction was not the case. I also found that the results of my analyses were drastically different when I removed structures that were smaller than 20 m^2. As I stated in a previous chapter, it is difficult to assess the in-field interpretations of other scholars and to make a definitive judgment about whether or not a specific structure qualifies as a communal structure in hindsight.

As previously discussed, Gilman (2006) and others (Lekson 1989) have argued that the small structures traditionally called “kin kivas” are not communal structures at all. While I do agree that some small “out-of-sequence” pit structures may be mislabeled as communal structures in the Mogollon region, ethnographic and archaeological research from other areas of the southwestern United States makes it difficult to dismiss all of these structures. Archaeologists working on the Pajarito Plateau in northern New Mexico find small communal structures associated with six to12 room pueblos (Nisengard, n.d., 2005; K. Schmidt, personal communication, 2003; Vierra et al. 2002).

Pueblo monitors assisting archaeologists working in the area stated that small kivas are quite common (T. Martinez personal communication, 2004). While small communal structures do not serve to integrate large numbers of people, they are important in the community with which they are associated, as either a spiritual meeting place or a place for visitors to join members of the community for rituals and/or events (T. Martinez personal communication, 2004).

An analysis of Mogollon communal structures reveals the importance of these small structures, because they can be used to measure population aggregation and social integration. The presence or absence of small structures affected the percentages calculated using frequency data (Table 6.3). In general, percents did not change too much (e.g., LPS period). However, during the EP period, there is a significant change in the percent of sites with only one communal structure when these structures are excluded.

Table 6.3. Percent Comparisons of Mogollon Sites with One Communal Structure by Period, with Structures Smaller than 20 m^2 and Excluding Those Structures.

Period	Percent of sites with one communal structure based on original frequency data	Percent of sites with one communal structure excluding structures smaller than 20 m^2
EPS	83	83
MPS	75	75
LPS	83	87
EP	64	92
ELP	62	65
LLP	80	75

Small structures, while present during the LPS period, become much more common during the EP period and the change may be a result of the sheer number of these at this time. It is also interesting that during the LLP period there is a decline in the number of sites with a single communal structure, primarily because during this period, some sites have only one, relatively small communal structure to serve the entire site. The LLP period change may reflect aggregation, as it is possible that only certain members of these LLP period communities built communal structures.

Archaeologists in the field must be clear about why they have defined a structure as communal. There should be a standardized criteria used to determine if a structure served a communal function, which is certainly complicated by the lack of standardization in the structures themselves. We must also be sure not to place too much emphasis on the importance of the word ‘communal.’ A community can be a very large or very small entity, and to suggest that there are not enough people living at a site to be integrated by a communal structure (see Lekson 1989) may jeopardize our understanding of the lives of people living in the ancient desert borderlands. After all, our dining and living rooms become communal spaces when they are used as a venue for family meals, rituals, ceremonies, and for entertaining neighbors, family, and other guests!

As a final summary, my analysis of communal structures shows that when change occurs (e.g., population aggregation, population growth), people living in at least some Mogollon villages made a concerted effort to maintain some degree of social stability. Communal structure data provide evidence that in many Mogollon communities there was an emphasis on social integration. Social integration was reinforced within these communities by the construction and use of a single, commonly large, communal structure at a site. Subsequent studies may explore exceptions to integration at sites, which might provide information about the people who built and used the sites and communal structures.

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APPENDIX I

CODES FOR COMMUNAL STRUCTURES DATABASE

Communal Structure Location

I	Isolated structure
P	Prominent location
S	Spatially separated
A	Associated with a particular roomblock or part of the site

Period Codes

1	Early Pit Structure (EPS) (A.D. 250-700)
2	Middle Pit Structure (MPS) (A.D. 700-850)
3	Late Pit Structure (LPS) (A.D. 850-1000)
4	Early Pueblo (EP) (A.D. 1000-1150)
5	Early Late Pueblo (ELP) (A.D. 1150-1300)
6	Late Late Pueblo (LLP) (A.D.1300–1450)
7	Pit Structure Period (PS) (A.D. 250-1000)
8	Pit Structure to Early Pueblo (LPS/EP) (A.D. 250-1150)
9	General Pueblo (P) (A.D. 1000-1150)
10	Late Pueblo (LP) (A.D. 1150-1450)
11	Mogollon (M) (A.D. 200-1400)

Structure Shape Codes

1	Circular
2	Rectangular
3	Circular with lobes
4	D-shaped
5	Oval
6	Square
7	Irregular

Structure Orientation Codes

1	North
2	Northeast
3	East
4	Southeast
5	South
6	Southwest
7	West
8	Northwest
9	No evidence for an entryway

Entryway codes

1	Roof Entry
2	Ramp Entry
3	Stepped Entry
4	Doorway
5	Unknown, destroyed, or could not be identified

Hearth Shape Codes

1	Circular
2	Rectangular
3	Oval
4	Square
5	Irregular
6	No formal hearth
7	Yes, unknown shape
8	Firepit

Topography Codes

1	Terrace
2	Ridge
3	Hilltop
4	Cliff/Cave
5	Floodplain
6	Bench
7	Mesa/Butte
8	Talus Slope/Hillslope

Vegetation Codes

1 Grassland
2 Woodland
3 Forest
4 Desert scrubland
5 Mixed forest and woodland
6 Marshland

Site Size Codes

1 1-49 pit structures or rooms.
2 50-99 pit structures or rooms.
3 100-199 pit structures or rooms.
4 200-299 pit structures or rooms.
5 >300 pit structures or rooms.

Burning

0 Not burned
1 Burned
2 Evidence for intentional burning of the structure
3 Destroyed upon abandonment, but not burned

Note - xxx is used to indicate missing or unavailable data.

APPENDIX II

COMMUNAL STRUCTURES DATABASE

Appendix II.
xxx = missing data

Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 2949	Apache Creek	1	n/a	Great Kiva	ELP
LA 3275	Aragon Highway Salvage	1	n/a	None given	LP
AZ P:16:1	Bear Ruin	1	n/a	Kiva 1	EPS
LA 18888	Beauregard	1	n/a	Structure 1	LPS
LA 34787	Black's Bluff	3	Unknown	Kiva 7	EP
LA 34787	Black's Bluff	3	Unknown	Great Kiva 13	EP
LA 34787	Black's Bluff	3	No, LPS	Pit House 1	LPS
LA 103907	Bluff	1	n/a	House 5	EPS
LA 78337	Bradsby	1	n/a	1	LPS
LA 190	Cameron Creek	5	Unknown	105	LPS/EP
LA 190	Cameron Creek	5	Unknown	127	LPS/EP
LA 190	Cameron Creek	5	Unknown	112	LPS/EP
LA 190	Cameron Creek	5	Unknown	119	LPS/EP
LA 190	Cameron Creek	5	Unknown	Kiva	LPS/EP

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Appendix II.
xxx = missing data

Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 2949	1100-1250	Ceramic date	50	P	Circular	1
LA 3275	1175-1400	Ceramic date	xxx	xxx	xxx	xxx
AZ P:16:1	667 +/- 60; 657vv; 675+/-2	Radiocarbon date; Tree-ring non-cutting date	86	I	Circular	1
LA 18888	750-1000	Ceramic date	64	xxx	Square	6
LA 34787	1000-1175	Ceramic date	14	A	xxx	xxx
LA 34787	1000-1175	Ceramic date	28	P	xxx	xxx
LA 34787	778-800	Tree-ring date range (Anyon and LeBlanc 1980)	37.1	P	Rectangular	2
LA 103907	320 v; 303r	Tree-ring cutting and non-cutting dates	83	P	Circular	1
LA 78337	996v	Tree-ring non-cutting date	16.2	A	Rectangular	2
LA 190	750-1100	Ceramic date	13.3	A	Rectangular	2
LA 190	750-1100	Ceramic date	13.7	A	Rectangular	2
LA 190	750-1100	Ceramic date	18.1	A	Rectangular	2
LA 190	750-1100	Ceramic date	35.3	xxx	Circular	1
LA 190	750-1100	Ceramic date	85.3	xxx	Rectangular/Irregular	7

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 2949	Ramp	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3275	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
AZ P:16:1	Roof entry	1	Southeast	Bench, sipapu, pit, possible loom anchors, hearth	1	0	0	0	1	0	0	0	0	1	1
LA 18888	Ramp	2	120	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 34787	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 34787	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 34787	Ramp	2	East	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 103907	Ramp	2	Southeast	Floor trench, hearth	0	0	0	0	0	0	0	1	0	0	0
LA 78337	xxx	xxx	West	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 190	xxx	xxx	Northwest	Vent	0	1	0	0	0	0	0	0	0	0	0
LA 190	xxx	xxx	South	Vent	0	1	0	0	0	0	0	0	0	0	0
LA 190	Roof entry	1	Southeast	Vent, constructed in blocked entryway, hearth	0	1	0	0	0	0	0	0	0	0	0
LA 190	Ramp	2	101-S/East	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 190	Ramp (with steps)	2	173	Hearth	0	0	0	0	0	0	0	0	0	0	0

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Appendix II.
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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 2949	xxx	xxx	xxx	Cruzville	Catron Co, Western New Mexico
LA 3275	xxx	xxx	xxx	Squirrel Springs Canyon	Catron Co, Western New Mexico
AZ P:16:1	1	Circular	1	xxx	Navajo Co, east-central Arizona
LA 18888	xxx	xxx	xxx	Hendricks Peak	Grant Co, southwestern New Mexico
LA 34787	xxx	xxx	xxx	Mangus Springs	Grant Co, southwestern New Mexico
LA 34787	xxx	xxx	xxx	Mangus Springs	Grant Co, southwestern New Mexico
LA 34787	xxx	xxx	xxx	Mangus Springs	Grant Co, southwestern New Mexico
LA 103907	1	Circular (stone lined)	1	Alma	Catron Co, Western New Mexico
LA 78337	xxx		xxx	Allie Canyon	Grant Co, southwestern New Mexico
LA 190	xxx	xxx	xxx	Hurley West	Grant Co, southwestern New Mexico
LA 190	xxx	xxx	xxx	Hurley West	Grant Co, southwestern New Mexico
LA 190	1	Square	4	Hurley West	Grant Co, southwestern New Mexico
LA 190	1	Circular	1	Hurley West	Grant Co, southwestern New Mexico
LA 190	1	Irregular	5	Hurley West	Grant Co, southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 2949	Tularosa River	Terrace	Woodland	6420	Tularosa/Reserve
LA 3275	xxx	Ridge	Forest	6560	Tularosa
AZ P:16:1	Forestdale Creek	Fifth terrace	Forest	6560	Pithouse Period/Forestdale
LA 18888	Mimbres River	Ridge	Grassland	6220	Three-Circle
LA 34787	Forestdale Creek	Hilltop	Grassland	4360	Mimbres/Mangus
LA 34787	Forestdale Creek	Hilltop	Grassland	4360	Mimbres/Mangus
LA 34787	Forestdale Creek	Hilltop	Grassland	4360	Three-Circle
LA 103907	Forestdale Creek	Hilltop	Piñon/Juniper	5040	Hilltop/Georgetown
LA 78337	Mimbres River	Ridge	Desert Scrubland	6370	Classic
LA 190	Mimbres River	Ridge	Grassland	5865	Three-Circle/ Early Classic
LA 190	Mimbres River	Ridge	Grassland	5865	Three-Circle/ Early Classic
LA 190	Mimbres River	Ridge	Grassland	5865	Three-Circle/ Early Classic
LA 190	Mimbres River	Ridge	Grassland	5865	Three-Circle/ Early Classic
LA 190	Mimbres River	Ridge	Grassland	5865	Three-Circle/ Early Classic

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 2949	75 rooms	1	xxx	xxx
LA 3275	1 pithouse, 1 roomblock	1	xxx	xxx
AZ P:16:1	40+/-	1	Sand floor, plaster clay walls	xxx
LA 18888	8+ pithouses	1	xxx	xxx
LA 34787	12 roomblocks	4	Adobe and cobble bermed	xxx
LA 34787	12 roomblocks	4	xxx	xxx
LA 34787	12 roomblocks	4	xxx	xxx
LA 103907	30-35 pithouses	1	Bedrock floor	xxx
LA 78337	xxx	xxx	xxx	xxx
LA 190	110 rooms (A.D. 1000-1175)	3	xxx	0
LA 190	110 rooms (A.D. 1000-1175)	3	xxx	0
LA 190	110 rooms (A.D. 1000-1175)	3	Cobblestone masonry and adobe	0
LA 190	110 rooms (A.D. 1000-1175)	3	xxx	xxx
LA 190	110 rooms (A.D. 1000-1175)	3	xxx	xxx

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Appendix II.
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Site Number	Additional Information and Notes
LA 2949	Measured from map in Peckham's report. Large communal room, ARMS says 27 pithouses and 7 roomblocks.
LA 3275	Possibly two communal structures.
AZ P:16:1	Shaped like a turtle, main chamber is circular; located in the outskirts of the village in the Forestdale Valley. A.D. 657 is a tree-ring date (Diehl and Le Blanc 2001). 38 m2 with bench, A. D. 702 cutting or non-cutting date from Robinson and Cameron 1991.
LA 18888	Also NM Z:1:27. Upper Mimbres Valley; 5 m long entryway. 65.5 (Linse 1999).
LA 34787	Also MC 144.
LA 34787	Also MC 144.
LA 34787	Also MC 144. 2.75 m long entryway.
LA 103907	Also AZ P:16:20. Lateral entryway, 3x the size of all other structures at the site, located in the center of the site, bedrock walls.
LA 78337	Also NM Y:4:35. Part of roomblock.
LA 190	Remodeled pit house; part of roomblock; 110 rooms in 4 roomblocks from 1000-1175.
LA 190	Remodeled pit house; part of roomblock; 110 rooms in 4 roomblocks from 1000-1175. 12.8 m2 (Linse 1999).
LA 190	Remodeled pit house; part of roomblock; 110 rooms in 4 roomblocks from 1000-1175. 12.8 m2 (Linse 1999).
LA 190	2.4 m long entryway; 110 rooms from 1000-1175.
LA 190	One hundred and thirty-eight rooms and 40 pit structures (Wheat 1955) 110 rooms in four roomblocks from 1000-1175. 44.3 m2 (Linse 1999).

Appendix II.
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Site Number	References
LA 2949	Lekson 1996 (room counts); Peckham 1958.
LA 3275	Wendorf 1954.
AZ P:16:1	Diehl and Le Blanc 2001; Haury 1940, 1985; Wheat 1955 (size data).
LA 18888	Anyon and LeBlanc 1980; LeBlanc 1976; Linse 1999.
LA 34787	Fitting et al. 1972.
LA 34787	Fitting et al. 1972.
LA 34787	Anyon and LeBlanc 1980, Brunet 1972.
LA 103907	Haury 1985; Haury and Sayles 1947.
LA 78337	Anyon and LeBlanc 1980.
LA 190	Anyon and LeBlanc 1980; Bradfield 1931; Wheat 1955.
LA 190	Anyon and LeBlanc 1980; Bradfield 1931; Wheat 1955.
LA 190	Anyon and LeBlanc 1980; Bradfield 1931; Wheat 1955.
LA 190	Anyon and LeBlanc 1980; Bradfield 1931; Wheat 1955.
LA 190	Anyon and LeBlanc 1980; Bradfield 1931; Wheat 1955.

Appendix II.
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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
Carter Ranch	Carter Ranch	3	Yes	Kiva 1	EP
Carter Ranch	Carter Ranch	3	Yes	Room 16	EP
Carter Ranch	Carter Ranch	3	First CS at site, earlier than others	Great Kiva	EP
AZ Q:15:3	Casa Malpais	1	n/a	None given	ELP
AZ P:14:24	Chodistaas	2	Yes	Room 2a	ELP
AZ P:14:24	Chodistaas	2	Yes	Room 18a	ELP
LA 5841	Cooney Ranch #1	1	n/a	Communal Structure 1	LPS
LA 5066	Cottonwood Creek Pueblo	1	n/a	None given	EP
W:10:15	Crooked Ridge	2	Unknown	Pithouse 9	EPS
W:10:15	Crooked Ridge	2	Unknown	Structure 19	EPS
LA 32536	Cuchillo	1	n/a	1	EPS
LA 6538	Diablo	3	No, EP	Feature 7	EP
LA 6538	Diablo	3	Unknown	Feature 5	EPS
LA 6538	Diablo	3	Unknown	Feature 14	EPS
LA 6783	Dinwiddie	2	Yes	Feature 14	EP

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Appendix II.
xxx = missing data

Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
Carter Ranch	1000-1150	Ceramic date	8.1	P	D-shaped	4
Carter Ranch	1000-1150	Ceramic date	8.4	A	Rectangular	2
Carter Ranch	1116-1156	Archaeomagnetic date range	235	S	Circular	1
AZ Q:15:3	1268-1274	Tree-ring cutting date range	xxx		xxx	xxx
AZ P:14:24	1263-1290	Tree-ring cutting date range	33.75	A	Rectangular	2
AZ P:14:24	1263-1290	Tree-ring cutting date range	50	A	Rectangular	2
LA 5841	900-980	Tree-ring date range	64	P	Rectangular	2
LA 5066	1000-1150	Ceramic date	xxx	xxx	xxx	xxx
W:10:15	400-600	Ceramic date	82	P	Circular	1
W:10:15	400-600	Ceramic date	111.6	P	Rectangular	2
LA 32536	550-650	Ceramic date	41	xxx	Circular with lobes	3
LA 6538	1000-1150	Ceramic date	16.8	S	Square	6
LA 6538	400-650	Ceramic date	31.9	xxx	Oval with lobes	5
LA 6538	550-650	Ceramic date	36.3	xxx	Circular with lobes	5
LA 6783	1000-1150	Ceramic date	12.8	A	Square	6

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Appendix II.
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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
Carter Ranch	xxx	xxx	East to SE	Deflector, ash pit, hearth, bench, burials	0	0	1	0	1	0	2	0	0	1	0
Carter Ranch	xxx	xxx	xxx	Square ash pit, deflector, vent, platform, bench, hearth	0	1	1	0	1	0	0	0	0	1	1
Carter Ranch	Ramp (divided into two sections)	2	100/Southeast	Bench, rectangular pits, masonry pillars, hearth	0	0	0	0	3	0	0	0	0	1	5
AZ Q:15:3	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
AZ P:14:24	xxx	xxx	Southeast	Platform	0	0	0	0	0	0	0	0	0	0	1
AZ P:14:24	xxx	xxx	Southeast	Platform	0	0	0	0	0	0	0	0	0	0	1
LA 5841	xxx	xxx	xxx	Center post hole	0	0	0	0	0	0	0	0	0	0	0
LA 5066	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
W:10:15	Ramp (with steps)	2	Southwest	Pit, hearth	0	0	0	0	1	0	0	0	0	0	0
W:10:15	Ramp (with steps)	2	East	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 32536	xxx	xxx	110	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 6538	Ramp	2	xxx	Vent, Bench, hearth	0	1	0	0	0	0	0	0	0	1	0
LA 6538	Ramp	2	East	Foot grooves, hearth	0	0	0	0	0	0	0	0	1	0	0
LA 6538	Ramp	2	92/East	Foot drums, basin shaped pits, hearth	0	0	0	0	2	0	0	0	1	0	0
LA 6783	xxx	xxx	East	Hearth, vent	0	1	0	0	0	0	0	0	0	0	0

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Appendix II.
xxx = missing data

Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
Carter Ranch	1	Rectangular, slab lined	2	xxx	East-central Arizona
Carter Ranch	1	D-shaped, clay lined	5	xxx	East-central Arizona
Carter Ranch	1	Circular	1	xxx	East-central Arizona
AZ Q:15:3	xxx	xxx	xxx	Springerville	Eastern Arizona
AZ P:14:24	xxx	xxx	xxx	Chediski Peak	East-central Arizona
AZ P:14:24	xxx	xxx	xxx	Chediski Peak	East-central Arizona
LA 5841	xxx	xxx	xxx	Hay Mesa	Grant Co, southwestern New Mexico
LA 5066	xxx	xxx	xxx	Allie Canyon	Grant Co, southwestern New Mexico
W:10:15	1	Circular	1	Point of Pines East	East-central Arizona
W:10:15	1	Unknown shape	7	Point of Pines East	East-central Arizona
LA 32536	1	Circular	1	Cuchillo	Sierra Co, southwestern New Mexico
LA 6538	1	Square	4	Gila Hot Springs	Southwestern New Mexico
LA 6538	1	Circular	1	Gila Hot Springs	Southwestern New Mexico
LA 6538	1	Oval	3	Gila Hot Springs	Southwestern New Mexico
LA 6783	1	Square	4	Cliff	Grant Co, southwestern New Mexico

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Appendix II.
xxx = missing data

Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
Carter Ranch	xxx	xxx	xxx	5800	Carrizo
Carter Ranch	xxx	xxx	xxx	5800	Carrizo
Carter Ranch	xxx	xxx	xxx	5800	Carrizo
AZ Q:15:3	Little Colorado River	Terrace	Desert Scrubland	6920	Late Pueblo
AZ P:14:24	xxx	xxx	xxx	6079	Late Pueblo
AZ P:14:24	xxx	xxx	xxx	6079	Late Pueblo
LA 5841	Mimbres River	Terrace	Ponderosa Pine forest and piñon/juniper woodland	6840	Three-Circle
LA 5066	Cottonwood Creek and Mimbres River	Terrace	Woodland	6300	Classic
W:10:15	Black River	Ridge	Woodland	6200	Pithouse/Circle Prairie
W:10:15	Black River	Ridge	Woodland	6200	Georgetown/Circle Prairie
LA 32536	Rio Grande	Floodplain/Valley	Desert Scrubland	4820	Georgetown
LA 6538	Upper Gila drainage	Terrace	Woodland	5640	Classic
LA 6538	Upper Gila drainage	Terrace	Woodland	5640	Georgetown
LA 6538	Upper Gila drainage	Terrace	Woodland	5640	Georgetown
LA 6783	Gila River	Terrace	Woodland	5420	Mangas

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Appendix II.
xxx = missing data

Site Number	Site Size	Site Size Codes	Construction Technique	Burning
Carter Ranch	xxx	xxx	xxx	0
Carter Ranch	xxx	xxx	xxx	xxx
Carter Ranch	xxx	xxx	xxx	2
AZ Q:15:3	xxx	xxx	xxx	xxx
AZ P:14:24	9:1 ratio. 18 room pueblo	1	xxx	xxx
AZ P:14:24	9:1 ratio. 18 room pueblo	1	xxx	0
LA 5841	xxx	xxx	xxx	3
LA 5066	75 rooms; 4 roomblocks	2	Cobble-adobe	xxx
W:10:15	100 room pithouse village	3	xxx	2
W:10:15	100 room pithouse village	3	xxx	2
LA 32536	75 rooms	2	xxx	1
LA 6538	xxx	xxx	Masonry walls with columns	0
LA 6538	10 pithouses	1	xxx	xxx
LA 6538	10 pithouses	1	xxx	xxx
LA 6783	3 pithouses, 2 roomblocks, 50 rooms	2	Cobble and adobe	xxx

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Appendix II.
xxx = missing data

Site Number	Additional Information and Notes
Carter Ranch	Communal structure is located within an enclosed plaza.
Carter Ranch	
Carter Ranch	Ten meters NW of the roomblock, burned after abandonment. Earlier than other two. 1116-1156 (cutting dates).
AZ Q:15:3	Great Kiva, vegetation includes saltbush and wolfberry. 1268-1274 (cutting dates).
AZ P:14:24	Northern portion of site. 9:1 ratio; protokiva. 1232-1288 (cutting dates). Measured from map in Lowell 1999.
AZ P:14:24	9:1 room to kiva ratio, walled plaza. Measured from map in Lowell 1999. Structure located in the southern area of the site, smaller room attached to the room, possibly a protokiva. 1232-1288 (cutting dates).
LA 5841	Dismantled during Classic Period, 40-50 room pueblo, partially excavated.
LA 5066	75 rooms in 4 roomblocks, possible Great Kiva.
W:10:15	100 room pithouse village, soil is black. 64 m2 (Wheat 1955)
W:10:15	100 room pithouse village, soil is black.
LA 32536	Burned.
LA 6538	Intersects Pithouse 7. 800-1000 Mangas, 17.2 m2 (Linse 1999).
LA 6538	5.8m long entryway. 40.5 m2 (Linse 1999).
LA 6538	3.62m long entryway.
LA 6783	Also 34771. 13.7 m2 (Linse 1999).

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Appendix II.
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Site Number	References
Carter Ranch	Laboratory of Anthropology, Santa Fe, New Mexico.
Carter Ranch	Laboratory of Anthropology, Santa Fe, New Mexico.
Carter Ranch	Laboratory of Anthropology, Santa Fe, New Mexico.
AZ Q:15:3	Rick Karl, personal communication
AZ P:14:24	Lowell 1999; J. Jefferson Reid, personal communication.
AZ P:14:24	Lowell 1999; J. Jefferson Reid, personal communication.
LA 5841	Stokes 2000b.
LA 5066	Laboratory of Anthropology, Santa Fe, New Mexico.
W:10:15	Wheat 1955: 58-64.
W:10:15	Wheat 1955: 58-64.
LA 32536	Anyon and Creel 2003; Kirkpatrick and Laumbaugh 1988.
LA 6538	Anyon and LeBlanc 1980; Dycus 1997; Hammack 1966; Linse 1999.
LA 6538	Anyon and LeBlanc 1980; Dycus 1997; Hammack 1966; Linse 1999.
LA 6538	Anyon and LeBlanc 1980; Dycus 1997; Hammack 1966; Linse 1999.
LA 6783	Anyon and LeBlanc 1980; Linse 1999.

Appendix II.
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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 6783	Dinwiddie	2	Yes	Feature 11	EP
W:6:5	Dry Prong	1	n/a	Kiva 1	EP
LA 78963	Elk Ridge	1	n/a	Kiva	EP
LA 68188	Fox Place	1	n/a	None given	ELP
LA 635	Galaz	4	No	Kiva 107	EP
LA 635	Galaz	4	No	73 (Parrot Kiva)	EP
LA 635	Galaz	4	No, EPS	Unit 8/ Great Kiva 8/Pithouse 8	EPS
LA 635	Galaz	4	No, LPS	42A	LPS
LA 6083	Gallita Springs	2	No, LPS	Feature 38	LPS
LA 6083	Gallita Springs	2	No, MPS	Feature 40	MPS

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Appendix II.
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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 6783	1000-1150	Ceramic date	13.3	A	Square	6
W:6:5	1000-1150	Ceramic date	192	P	Rectangular	2
LA 78963	1000-1150	Ceramic date	100	P	Rectangular	2
LA 68188	1215-1290	Archaeomagnetic date range	18.5	A	Rectangular	2
LA 635	1000-1150	Ceramic date	12.8	A	Rectangular	2
LA 635	900-1150	Ceramic and construction dates	146.8	P	Rectangular	2
LA 635	650+/-60	Radiocarbon date	37	A	Circular with lobes	3
LA 635	750-1000	Ceramic date	175.3	P	Rectangular	2
LA 6083	875-950	Tree-ring date range	16	xxx	Square	6
LA 6083	800r	Tree-ring cutting date	20	P	Square	6

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 6783	xxx	xxx	East	Hearth, vent	0	1	0	0	0	0	0	0	0	0	0
W:6:5	Stepped entryway	3	ENE	Separate room in kiva, footdrum, bench extends around entire kiva	0	0	0	0	0	0	0	0	1	1	1
LA 78963	xxx	xxx	55	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 68188	xxx	xxx	xxx	Hearth	0	0	0	0	1	0	0	0	0	0	1
LA 635	Roof entry	1	Northeast	Vent, burial, hearth	0	1	0	0	0	0	1	0	0	0	0
LA 635	Stepped entryway	3	82/East	Sipapu filled with fine white quartz sand, two polished green stones, Macaw burial with turquoise beads, hearth	1	0	0	0	0	0	0	0	0	0	1
LA 635	Ramp with lobes	2	85/East	Sipapu, pits, hearth	1	0	0	0	1	0	0	0	0	0	0
LA 635	Ramp	2	125 (SE)	Sipapus (2 filled with non local quartz sand, 4 with local sand), burials, hearth	5	0	0	0	0	0	55	0	0	0	0
LA 6083	Ramp	2	East	Sipapu, deflector, vent, hearth	1	1	1	0	0	0	0	0	0	0	0
LA 6083	xxx	xxx	South	Hearth	0	0	0	0	0	0	0	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 6783	1	Square	4	Cliff	Grant Co, southwestern New Mexico
W:6:5	1	Circular	1	Freezeout Mtn.	East-central Arizona
LA 78963	xxx	xxx	xxx	Allie Canyon	Grant Co, southwestern New Mexico
LA 68188	1	Unknown shape	xxx	Roswell South	Chavez Co, southeastern New Mexico
LA 635	1	Oval (adobe lined)	3	San Lorenzo	Grant Co, southwestern New Mexico
LA 635	1	Square (double cobble lined-16 layers of adobe; 1.12x0.94x0.18)	4	San Lorenzo	Grant Co, southwestern New Mexico
LA 635	1	Oval (70x65x25 cm, adobe and rock lined)	3	San Lorenzo	Grant Co, southwestern New Mexico
LA 635	1	Square (adobe)	4	San Lorenzo	Grant Co, southwestern New Mexico
LA 6083	1	Circular	1	Gallo Mountains East	Catron Co, Western New Mexico
LA 6083	1	Circular	1	Gallo Mountains East	Catron Co, Western New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 6783	Gila River	Terrace	Woodland	5420	Mangas
W:6:5	xxx	Ridge/Bench	Piñon/Juniper	9000	Reserve
LA 78963	Mimbres River	Terrace	Grassland	6330	Classic
LA 68188	Rio Hondo	Floodplain/Valley	Grassland	3673	Jornada
LA 635	Mimbres River	First terrace	Grassland	5840	Classic
LA 635	Mimbres River	First terrace	Grassland	5840	Classic
LA 635	Mimbres River	First terrace	Grassland	5840	San Francisco
LA 635	Mimbres River	First terrace	Grassland	5840	Three-circle
LA 6083	xxx	Hill slope	Forest	7960	Early Reserve
LA 6083	xxx	Hill slope	Forest	7960	Three-Circle

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 6783	3 pithouses, 2 roomblocks, 50 rooms	2	Stone masonry	xxx
W:6:5	18 rooms	1	Masonry, semi subterranean	0
LA 78963	Multiple roomblocks	xxx	xxx	xxx
LA 68188	10 pithouses	1	xxx	0
LA 635	150 rooms	3	Cobble lined	0
LA 635	150 rooms	3	Cobble stone masonry	2
LA 635	150 rooms	3	Puddled adobe	1
LA 635	150 rooms	3	Adobe with plaster walls	2
LA 6083	75 rooms	2	Coursed masonry	1
LA 6083	75 rooms	2	xxx	0

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Site Number	Additional Information and Notes
LA 6783	Also LA 34771. ARMS says structure is 4.5 m2. 14.0 m2 (Linse 1999).
W:6:5	Eighteen rooms in U-shaped pueblo, four rooms associated with kiva that surround the stepped entrance (area including rooms is 306 sq meters).
LA 78963	
LA 68188	Thirty-four pits at site, hearth, 10 pithouses; serpent painted (green head with forward pointing horn) in a deep rectangular pit in the kiva. A.D. 1225-1350 (ARMS).
LA 635	Middle Mimbres Valley; remodeled twice, new hearth, new vent shaft. 11.5 m2 (Gilman and LeBlanc n.d.)
LA 635	Middle Mimbres Valley 8.08x2.64-3.5m three stepped entryway; burned, dedicatory and termination objects, macaw with turquoise and shell wrapped around its legs.
LA 635	Middle Mimbres Valley; Lateral entryway with lobes; burned, Unit 4 constructed atop burned remains of structure, crystal in center posthole, 2x size of domestic structures. C14 650+/-60.
LA 635	Middle Mimbres Valley; two infant burials (crania missing), one burial, 55 post abandonment burials purposefully burned, four rooms built atop kiva - one walled plaza.
LA 6083	Lateral entryway; measured from map; destroyed in fire, paint.
LA 6083	F51-possible kiva reserve post-38; measured from map.

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Appendix II.
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Site Number	References
LA 6783	Anyon and LeBlanc 1980; Linse 1999.
W:6:5	Olson 1960.
LA 78963	Anyon and Creel 2003.
LA 68188	Crotty 1995; Schaafsma and Wiseman 1992:178; Wiseman 1976, 1991, 1993.
LA 635	Anyon and LeBlanc 1984.
LA 635	Anyon and LeBlanc 1980, 1984; LeBlanc 1976.
LA 635	Anyon and LeBlanc 1980, 1984; LeBlanc 1977.
LA 635	Anyon and LeBlanc 1980, 1984; LeBlanc 1976.
LA 6083	Forest Service: Gallito Springs Project, Laboratory of Anthropology, Santa Fe, New Mexico.
LA 6083	Forest Service: Gallito Springs Project, Laboratory of Anthropology, Santa Fe, New Mexico.

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Appendix II.
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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 11075	Gatton's Park	3	No, EP	None given	EP
LA 11075	Gatton's Park	3	Unknown	None given	Pit Structure
LA 11076	Gatton's Park	3	Unknown	None given	Pit Structure
LA 4913	Gila Cliff Dwellings	2	Yes	Room 17	ELP
LA 4913	Gila Cliff Dwellings	2	Yes	Room 27	ELP
LA 4026	Goesling Ranch	1	n/a	None given	ELP
LA 8780	Grasshopper	3	Yes	Great Kiva	LLP
LA 8780	Grasshopper	3	Yes	Room 341	LLP
LA 8780	Grasshopper	3	Yes	Room 246	LLP
AZ P:14:8	Grasshopper Spring	1	n/a	Room 7/Protokiva	ELP
LA 6536	Graveyard Point	2	Unknown	Feature 8	EP
LA 6536	Graveyard Point	2	Unknown	Feature 9	EP
LA 1867	Harris	4	No, EPS	House 14	EPS
LA 1867	Harris	4	No, LPS	House 10	LPS
LA 1867	Harris	4	No	8	MPS
LA 1867	Harris	4	No	House 23	MPS

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 11075	1000-1150	Ceramic date	xxx	A	Circular	1
LA 11075	550-1000	General period date	81	P	Circular	1
LA 11076	550-1100	General period date	121	P	Circular	1
LA 4913	1287	Tree-ring cutting date	31.5	A	Rectangular/Irregular	2
LA 4913	1270-1290	Tree-ring non-cutting date range	25	A	Rectangular	2
LA 4026	1100-1250	Ceramic date	46.12	P	Circular	1
LA 8780	1330	Tree-ring cutting date	181.8	P	Rectangular	2
LA 8780	1300-1400	Ceramic and construction dates	12.48	A	Rectangular	2
LA 8780	1300-1400	Ceramic and construction dates	29.19	A	Rectangular	2
AZ P:14:8	1270-1290	Tree-ring cutting date	39	A	Square	6
LA 6536	1000-1150	Ceramic date	11.4	S	Rectangular	2
LA 6536	1000-1150	Ceramic date	16.8	S	Rectangular	2
LA 1867	582r	Tree-ring cutting date	44	P	D-shaped/Oval	4
LA 1867	877v; 877r; 736vv; 843vv; 846vv; 854vv; 858vv; 860vv; 869vv; 870vv	Tree-ring non-cutting dates	143	P	Rectangular	2
LA 1867	650-750	Ceramic date	70.9	P	D-shaped/Oval	4
LA 1867	836vv; 838vv	Tree-ring non-cutting dates	45.5	P	Rectangular	2

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 11075	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 11075	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 11076	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 4913	Doorway	4	Southeast	Mural art, wall niches, platform, storage chambers (Rooms 18-19)	0	0	0	1	1	1	0	0	0	0	1
LA 4913	Doorway	4	Southeast	Shelf, storage pit	0	0	0	0	0	1	0	0	0	0	1
LA 4026	Ramp	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 8780	Roof entry or from adjacent Room 16	1/4	East	Footdrum, hearths	0	1	0	0	0	0	0	0	1	0	0
LA 8780	Roof entry	1	East	Blocked doorway, hearths	0	1	0	0	0	0	0	0	0	0	0
LA 8780	Roof entry	1	East	2 fire pits, 2 mealing bins, blocked doorway, hearths	0	0	0	3	0	0	0	0	0	0	1
AZ P:14:8	xxx	xxx	xxx	Platform	0	0	0	0	0	0	0	0	0	0	1
LA 6536	xxx	xxx	Northwest	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6536	xxx	xxx	South	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 1867	Ramp	2	East	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 1867	Ramp	2	138	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 1867	Ramp	2	104	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 1867	Ramp	2	138	Hearth	0	0	0	0	0	0	0	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 11075	xxx	xxx	xxx	Allie Canyon	Grant Co, southwestern New Mexico
LA 11075	xxx	xxx	xxx	Allie Canyon	Grant Co, southwestern New Mexico
LA 11076	xxx	xxx	xxx	Allie Canyon	Grant Co, southwestern New Mexico
LA 4913	0	No formal hearth	6	Little Turkey Park	Southwestern New Mexico
LA 4913	0	No formal hearth	6	Little Turkey Park	Southwestern New Mexico
LA 4026	xxx	xxx	xxx	Mesa Perada	Catron Co, Western New Mexico
LA 8780	2	Rectangular and slablined	1	Chediski Peak	East-central Arizona
LA 8780	1	Circular and slablined	1	Chediski Peak	East-central Arizona
LA 8780	5	3 circular and slablined, 2 rectangular and slablined	1	Chediski Peak	East-central Arizona
AZ P:14:8	xxx	xxx	xxx	Chediski Peak	East-central Arizona
LA 6536	xxx	xxx	xxx	Gila Hot Springs	Southwestern New Mexico
LA 6536	xxx	xxx	xxx	Gila Hot Springs	Southwestern New Mexico
LA 1867	1	Unknown shape	7	San Lorenzo	Grant Co, southwestern New Mexico
LA 1867	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico
LA 1867	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico
LA 1867	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 11075	xxx	Hilltop/Bench	Woodland	6625	Classic
LA 11075	xxx	Hilltop/Bench	Woodland	6625	San Francisco-Three Circle
LA 11076	xxx	Hilltop/Bench	Woodland	6625	Late Pithouse
LA 4913	Gila River	Cliff/Cave	Woodland	6000	Tularosa
LA 4913	Gila River	Cliff/Cave	Woodland	6000	Tularosa
LA 4026	xxx	Ridge	Woodland	6380	Post Classic
LA 8780	Salt River	Floodplain	Woodland	6000	Post Classic
LA 8780	Salt River	Floodplain	Woodland	6000	Post Classic
LA 8780	Salt River	Floodplain	Woodland	6000	Post Classic
AZ P:14:8	Salt River	Floodplain	Woodland	5840	Post Classic
LA 6536	xxx	Terrace	Woodland	5600	Classic
LA 6536	xxx	Terrace	Woodland	5600	Classic
LA 1867	Mimbres River	Bench	Grassland	6000	Georgetown
LA 1867	Mimbres River	Bench	Grassland	6000	Three-Circle
LA 1867	Mimbres River	Bench	Grassland	6000	San Francisco
LA 1867	Mimbres River	Bench	Grassland	6000	Three-Circle

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 11075	25-30 room pueblo	1	xxx	0
LA 11075	25-30 room pueblo	1	xxx	0
LA 11076	25-30 room pueblo	1	xxx	xxx
LA 4913	40 rooms	1	Masonry walls	0
LA 4913	40 rooms	1	Masonry walls	0
LA 4026	320 rooms, 8 roomblocks	5	Masonry walls	0
LA 8780	500 rooms	5	Masonry walls	0
LA 8780	500 rooms	5	Masonry walls	xxx
LA 8780	500 rooms	5	Masonry walls	xxx
AZ P:14:8	9 rooms	1	Masonry walls	0
LA 6536	xxx	xxx	xxx	xxx
LA 6536	xxx	xxx	xxx	xxx
LA 1867	8 pithouses	1	xxx	1
LA 1867	8 pithouses	1	xxx	1
LA 1867	8 pithouses	1	xxx	xxx
LA 1867	8 pithouses	1	xxx	1

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Site Number	**Additional Information and Notes**
LA 11075	Kiva incorporated into roomblock; 25-30 room pueblo, four smaller roomblocks, seven pithouse depressions (Lekson 1989).
LA 11075	Great Kivas observed by Stokes. Size via site sketch.
LA 11076	Great Kiva set off from roomblocks; two round giant kivas.
LA 4913	Also LA 10045. Cliff dwellings, very short occupation - one generation, doors into two attached storage rooms.
LA 4913	Also LA 10045. Cliff dwellings, very short occupation - one generation.
LA 4026	320 rooms, five roomblocks and a Great Kiva; ARMS says the site is Ancestral Pueblo.
LA 8780	Also AZ P:14:1. 6:1 room ratio. Kiva is a converted plaza. 500 room plaza; three large roomblocks + smaller ones; three plazas.
LA 8780	Also AZ P:14:1. Roomblock 7.
LA 8780	Also AZ P:14:1. 6:1 room ratio. Proto-kiva: Room block 3.
AZ P:14:8	7:1 ratio. eight room pueblo, smaller room attached to kiva. 1278 (cutting dates). Size measured from map in Lowell 1999.
LA 6536	
LA 6536	
LA 1867	Also NM Q:1:14. Burned; 4.5m long entryway. A.D. 582 (tree-ring date). 38 m2 (Wheat 1955).
LA 1867	Also NM Q:1:14. Mimbres Valley; six meter long entryway; burned. A.D. 736,843,846,854,858 (tree-ring dates). 135 m2 (Wheat 1955).
LA 1867	Also NM Q:1:14. Mimbres Valley, five meter long entryway.
LA 1867	Also NM Q:1:14. Mimbres Valley, burned. A.D. 836, 838 (tree-ring date). 50 m2 (Wheat 1955).

Appendix II.
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Site Number	References
LA 11075	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 11075	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 11076	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 4913	Anderson et al. 1986 ; Gadd 1993.
LA 4913	Anderson et al. 1986 ; Gadd 1993.
LA 4026	Jackson 1972; Marshall et al.. 1979.
LA 8780	Lowell 1999; Reid and Whittlesley 1990; Riggs 1999, 2000, 2003.
LA 8780	Lowell 1999; Reid and Whittlesley 1990; Riggs 1999, 2000, 2003.
LA 8780	Lowell 1999; Reid and Whittlesley 1990; Riggs 1999, 2000, 2003.
AZ P:14:8	Lowell 1999; Reid and Whittlesley 1990; Riggs 1999, 2000, 2003.
LA 6536	Anyon and LeBlanc 1980; Hammack 1966.
LA 6536	Anyon and LeBlanc 1980; Hammack 1966.
LA 1867	Anyon and LeBlanc 1980; Diehl 1996, 1997; Diehl and LeBlanc 2001; Haury 1936; Wheat 1955.
LA 1867	Anyon and LeBlanc 1980; Diehl 1996, 1997; Diehl and LeBlanc 2001; Haury 1936; Wheat 1955.
LA 1867	Anyon and LeBlanc 1980; Diehl 1996, 1997; Diehl and LeBlanc 2001; Haury 1936; Wheat 1955.
LA 1867	Anyon and LeBlanc 1980; Diehl 1996, 1997; Diehl and LeBlanc 2001; Haury 1936; Wheat 1955.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 8682	Higgins Flat	3	Under Great Kiva, coeval with Kiva 2	Kiva 1	ELP
LA 8682	Higgins Flat	3	Superimposed on Kiva 1	Great Kiva	ELP
LA 8682	Higgins Flat	3	Coeval with Kiva 1	Kiva 2	ELP
LA 3279	Hough site	2	No	Room 1	ELP
LA 3279	Hough site	2	No	Great Kiva	ELP
LA 467	Hulbert	1	n/a	None given	LLP
LA 33642	Jennie Riley Stallworth	2	Unknown	Great Kiva	EP
LA 33642	Jennie Riley Stallworth	2	Unknown		EP
Lagoon	Lagoon	1	n/a	None given	EPS
LA 71877	Lake Roberts Vista	2	Unknown	Great Kiva	LPS
LA 71877	Lake Roberts Vista	2	Unknown	None given	Pit Structure
LA 5390	Largo Creek	1	n/a	None given	LP
LA 6000	Lee/Fort West Hill	6	Yes, with 22 and 23	21	LPS

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 8682	1175-1250	Ceramic date	99.75	P	D-shaped	4
LA 8682	1249-1281	Tree-ring cutting date range	128.4	P	Rectangular	2
LA 8682	1175 to 1250	Ceramic date	48	A	Rectangular	2
LA 3279	1123/24; 1119-1123 (six non-cutting dates cluster)	Tree-ring cutting date; non-cutting dates cluster	12.23	A	Rectangular	1
LA 3279	1080-1150	Ceramic date	97.38	P	Circular	2
LA 467	1300	Not available	30.48	P	Square	6
LA 33642	1000-1100	Ceramic date	xxx	P	Rectangular	2
LA 33642	1000-1100	Ceramic date	xxx	xxx	Rectangular	2
Lagoon	550-650	Ceramic date	35.3	S	Circular with lobes	3
LA 71877	900v	Tree-ring non-cutting date	60	P	Rectangular	2
LA 71877	600-1000	General period date	16.72	xxx	xxx	xxx
LA 5390	1175-1400	Ceramic date	xxx	xxx	xxx	xxx
LA 6000	900 to 1000	Ceramic date	12	A	xxx	xxx

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Appendix II.
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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 8682	Ramp	2	Southeast	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 8682	xxx	xxx	Southeast	Flat, circular, painted stones on floor of structure, hearth	0	0	0	0	0	0	0	0	0	0	1
LA 8682	Roof	1	East	Vent, hearth	0	1	0	0	0	0	0	0	0	0	0
LA 3279	Ramp with rooms on sides	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3279	Ramp	2	Southeast	Foot drums, pits, burial, hearth	0	0	0	0	1	0	1	0	1	0	0
LA 467	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 33642	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 33642	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
Lagoon	Ramp	2	102	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 71877	xxx	xxx	67	Sipapu, two pits, hearth	1				1						
LA 71877	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 5390	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6000	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 8682	1	Rectangular	2	Dillon Mountain	Catron Co, Western New Mexico
LA 8682	1	Rectangular	2	Dillon Mountain	Catron Co, Western New Mexico
LA 8682	1	Rectangular	2	Dillon Mountain	Catron Co, Western New Mexico
LA 3279	xxx	xxx	xxx	Luna	Catron Co, Western New Mexico
LA 3279	1	Rectangular (three episodes of use)	2	Luna	Catron Co, Western New Mexico
LA 467	xxx	xxx	xxx	San Patricio	Lincoln Co, south-central New Mexico
LA 33642	xxx	xxx	xxx	O'Block Canyon	Catron Co, Western New Mexico
LA 33642	xxx	xxx	xxx	O'Block Canyon	Catron Co, Western New Mexico
Lagoon	xxx	xxx	xxx	xxx	Southwestern New Mexico
LA 71877	1	Rectangular	2	Copperas Peak	Grant Co, southwestern New Mexico
LA 71877	xxx	xxx	xxx	Copperas Peak	Grant Co, southwestern New Mexico
LA 5390	xxx	xxx	xxx	Largo Mesa	Catron Co, Western New Mexico
LA 6000	xxx	xxx	xxx	Cliff	Grant Co, southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 8682	Upper San Francisco River	Ridge	Woodland	6000	Reserve
LA 8682	Upper San Francisco River	Ridge	Woodland	6000	Reserve/Tularosa
LA 8682	Upper San Francisco River	Ridge	Woodland	6000	Reserve
LA 3279	San Francisco River	First terrace	Woodland	7120	Tularosa
LA 3279	San Francisco River	First terrace	Woodland	7120	Tularosa
LA 467	xxx	Floodplain	Grassland	5640	Post Classic/Jornada
LA 33642	San Francisco River	Ridge	Forest	6540	Reserve
LA 33642	San Francisco River	Ridge	Forest	6540	Reserve
Lagoon	Gila River	xxx	xxx	xxx	Georgetown
LA 71877	Lake Roberts/ Sapillo Creek	Terrace	Scrubland	6180	Late Three-Circle
LA 71877	Lake Roberts/ Sapillo Creek	Terrace	Scrubland	6180	Georgetown-Classic
LA 5390	xxx	Ridge	Woodland	7300	Tularosa
LA 6000	Gila River	Bench	Grassland	4610	Three-circle

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Appendix II.
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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 8682	1 pithouse, 2 roomblocks (25 & 15+ rooms), 30 rooms	1	Masonry with adobe plaster	0
LA 8682	1 pithouse, 2 roomblocks (25 & 15+ rooms), 30 rooms	1	Masonry on dirt	0
LA 8682	1 pithouse, 2 roomblocks (25 & 15+ rooms), 30 rooms	1	Masonry, subterranean	0
LA 3279	35 rooms	1	Cobble stone masonry	0
LA 3279	35 rooms	1	Cobble stone masonry	0
LA 467	4 roomblocks	2	xxx	0
LA 33642	1 roomblock	1	xxx	xxx
LA 33642	1 roomblock	1	xxx	xxx
Lagoon	Isolated communal structure	NA	xxx	xxx
LA 71877	50+ rooms	2	Cobble adobe	1
LA 71877	50+ rooms	2	xxx	0
LA 5390	10-12 rooms	1	xxx	xxx
LA 6000	70 pithouses	3	xxx	0

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Site Number	Additional Information and Notes
LA 8682	Pit structure kiva, 1.5 meters deep, masonry on dirt, under Great Kiva.
LA 8682	Masonry walls, Great Kiva superimposed on earlier D-shaped kiva, lies between two roomblocks.
LA 8682	Photo of site in volume 9 Handbook of the Native American Indians.
LA 3279	Also WNMT 80. Great Kiva with circular kiva next to it, ramp entryway has a room on either side; 50 rooms (ARMS says 20 masonry rooms), two pit structures. Dates from http://w3arizona.edu/~scarp/sites/greatkivas/houghs/index.html
LA 3279	Also WNMT 80. Great Kiva with circular kiva next to it, ramp entryway has a room on either side; 50 rooms (ARMS says 20 masonry rooms), two pit structures. Partial roof.
LA 467	Communal structure situated in the plaza.
LA 33642	Great Kiva and Kiva.
LA 33642	Great Kiva and Kiva.
Lagoon	Three meter long entryway.
LA 71877	Burned; 20-60 one-story rooms.
LA 71877	Floor plastered with Pleistocene clay; 20-60 one-story rooms.
LA 5390	10-12 masonry rooms.
LA 6000	ARMS says five kivas (1000-1175); three coursed masonry roomblocks; three partial masonry roomblocks; three cobble based jacal roomblocks with two rooms each; 63 pit structures (all roomblocks are large).

Appendix II.
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Site Number	References
LA 8682	Martin 1979; Martin and Rinaldo 1950; Martin et al. 1957; Rinaldo et al. 1956.
LA 8682	Martin 1979; Martin and Rinaldo 1950; Martin et al. 1957; Rinaldo et al. 1956.
LA 8682	Martin 1979; Martin and Rinaldo 1950; Martin et al. 1957; Rinaldo et al. 1956.
LA 3279	Oakes 1999; Oakes and Zamora 1993; United States Forest Service 1996.
LA 3279	Oakes 1999; Oakes and Zamora 1993; United States Forest Service 1996.
LA 467	Alves 1932; Wiseman 1976.
LA 33642	Accola and Neely 1980.
LA 33642	Accola and Neely 1980.
Lagoon	Anyon and Creel 2003; Anyon and LeBlanc 1980, 1984.
LA 71877	Bettison and Roth 1995; Stokes 2000a, 2000b.
LA 71877	Bettison and Roth 1995; Stokes 2000a, 2000b.
LA 5390	
LA 6000	Bussey 1972, 1975.

Appendix II.
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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 6000	Lee/Fort West Hill	6	Yes, with 21 and 23	23	LPS
LA 6000	Lee/Fort West Hill	6	Yes, with 18 and 19	20	LPS
LA 6000	Lee/Fort West Hill	6	Yes, with 19 and 20	18	LPS
LA 6000	Lee/Fort West Hill	6	Yes, with 18 and 20	19	LPS
LA 6000	Lee/Fort West Hill	6	Yes, with 21 and 23	22	LPS
W:9:83	Lunt	xxx	n/a	None given	Pit Structure
LA 676	Mattocks	2	Unknown	Unit 410	EP
LA 676	Mattocks	2	Unknown	Kiva 48	EP
LA 12110	McAnally	1	n/a	Unit 11	EPS
LA 11568	Mogollon	2	No, EPS	House 5A	EPS
LA 11568	Mogollon	2	No, MPS	House 3	MPS
LA 15075	Montoya	1	n/a	Room 4	ELP

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Appendix II.
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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 6000	900 to 1000	Ceramic date	12	A	xxx	xxx
LA 6000	900 to 1000	Ceramic date	16	A	xxx	xxx
LA 6000	900 to 1000	Ceramic date	18	A	xxx	xxx
LA 6000	900 to 1000	Ceramic date	19	A	xxx	xxx
LA 6000	900 to 1000	Ceramic date	22	A	xxx	xxx
W:9:83	600-900	General period date	xxx	xxx	xxx	xxx
LA 676	1020vv and 1015-1250 (MT300)	Tree-ring non-cutting date; archaeomagnetic date range	13.8	A	Rectangular	2
LA 676	1000-1150	Ceramic date	14.8	A	Rectangular	2
LA 12110	548-762 (2-sigma calibrated) (Stuiver and Reimer 1993); 545+/185 (LeBlanc and Whalen); 580 +/- 60	Radiocarbon date	23.8	A	Circular with lobes	1
LA 11568	550-750	Ceramic date	82.5	P	Oval with lobes	5
LA 11568	650-750	Ceramic date	55.4	P	Circular	1
LA 15075	1100-1200	Ceramic date	37.75	xxx	Oval	5

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 6000	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6000	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6000	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6000	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6000	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
W:9:83	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 676	Ramp (blocked during Classic period)	2	East	Vent constructed in blocked entryway, 5 burials, 2 plastered pits, hearth	0	1	0	0	2	0	5	0	0	0	0
LA 676	Unknown	5	South	Vent, ledge, 3 burials, hearth	0	1	0	0	0	0	3	0	0	0	1
LA 12110	Ramp	2	Southeast	Postholes (7), hearth	0	0	0	0	0	0	0	0	0	0	0
LA 11568	Ramp	2	Northeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 11568	Ramp	2	East	Pits	0	0	0	0	3	0	0	0	0	0	0
LA 15075	Roof entry	1	None visible	Wall niche, 5 burials, hearth	0	0	0	1	0	0	5	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 6000	xxx	xxx	xxx	Cliff	Grant Co, southwestern New Mexico
LA 6000	xxx	xxx	xxx	Cliff	Grant Co, southwestern New Mexico
LA 6000	xxx	xxx	xxx	Cliff	Grant Co, southwestern New Mexico
LA 6000	xxx	xxx	xxx	Cliff	Grant Co, southwestern New Mexico
LA 6000	xxx	xxx	xxx	Cliff	Grant Co, southwestern New Mexico
W:9:83	xxx	xxx	xxx	xxx	xxx
LA 676	3	One rectangular (remodeled), one circular (earlier)	2,1	San Lorenzo	Grant Co, southwestern New Mexico
LA 676	1	Rectangular	2	San Lorenzo	Grant Co, southwestern New Mexico
LA 12110	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico
LA 11568	xxx	xxx	xxx	Alma	Catron Co, Western New Mexico
LA 11568	xxx	xxx	xxx	Alma	Catron Co, Western New Mexico
LA 15075	1	Oval	3	Dywer	Grant Co, southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 6000	Gila River	Bench	Grassland	4610	Three-circle
LA 6000	Gila River	Bench	Grassland	4610	Three-circle
LA 6000	Gila River	Bench	Grassland	4610	Three-circle
LA 6000	Gila River	Bench	Grassland	4610	Three-circle
LA 6000	Gila River	Bench	Grassland	4610	Three-circle
W:9:83	xxx	xxx	xxx	xxx	Pit structure/Stove Canyon Phase
LA 676	Mimbres River	First terrace	Grassland	5778	Classic
LA 676	Mimbres River	First terrace	Grassland	5778	Classic
LA 12110	Mimbres River	Hilltop	Desert Scrubland	6000	Cumbre/Georgetown
LA 11568	San Francisco River	Mesa/Butte	Woodland	5147	Georgetown-San Francisco
LA 11568	San Francisco River	Mesa/Butte	Woodland	5147	San Francisco
LA 15075	Mimbres River	Terrace	Grassland	4494	Animas

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 6000	70 pithouses	3	xxx	0
LA 6000	70 pithouses	3	xxx	0
LA 6000	70 pithouses	3	xxx	0
LA 6000	70 pithouses	3	xxx	0
LA 6000	70 pithouses	3	xxx	0
W:9:83	14 pithouses	1	xxx	xxx
LA 676	160-170 rooms	3	Adobe	0
LA 676	160-170 rooms	3	xxx	xxx
LA 12110	12 pithouses	1	xxx	1
LA 11568	23 pithouses	1	xxx	xxx
LA 11568	23 pithouses	1	xxx	xxx
LA 15075	30-40 rooms	1	Cobble and adobe	xxx

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Appendix II.
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Site Number	Additional Information and Notes
LA 6000	ARMS says five kivas (1000-1175); three coursed masonry roomblocks; three partial masonry roomblocks; three cobble based jacal roomblocks with two rooms each; 63 pit structures (all roomblocks are large).
LA 6000	ARMS says five kivas (1000-1175); three coursed masonry roomblocks; three partial masonry roomblocks; three cobble based jacal roomblocks with two rooms each; 63 pit structures (all roomblocks are large).
LA 6000	ARMS says five kivas (1000-1175); three coursed masonry roomblocks; three partial masonry roomblocks; three cobble based jacal roomblocks with two rooms each; 63 pit structures (all roomblocks are large).
LA 6000	ARMS says five kivas (1000-1175); three coursed masonry roomblocks; three partial masonry roomblocks; three cobble based jacal roomblocks with two rooms each; 63 pit structures (all roomblocks are large).
LA 6000	ARMS says five kivas (1000-1175); three coursed masonry roomblocks; three partial masonry roomblocks; three cobble based jacal roomblocks with two rooms each; 63 pit structures (all roomblocks are large).
W:9:83	
LA 676	Middle Mimbres Valley; remodeled pit structure, 3-post-habitation burials. Tree-ring date A.D. 1020; archaeomagnetic date on late hearth A.D. 1015-1250. 12.7 m2 (Gilman and LeBlanc n.d.).
LA 676	Middle Mimbres Valley. 15.2 m2 (Gilman and LeBlanc n.d.)
LA 12110	Burned; 3 m long entryway. A.D. 548-762 radiocarbon date. Alma plain jars and bowls. Size via Anyon and LeBlanc 1980 and Diehl 2001.
LA 11568	Also Mogollon 1:15. San Francisco River; 1m long entryway. Radio carbon date.
LA 11568	Also Mogollon 1:15. San Francisco River. 6.2m long entryway. Radiocarbon date. 71 m2 (Wheat 1955).
LA 15075	Z:5:112

Appendix II.
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Site Number	References
LA 6000	Bussey 1972, 1975.
LA 6000	Bussey 1972, 1975.
LA 6000	Bussey 1972, 1975.
LA 6000	Bussey 1972, 1975.
LA 6000	Bussey 1972, 1975.
W:9:83	Johnson 1961; Neely 1974.
LA 676	Gilman and LeBlanc n.d.; LeBlanc 1983; Nesbitt 1931.
LA 676	Gilman and LeBlanc n.d.; LeBlanc 1983; Nesbitt 1931.
LA 12110	Anyon et al. 2001; Anyon and LeBlanc 1980; Diehl and LeBlanc 2001; Haury 1936; LeBlanc 1977.
LA 11568	Anyon and LeBlanc 1980; Haury 1936; Wheat 1955.
LA 11568	Anyon and LeBlanc 1980; Haury 1936; Wheat 1955.
LA 15075	Ravesloot 1979.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 2465	NAN Ranch	8	Yes, coeval with 57 then 18, 39, and 45	58	EP
LA 2465	NAN Ranch	8	Coeval with 58, destroyed by fire, Room 18 built atop it	57	EP
LA 2465	NAN Ranch	8	Coeval with 39 and 58, destroyed by fire, Room 45 built atop it	18	EP
LA 2465	NAN Ranch	8	Coeval with 18, 45, and 58	39	EP
LA 2465	NAN Ranch	8	Coeval with 29 and 58	45	EP
LA 2465	NAN Ranch	8	Replaced 52 and 91	43	LPS
LA 2465	NAN Ranch	8	Yes, coeval with 91	52	LPS
LA 2465	NAN Ranch	8	Yes, coeval with 52	91	LPS

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 2465	1000-1130 (1105vv for renovation)	Archaeomagnetic date range; tree-ring date	17.82	A	Rectangular	2
LA 2465	1025-1070	Archaeomagnetic date range	32.2	A	Rectangular	2
LA 2465	1066vv, 1068vv (under 45); 1071-1100	Tree-ring dates; Archaeomagnetic date range	38.76	A	Rectangular	2
LA 2465	1090vv (Coeval with 45); Mimbres Style III on floors; 1063, (Obsidian Hydration)	Tree-ring date	36	A	Square	6
LA 2465	(Coeval with 39); tree ring 1107r; 1066vv	Tree-ring non-cutting date	95	P	Square	6
LA 2465	900vv; 900-1010 (ceramic date, based on Shafer's assessment - did not burn)	Tree-ring non-cutting date	58	A	Rectangular	2
LA 2465	859vv; AMS dates 613-759, 638-778; 660-720, 740-860, 810-860	Tree-ring date; AMS dates; Archaeomagnetic date ranges	43.2	A	Rectangular	2
LA 2465	900-1000 (Ceramic date - late Three Circle)	Ceramic date	20	A	Rectangular	2

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 2465	Doorway	4	Northeast-Southwest	Vent, 4 disturbed burials, benchs, firepits, pits, hearths	0	1	0	0	1	0	4	0	0	3	0
LA 2465	Unknown	5	Northeast-Southwest	Pits, 10 burials, hearth	0	0	0	0	6	0	10	0	0	0	0
LA 2465	Ramp	2	Northeast-Southwest	Pits, burial	0	0	0	0	10	0	1	0	0	0	0
LA 2465	Doorway	4	East	Vent, wall niches, 4 burials, hearth	0	1	0	4	0	0	4	0	0	0	0
LA 2465	Ramp	2	East	Pits	0	0	0	0	3	0	0	0	0	0	0
LA 2465	Ramp	2	80-100	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 2465	Ramp; 4.3 meters long	2	133	Deflector, pits, hearth	0	0	1	0	1	0	4	0	0	0	0
LA 2465	Roof entry	1	East	Vent, pits, sipapus, hearths, possible altar	2	1	0	0	9	1	0	0	0	0	1

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 2465	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	1	Irregular	5	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	0	No formal hearth	6	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	0	No formal hearth	6	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	1	Oval to rectangular	3	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	1	Circular	1	San Lorenzo	Grant Co, southwestern New Mexico
LA 2465	2	Oval and circular	1, 3	San Lorenzo	Grant Co, southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Classic
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Classic
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Classic
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Classic
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Classic
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Late Three-Circle
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Three Circle
LA 2465	Mimbres River	Terrace overlooking Mimbres River	Grassland	5750	Three Circle

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 2465	100+ rooms in 4 roomblocks	2	Cobble stone masonry	1
LA 2465	100+ rooms in 4 roomblocks	2	Cobble and adobe	1
LA 2465	100+ rooms in 4 roomblocks	2	Cobble and adobe	1
LA 2465	100+ rooms in 4 roomblocks	2	Double to quintuple coursed cobble stone masonry	0
LA 2465	100+ rooms in 4 roomblocks	2	Double coursed slab masonry and adobe	0
LA 2465	25-30 pit structures	2	Excavated into native clays and not improved	0
LA 2465	25-30 pit structures	2	Cobble-adobe plastered walls	2
LA 2465	25-30 pit structures	2	Excavated into native clays and plastered	2

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Appendix II.
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Site Number	Additional Information and Notes
LA 2465	Also LA 15049. Three floor resurfacing episodes, some remodeling, used throughout the Classic period, destroyed by fire.
LA 2465	Also LA 15049. Destroyed by fire and larger structure, Room 18, built atop it.
LA 2465	Also LA 15049. Destroyed by fire and another structure, Room 45 was built atop it.
LA 2465	Also LA 15049. Shafer (2003:80) suggests this may have been the women's kiva given the artifacts found within the structure.
LA 2465	Also LA 15049. Largest structure at the site, closest source for the masonry 14 km away (Shafer 1981:21), rhyolite slab column or roof support.
LA 2465	Also LA 15049. Middle Mimbres Valley; Style II Black-on-white sherd on the floor.
LA 2465	Also LA 15049. Middle Mimbres Valley, possible painted wall decoration (serpent), burned (corn husks possibly used to fuel the fire), Mimbres Style I bowl, filled with gravel after it burned, termination objects, at least six burials.
LA 2465	Also LA 15049. Middle Mimbres Valley, the floor was plastered at least three times, sipapu filled with white sand upon abandonment, Mimbres red-filmed seed jar filled with 412 amethyst crystals placed below the floor of the room, destroyed by fire; Style II Black-on-white sherd on floor.

Appendix II.
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Site Number	References
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.
LA 2465	Anyon and Creel 2003; Burden 2001; Shafer 1981, 1982, 1983, 1989, 1995, 2003.

Appendix II.
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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
AZ W:10:111	Nantack	2	Younger than Great Kiva	Pithouse 10	LPS
AZ W:10:111	Nantack	2	Later than Pithouse 10	Great Kiva 1	LPS
LA 19075	NM Y:4:6	1	n/a	None given	EPS
LA 86310	Ojo Caliente G	1	n/a	Great Kiva	EP
LA 1113	Old Town	3	Replaced by A16	A67	EPS
LA 1113	Old Town	3	Replaced by A71	A16	LPS
LA 1113	Old Town	3	Destroyed at the end of the LPS	A71	MPS
LA 5793	Ormand	2	Unknown	Room 97	ELP
LA 5793	Ormand	2	Unknown	Room 79	LLP
LA 3639	Pine Creek	2	Unknown	Room 1	EP
LA 3639	Pine Creek	2	Unknown	Room 4	EP
W:10:50	Point of Pines	3	No	Kiva 5	ELP
W:10:51	Point of Pines	1	n/a	Pithouse 13	ELP
W:10:50	Point of Pines	3	No	Kiva 1	LLP
W:10:50	Point of Pines	3	No	Kiva 2	LLP
LA 104065	Ponderosa Ranch	1	n/a	None given	LPS
LA 9713	Promotory	1	n/a	House B	EPS

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Appendix II.

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
AZ W:10:111	900-1000	Ceramic date	60	P	Rectangular	2
AZ W:10:111	900-1000	Ceramic date	152.8	P	Rectangular	2
LA 19075	305+/-85	Radiocarbon date	40.3	S	Circular with lobes	3
LA 86310	1000-1175	Ceramic date	113	P	xxx	xxx
LA 1113	650+/-	Archaeomagnetic date	39	P	Circular with lobes	3
LA 1113	874-925	Archaeomagnetic date range	78	P	Rectangular	2
LA 1113	800-874	Archaeomagnetic date range	52	P	D-shaped	4
LA 5793	1100-late 1300	Ceramic date	71.07	P	Rectangular	2
LA 5793	1300-1450	Ceramic date	17.1	A	Rectangular	2
LA 3639	1000-1150	Ceramic date	12.7	S	Square	6
LA 3639	1000-1150	Ceramic date	15.9	S	Rectangular	2
W:10:50	1150-1265	Ceramic date	xxx	xxx	Circular	1
W:10:51	1265-1300	Archaeomagnetic date range	10.6	A	Square	6
W:10:50	1265-1325/1350	Ceramic date	220	P	Rectangular	2
W:10:50	1325/1350-1400	Ceramic date	263	P	Square	6
LA 104065	900v	Tree-ring non-cutting date	xxx	xxx	xxx	xxx
LA 9713	250 - 600	Ceramic date	86	xxx	Circular	1

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
AZ W:10:111	Stepped entryway	3	South?	Storage pits, footdrum, bench, hearth	0	0	0	0	0	1	0	0	1	1	0
AZ W:10:111	Stepped entryway: 2.25 meter long	3	East	Storage pits, hearth	0	0	0	0	0	1	1	0	0	0	1
LA 19075	Ramp	2	126	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 86310	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 1113	xxx	xxx	141/Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 1113	Ramp	2	114	Floor vaults, sipapus, hearth	4	0	0	0	1	0	0	2	0	0	0
LA 1113	xxx	xxx	135	Floor vault/footdrum, child burial, burial, hearth	0	0	0	0	0	0	1	1	0	0	0
LA 5793	Roof entry	1	North	Deflector, pit, oval pit (possible foot drum), hearths	0	0	1	0	1	0	0	0	1	0	0
LA 5793	Roof entry	1	West	Ladder hole, floor groove, hearth	0	0	0	0	0	0	0	0	0	0	1
LA 3639	xxx	xxx	South	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3639	Roof entry	1	Northeast	Hearth	0	0	0	0	0	0	0	0	0	0	0
W:10:50	xxx	xxx	xxx	Sipapu	1	0	0	0	0	0	0	0	0	0	0
W:10:51	xxx	xxx	East	Sipapu, vent, hearth	1	1	0	0	0	0	0	0	0	0	0
W:10:50	xxx	xxx	Southeast	Vent, foot drums, pits, hearth	0	1	0	0	1	0	0	0	1	0	0
W:10:50	xxx	xxx	Southeast	Vent, hearth	0	1	0	0	0	0	0	0	0	0	0
LA 104065	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 9713	Stepped	3	East	xxx	0	0	0	0	0	0	0	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
AZ W:10:111	1	Circular	1	xxx	East-central Arizona
AZ W:10:111	1	Circular	1	xxx	East-central Arizona
LA 19075	1	Circular	1	Allie Canyon	Grant Co, southwestern New Mexico
LA 86310	xxx	xxx	xxx	Montoya Butte	Socorro Co, west-central New Mexico
LA 1113	xxx	xxx	xxx	Luna	Catron Co, Western New Mexico
LA 1113	1	Circular	1	Luna	Catron Co, Western New Mexico
LA 1113	1	Circular	1	Luna	Catron Co, Western New Mexico
LA 5793	3	Rectangular (slablined) and irregular	2,5	Cliff	Grant Co, southwestern New Mexico
LA 5793	1	Circular	1	Cliff	Grant Co, southwestern New Mexico
LA 3639	xxx	xxx	xxx	Bear Mountain	Grant Co, southwestern New Mexico
LA 3639	1	Circular	1	Bear Mountain	Grant Co, southwestern New Mexico
W:10:50	xxx	xxx	xxx	Point of Pines East	East-central Arizona
W:10:51	1	Unknown shape	7	Point of Pines East	East-central Arizona
W:10:50	1	Unknown shape	7	Point of Pines East	East-central Arizona
W:10:50	1	Circular	1	Point of Pines East	East-central Arizona
LA 104065	xxx	xxx	xxx	North Star Mesa	Grant Co, southwestern New Mexico
LA 9713	xxx	xxx	xxx	Bull Basin	Catron Co, Western New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
AZ W:10:111	Black River	Ridge	Mixed Woodland	6040	Three-Circle/Nantack phase
AZ W:10:111	Black River	Ridge	Mixed Woodland	6040	Three-Circle/Nantack phase
LA 19075	Mimbres River	Mesa top	Grassland	6600	Cumbre/Georgetown
LA 86310	xxx	Ridge	Grassland	6290	Mimbres Classic
LA 1113	Mimbres River	Bench	Grassland	4879	Georgetown
LA 1113	Mimbres River	Bench	Grassland	4879	Three-Circle
LA 1113	Mimbres River	Bench	Grassland	4879	San Francisco
LA 5793	Gila River	First terrace	Grassland	4522	Mimbres-Salado
LA 5793	Gila River	First terrace	Grassland	4522	Salado
LA 3639	Duck Creek	Bench	Grassland	5160	Classic
LA 3639	Duck Creek	Bench	Grassland	5160	Classic
W:10:50	Point of Pines Creek	Ridge	Woodland	5920	Tularosa
W:10:51	Point of Pines Creek	Ridge	Woodland	5980	Maverick Mountain
W:10:50	Point of Pines Creek	Ridge	Woodland	5920	Pinedale
W:10:50	Point of Pines Creek	Ridge	Woodland	5960	Canyon Creek
LA 104065		Ridge	Woodland	6360	Late Pithouse
LA 9713	San Francisco River	Hilltop	Forest	6340	Pinelawn

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
AZ W:10:111	21 pit structures and surface rooms	1	Excavated into native clays	0
AZ W:10:111	21 pit structures and surface rooms	1	Native clays for lower wall, no upper construction	xxx
LA 19075	Isolated communal structure	NA	xxx	xxx
LA 86310	6 roomblocks	3	xxx	xxx
LA 1113	150+ rooms	1	xxx	1
LA 1113	150+ rooms	2	Adobe with some masonry	2
LA 1113	150+ rooms	1	Coursed adobe walls	1
LA 5793	4 roomblocks/approx. 30 rooms each, 100 rooms	3	Cobble masonry with adobe as well, each wall different	3
LA 5793	4 roomblocks/approx. 30 rooms each, 100 rooms	3	Adobe	0
LA 3639	xxx	xxx	xxx	xxx
LA 3639	xxx	xxx	xxx	xxx
W:10:50	800 rooms	5	xxx	xxx
W:10:51	14 pithouses	1	xxx	xxx
W:10:50	800 rooms	5	Masonry, enclosed in roomblock	0
W:10:50	800 rooms	5	xxx	xxx
LA 104065	150+	4	xxx	xxx
LA 9713	5-7 pit structures	1	xxx	xxx

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Site Number	Additional Information and Notes
AZ W:10:111	Possible kiva, based on size, 10 pithouses, younger than the Great Kiva.
AZ W:10:111	Great Kiva/10 pithouses.
LA 19075	Also NM Y:4:6. Site is situated 150 meters above floodplain.
LA 86310	Six roomblocks and two isolated rooms; Great Kiva (not excavated).
LA 1113	Also Z:5:14. Lower Mimbres Valley; round, burned.
LA 1113	Also Z:5:14. Lower Mimbres Valley, burned, dedicatory and termination objects, evidence for remodeling, two floors.
LA 1113	Also Z:5:14. Lower Mimbres Valley; infant burial, burned.
LA 5793	Great kiva - in plaza, 200 people (scalar stress model), built on surface, not subterranean, purposefully dismantled and cleaned out.
LA 5793	The structure is located within the roomblock; there is a cache of shaped stones/manos near the central post. There are rooms attached to the structure and have doorways into the structure.
LA 3639	
LA 3639	
W:10:50	800 rooms.
W:10:51	Fourteen pithouses.
W:10:50	800 rooms, kiva remodeled to 264 square meters during Canyon Creek phase and has three internal rooms.
W:10:50	800 rooms.
LA 104065	This Great Kiva is the largest site in the Sapillo Valley identified to date.
LA 9713	

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Site Number	References
AZ W:10:111	Breternitz 1956, 1959.
AZ W:10:111	Breternitz 1956, 1959.
LA 19075	Anyon and LeBlanc 1980; Anyon and Creel 2003; Hogg 1977.
LA 86310	Laumbaugh, personal communication; Lekson et al. 1988.
LA 1113	Creel 1997a, 1998, 1999a, 1999b; Anyon and Creel 2003.
LA 1113	Creel 1997a, 1998, 1999a, 1999b; Anyon and Creel 2003.
LA 1113	Creel 1997a, 1998, 1999a, 1999b; Anyon and Creel 2003.
LA 5793	Wallace 1998.
LA 5793	Wallace 1998.
LA 3639	Anyon and LeBlanc 1980.
LA 3639	Anyon and LeBlanc 1980.
W:10:50	Gerald 1957; Stone 2001.
W:10:51	Wendorf 1950.
W:10:50	Gerald 1957; Stone 2001.
W:10:50	Gerald 1957; Stone 2001.
LA 104065	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 9713	Wheat 1955.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 5391	Pueblo Cordoval	1	n/a	None given	LLP
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	2	Yes	Pithouse/Kiva 2	EP
LA 4986	Pueblo Lillie Allen Site Cluster/Yankee Gulch East	2	Yes	Pithouse/Kiva 1	EP
LA 5412	Redrock	1	n/a	None given	EP
LA 127260	Ridout Locus	1	n/a	House F	EPS
LA 1118	Rock House	2	Second one at the site.	Feature 8	EP
LA 1118	Rock House	2	Remodeled pit structure, made smaller by remodeling, abandoned prior to use of F8.	Feature 7	EP
LA 5421	Saige-McFarland	2	No, EP	Pithouse 3	EP
LA 5421	Saige-McFarland	2	No, EPS	Pithouse 1/Great Kiva	EPS
LA 66782	Sand Flat	1	n/a		EP
LA 9657	Sawmill/Fox Farm	1	n/a	Kiva	LPS

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 5391	1250-1350	Ceramic date	xxx	xxx	xxx	xxx
LA 4986	1057-1150	Report does not specify origin of date	13.5	xxx	Square	6
LA 4986	1057-1150	Report does not specify origin of date	28.4	xxx	Rectangular	2
LA 5412	1100	Ceramic date (report provides date of 1100 for this structure but does not specify origin of date	189.4	P	Rectangular	2
LA 127260	620-710	Archaeomagnetic date range	35.84	xxx	Circular	1
LA 1118	1000-1150	Ceramic date	11.6	A	Rectangular	2
LA 1118	1000-1150	Ceramic date	11.6	A	Rectangular	2
LA 5421	950-1100	Ceramic date	9.8	xxx	Rectangular	2
LA 5421	672 +/-	Radiocarbon date; 645 to 770 Archaeomagnetic date range	57.7	xxx	Rectangular	2
LA 66782	1000-1150	Ceramic date	4.65	xxx	Rectangular	2
LA 9657	950vv	Tree-ring non-cutting date	75.6	xxx	Rectangular	2

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 5391	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 4986	xxx	xxx	Southwest	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 4986	xxx	xxx	Southwest	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 5412	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 127260	Roof entry?	1	115	Burials, hearth	0	0	0	0	0	0	3	0	0	0	0
LA 1118	Roof entry	1	Southwest	Vent	0	1	0	0	0	0	0	0	0	0	0
LA 1118	Roof entry	1	Northeast	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 5421	Roof entry	1	East	Vent, fire pit	0	1	0	0	1	0	0	0	0	0	0
LA 5421	Ramp	2	110	Firepit, 5 floor vaults, 2 floor pits, 2 wall niches	0	0	0	2	2	0	0	5	0	0	1
LA 66782	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 9657	Ramp	2	Southeast	Foot drum, hearth	0	0	0	0	0	0	0	0	1	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 5391	xxx	xxx	xxx	Gallo Mountain East	Catron Co, Western New Mexico
LA 4986	xxx	xxx	xxx	Queens Head	Catron Co, Western New Mexico
LA 4986	xxx	xxx	xxx	Queens Head	Catron Co, Western New Mexico
LA 5412	xxx	xxx	xxx	Redrock	Grant Co, southwestern New Mexico
LA 127260	1	Circular, collared	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 1118	1	Circular	1	Taylor Mountain	Southwestern New Mexico
LA 1118	1	Square	4	Taylor Mountain	Southwestern New Mexico
LA 5421	1	Circular	1	Cliff	Grant Co, southwestern New Mexico
LA 5421	1	Square	4	Cliff	Grant Co, southwestern New Mexico
LA 66782	xxx	xxx	xxx	Aragon	Catron Co, Western New Mexico
LA 9657	1	Oval	3	Reserve	Catron Co, Western New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 5391		Bench	Woodland	7800	Tularosa
LA 4986	Apache Creek	Talus slope	Desert Scrubland	6820	Apache Creek/Early Tularosa
LA 4986	Apache Creek	Talus slope	Desert Scrubland	6820	Apache Creek/Early Tularosa
LA 5412	xxx	xxx	Desert Scrubland	4200	Mangus/Mogollon V
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Georgetown
LA 1118	Cameron Creek	Terrace	Grassland	5080	Three Circle
LA 1118	Cameron Creek	Terrace	Grassland	5080	Late Pithouse
LA 5421	Gila River	Mesa	Woodland	4580	Classic Mimbres
LA 5421	Gila River	Mesa	Woodland	4580	San Francisco
LA 66782	xxx	Ridge/hill slope	Woodland	7640	Reserve
LA 9657	Dry Leggett Arroyo	Valley/Arroyo/Wash	Forest	6420	Reserve (Three-Circle)

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 5391	1 roomblock	2	xxx	xxx
LA 4986	1 roomblock	2	xxx	0
LA 4986	1 roomblock	2	xxx	xxx
LA 5412	500 rooms	5	Masonry walled, poorly coursed river cobbles	xxx
LA 127260	10-20 pithouses	1	Subterranean	xxx
LA 1118	1 roomblock	2	Cobblestone masonry	0
LA 1118	1 roomblock	2	xxx	0
LA 5421	20-40 pit structures	1	Masonry walled	0
LA 5421	20-40 pit structures	1	Cobble stone masonry	2
LA 66782	3 roomblocks with 15+ rooms	1	xxx	0
LA 9657	8-10 rooms	1	Masonry walls	0

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Site Number	Additional Information and Notes
LA 5391	ARMS database says eight kivas at the site, but no further information is available.
LA 4986	The structure was reused after abandonment as a habitation unit.
LA 4986	
LA 5412	Also MC-166. Formerly called Cemetery Ruin; 500+ rooms, 15 of which are cobble stone masonry.
LA 127260	NM:Y:7:3
LA 1118	One communal structure abandoned prior to use of the second one at the site; attached to roomblock.
LA 1118	Remodeled pit structure, made smaller by remodeling, attached to roomblock.
LA 5421	Also MC-146. Roof entryway. A.D. 645-700 Radiocarbon date.
LA 5421	Also MC-146. The structure was burned on abandonment; two caches were found in the structure (including mica, shell, and quartz crystal). Three Circle AD 645-770 (Lekson 1988); Late Three-Circle (Anyon and Creel 2003).
LA 66782	The structure is enclosed by rubble pile.
LA 9657	Remodeled later, walls become more formal masonry, L-shaped pueblo.

Appendix II.
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Site Number	References
LA 5391	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 4986	Kayser 1971.
LA 4986	Kayser 1971.
LA 5412	Lekson 1978.
LA 127260	Anyon and Creel 2003; Woosley and McIntyre 1996.
LA 1118	Anyon and LeBlanc 1980.
LA 1118	Anyon and LeBlanc 1980.
LA 5421	Anyon and LeBlanc 1980.
LA 5421	Anyon and LeBlanc 1980; Woosley and McIntyre 1996.
LA 66782	Dames and Moore-Zuni Arch. Program (O'Brien et al.).
LA 9657	Laboratory of Anthropology, Santa Fe, New Mexico.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 8891	Schoolhouse Canyon	1	n/a	Kiva	LLP
LA 1119	Small House North of Arroyo Seco	1	n/a	None given	ELP
LA 2112	Smokey Bear/Block Lookout	1	n/a	Feature 4	LLP
LA 84657	Squaw Canyon	1	n/a	None given	LPS
LA 38624	Starkweather	1	n/a	Pithouse B	LPS
W:9:10	Stove Canyon	1	n/a	Kiva 1	EPS/MPS
LA 64931	SU	3	No	Pithouse A	EPS
LA 64931	SU	3	No	House V	EPS
LA 64931	SU	3	No, LPS	Pithouse Y	LPS
LA 1691	Swarts	3	Coeval with Room 2	Room W	LPS
LA 1691	Swarts	3	Coeval with Room W	Room 2	LPS
LA 1691	Swarts	3	No, later than others	Room AE	LPS
LA 6565	Taylor Draw	3	Unknown	Feature 15	ELP
LA 6565	Taylor Draw	3	Unknown	Feature 22	ELP
LA 6565	Taylor Draw	3	Unknown	Feature 7	ELP
LA 53	Three Circle	2	Yes	Room 19	EPS
LA 53	Three Circle	2	Yes	2A	EPS
LA 54955	TJ	1	n/a	Great Kiva	EP

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 8891	1250-1350	Ceramic date	22.09	A	Square	6
LA 1119	1150-1250	Ceramic date	xxx	S	Circular	1
LA 2112	1250-1350	Ceramic date	32.8	P	Square	6
LA 84657	800-950	Ceramic date	xxx	xxx	xxx	xxx
LA 38624	900	Ceramic date	99	xxx	Circular	1
W:9:10	600-900	General period date	62.64	P	Rectangular	2
LA 64931	200-550	Ceramic date	84.9	xxx	Circular with lobes	1
LA 64931	550-750	Ceramic date	78.5	xxx	Circular with lobes	3
LA 64931	750-1000	Ceramic date	12.5	xxx	Circular	1
LA 1691	900v	Tree-ring non-cutting date	76	xxx	Rectangular	2
LA 1691	750-1000	Ceramic date	27.5	xxx	Rectangular	2
LA 1691	750-1000	Ceramic date	109.4	xxx	Rectangular	2
LA 6565	1100-1200	Ceramic date	12	xxx	Circular	1
LA 6565	1100-1200	Ceramic date	16	xxx	Circular	1
LA 6565	1100-1200	Ceramic date	16	xxx	Circular	1
LA 53	550-750	Ceramic date	53.2	xxx	Circular with lobes	3
LA 53	550-750	Ceramic date	57.2	xxx	Oval	5
LA 54955	1000-1200	Ceramic date	200	P	Circular	1

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 8891	Ramp	2	Northwest	3 niches (N,S,W walls), 2 benches, deflector, vent, hearth	0	1	1	3	0	0	0	0	0	2	0
LA 1119	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 2112	Roof entry	1	East	Sipapu, vent, ash pit, ladder posts, burials, hearth	1	1	0	0	1	0	9	0	0	0	1
LA 84657	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 38624	Stepped	3	North	xxx	0	0	0	0	0	0	0	0	0	0	0
W:9:10	xxx	xxx	East	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 64931	Ramp	2	East	Pits, floor groove	0	0	0	0	3	0	0	0	1	0	0
LA 64931	Ramp	2	Southeast	Pits	0	0	0	0	4	0	0	0	0	0	0
LA 64931	xxx	xxx	East	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 1691	xxx	xxx	119	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 1691	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 1691	xxx	xxx	120	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 6565	Ramp	2	Southwest	Bench, hearth	0	0	0	0	0	0	0	0	0	1	0
LA 6565	Ramp	2	xxx	Deflector & vent, hearth	0	1	1	0	0	0	0	0	0	0	0
LA 6565	xxx	xxx	Northwest	Deflector & vent, hearth	0	1	1	0	0	0	0	0	0	0	0
LA 53	Ramp	2	71/Northeast	Burial 90, hearth	0	0	0	0	0	0	1	0	0	0	0
LA 53	Ramp	2	63/Northeast	Burial, hearth	0	0	0	0	0	0	5	0	0	0	0
LA 54955	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0

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Appendix II.
xxx = missing data

Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 8891	1	Rectangular (slablined)	2	Queens Head	Grant Co, southwestern New Mexico
LA 1119	xxx	xxx	xxx	Caballo	Sierra Co, southwestern New Mexico
LA 2112	1	Circular	1	Encinoso	Lincoln Co, south-central New Mexico
LA 84657	xxx	xxx	xxx	Indian Peaks East	Catron Co, Western New Mexico
LA 38624	xxx	xxx	xxx	Reserve	Catron Co, Western New Mexico
W:9:10	xxx	xxx	xxx	xxx	xxx
LA 64931	xxx	xxx	xxx	Reserve	Catron Co, Western New Mexico
LA 64931	xxx	xxx	xxx	Reserve	Catron Co, Western New Mexico
LA 64931	xxx	xxx	xxx	Reserve	Catron Co, Western New Mexico
LA 1691	1	Square	4	Dwyer	Grant Co, southwestern New Mexico
LA 1691	xxx	xxx	xxx	Dwyer	Grant Co, southwestern New Mexico
LA 1691	1	Circular	1	Dwyer	Grant Co, southwestern New Mexico
LA 6565	xxx	Unknown shape	7	Pink Peak	Socorro Co, central New Mexico
LA 6565	1	Circular	1	Pink Peak	Socorro Co, central New Mexico
LA 6565	1	Circular	1	Pink Peak	Socorro Co, central New Mexico
LA 53	1	Circular	1	Allie Canyon	Grant Co, southwestern New Mexico
LA 53	1	Circular	1	Allie Canyon	Grant Co, southwestern New Mexico
LA 54955	xxx	xxx	xxx	Gila Hot Springs	Southwestern New Mexico

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Appendix II.
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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 8891	xxx	Floodplain/Valley	xxx	xxx	Reserve
LA 1119	xxx	Terrace/Mesa/Butte	Grassland	4300	Jornada
LA 2112	Las Tablas & Richardson creeks	Hilltop	Grassland	6060	Jornada
LA 84657	xxx	Ridge	Woodland	7280	Pre-Reserve
LA 38624	San Francisco River	Hilltop	Woodland	6120	Three-Circle
W:9:10	xxx	xxx	xxx	xxx	Pit structure/Stove Canyon Phase
LA 64931	San Francisco River	Ridge	Woodland	6440	Early Pit Structure (Cumbre)
LA 64931	San Francisco River	Ridge	Woodland	6440	Georgetown
LA 64931	San Francisco River	Ridge	Woodland	6440	Three-Circle
LA 1691	Mimbres River	Terrace/Ridge	Grassland	5600	Late Three-Circle
LA 1691	Mimbres River	Terrace/Ridge	Grassland	5600	Three-Circle
LA 1691	Mimbres River	Terrace/Ridge	Grassland	5600	Three-Circle
LA 6565	xxx	Terrace	Woodland	6050	Jornada
LA 6565	xxx	Terrace	Woodland	6050	Jornada
LA 6565	xxx	Terrace	Woodland	6050	Jornada
LA 53	Mimbres River	Mesa/Butte	Woodland	6475	Georgetown/San Francisco
LA 53	Mimbres River	Mesa/Butte	Woodland	6475	Georgetown/San Francisco
LA 54955	Gila River	Mesa top/cliff edge	Grassland	5775	Mimbres

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 8891	15-20 rooms	1	Masonry	0
LA 1119	12 roomblocks	4	Bermed walls	xxx
LA 2112	Multiple surface rooms and pithouses	xxx	Adobe	2
LA 84657	7 pithouses	1	xxx	xxx
LA 38624	12 surface rooms and 20 pithouses	1	xxx	xxx
W:9:10	17 pithouses	1	xxx	xxx
LA 64931	35 pit structures	1	xxx	1
LA 64931	35 pit structures	1	xxx	xxx
LA 64931	35 pit structures	1	xxx	xxx
LA 1691	40-60 pithouses	2	xxx	1
LA 1691	40-60 pithouses	2	xxx	1
LA 1691	40-60 pithouses	2	xxx	1
LA 6565	60 rooms	2	xxx	xxx
LA 6565	60 rooms	2	xxx	xxx
LA 6565	60 rooms	2	xxx	xxx
LA 53	24+ pithouses	1	xxx	xxx
LA 53	24+ pithouses	1	xxx	1
LA 54955	5 roomblocks/200 rooms	4	Cobble stone masonry	xxx

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Site Number	Additional Information and Notes
LA 8891	Ramp entryway, in roomblock, not burned, constructed during last occupation; 15-20 rooms.
LA 1119	Also Yea's U136. Great Kiva 70-100 meters from roomblocks, six pit structures and 12 roomblocks.
LA 2112	AKA Block Lookout Site; nine burials; six cremations, sipapu covered with crystalline aragonite stone, lots of dedicatory effects, intentionally burned.
LA 84657	Great Kiva, seven pithouses - ARMS says A.D. 200-600.
LA 38624	
W:9:10	Seventeen pithouses, one kiva, one ball court.
LA 64931	Thirty-five pit structures at the site. The C14 dates for the structure are A.D. 460-497. 74 m2 (Wheat 1955).
LA 64931	
LA 64931	
LA 1691	Also Z:5:60 and LA 15002.
LA 1691	Also Z:5:60 and LA 15002.
LA 1691	Also Z:5:60 and LA 15002.
LA 6565	Sixty rooms; ramp entryway (note on ARMS form says there are four excavated kivas at the site).
LA 6565	Sixty rooms; ramp entryway.
LA 6565	Sixty rooms.
LA 53	Two meter long entryway.
LA 53	One meter long entryway; burned; largest pit structure on site.
LA 54955	ARMS says three Great Kivas at site - A.D. 500-1400, as do McKenna and Bradford. Size estimated from site sketch.

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Appendix II.
xxx = missing data

Site Number	References
LA 8891	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 1119	Nelson 1993b, 1993c
LA 2112	Wiseman 1976.
LA 84657	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 38624	Wheat 1955.
W:9:10	Johnson 1961; Neely 1974.
LA 64931	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 64931	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 64931	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 1691	Anyon and LeBlanc 1980; Cosgrove and Cosgrove 1974 [1932].
LA 1691	Anyon and LeBlanc 1980; Carlson 1965.
LA 1691	Anyon and LeBlanc 1980; Cosgrove and Cosgrove 1974 [1932].
LA 6565	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 6565	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 6565	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 53	Bradfield 1927-1928; Anyon and Creel 2003.
LA 53	Bradfield 1931; Anyon and Creel 2003.
LA 54955	Anyon and LeBlanc 1980; Cosgrove 1923; McKenna and Bradford 1986.

Appendix II.
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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
AZ P:16:2	Tla Kii	3	No, not completed	Kiva 2	EP
AZ P:16:2	Tla Kii	3	No, replaced Kiva 2	Kiva 52	EP
AZ P:16:2	Tla Kii	3	No, integration	Kiva 1	EP
LA 16241	Treasure Hill	2	Yes	Room 6	EP
LA 16241	Treasure Hill	2	Yes	Room 8	EP
AZ W:9:123	Turkey Creek	4	No, later than others	Great Kiva	ELP
AZ W:9:123	Turkey Creek	4	Yes, coeval with Room 237-K2	Room 152-K1	ELP
AZ W:9:123	Turkey Creek	4	Yes	Room 251-K3	ELP
AZ W:9:123	Turkey Creek	4	Yes, Coeval with Room 152-K1	Room 237-K2	ELP
LA 9709	Turkey Foot Ridge	1	n/a	Pithouse K	MPS
	Turquoise Ridge	1	n/a	Structure 35	MPS
LA 3271	Valley View	1	n/a	Room 2	ELP
LA 88889	Victorio	3	Unknown	None given	ELP
LA 88889	Victorio	3	Unknown	None given	ELP

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
AZ P:16:2	1035; 1113+/-2	Tree-ring non-cutting date; radiocarbon date	12	xxx	Rectangular	2
AZ P:16:2	1000-1150; 1008+x to 1123+/-1 (Haury 1985)	Ceramic date; Tree-ring non-cutting date ranges	260.2	xxx	xxx	xxx
AZ P:16:2	1008-1121	Tree-ring non-cutting dates	287.6	I	Circular	1
LA 16241	1000-1150	Ceramic date	14.3	A	Rectangular	2
LA 16241	1000-1150	Ceramic date	14.6	A	Rectangular	2
AZ W:9:123	1240	Tree-ring cutting date	180	P	Rectangular	2
AZ W:9:123	1225-1286	Archaeomagnetic date range	11.6	A	Circular	1
AZ W:9:123	1225-1286	Archaeomagnetic date range	13	A	Rectangular	2
AZ W:9:123	1225-1286	Archaeomagnetic date range	14	A	Rectangular	2
LA 9709	767r; 751vv; 767vv; 774vv; 775vv; 777vv; 778vv; 767-773vv	Tree-ring cutting and non-cutting dates	59.2	xxx	Rectangular	2
	770-820	Archaeomagnetic date range	30	xxx	Circular	1
LA 3271	1100-1250	Ceramic date	29.3	xxx	xxx	xxx
LA 88889	1100-1200	Ceramic date	xxx	xxx	xxx	xxx
LA 88889	1100-1200	Ceramic date	xxx	xxx	xxx	xxx

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
AZ P:16:2	None	0	Southeast	Bench	0	0	0	0	0	0	0	0	0	1	0
AZ P:16:2	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
AZ P:16:2	Stepped entryway	3	Southeast	Bench, annex rooms added to kiva	0	0	0	0	0	0	0	0	0	1	1
LA 16241	xxx	xxx	South	Vent	0	1	0	0	0	0	0	0	0	0	0
LA 16241	xxx	xxx	West	Vent	0	1	0	0	0	0	0	0	0	0	0
AZ W:9:123	Ramp	2	Southeast	Foot drum, hearth	0	0	0	0	0	0	0	0	1	0	0
AZ W:9:123	No info	xxx	xxx	Hearth	0	0	0	0	0	0	0	0	0	0	0
AZ W:9:123	Roof entry	1	Southeast	Burial, hearths	0	0	0	0	0	0	1	0	0	0	0
AZ W:9:123	Roof entry	1	Southeast	Vent, storage bin (portions of room walled off to create this bin), hearths	0	1	0	0	0	1	0	0	0	0	0
LA 9709	Stepped entryway	3	East	Pits	0	0	0	0	3	0	0	0	0	0	0
	Ramp	2	Southeast	Possible vent, bench, firepit	0	1	0	0	0	0	0	0	0	1	0
LA 3271	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 88889	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 88889	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
AZ P:16:2	0	No formal hearth	6	xxx	East-central Arizona
AZ P:16:2	xxx	xxx	xxx	xxx	East-central Arizona
AZ P:16:2	xxx	xxx	xxx	xxx	East-central Arizona
LA 16241	xxx	xxx	xxx	Ft. Bayard	Grant Co, southwestern New Mexico
LA 16241	xxx	xxx	xxx	Ft. Bayard	Grant Co, southwestern New Mexico
AZ W:9:123	1	Circular	1	Natanes Mountains	Graham Co, east-central Arizona
AZ W:9:123	1	Circular	1	Natanes Mountains	Graham Co, east-central Arizona
AZ W:9:123	3	1 Circular, 1 rectangular	1,2	Natanes Mountains	Graham Co, east-central Arizona
AZ W:9:123	3	2 Circular, 1 unknown	1	Natanes Mountains	Graham Co, east-central Arizona
LA 9709	xxx	xxx	xxx	Bull Basin	Catron Co, Western New Mexico
	1	Fire pit	8	El Paso	El Paso Co, West Texas
LA 3271	xxx	xxx	xxx	Squirrel Spring Canyon	Catron Co, Western New Mexico
LA 88889	xxx	xxx	xxx	Montoya Bluff	Southwestern New Mexico
LA 88889	xxx	xxx	xxx	Montoya Bluff	Southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
AZ P:16:2	Forestdale Creek	First terrace	Piñon/Juniper	6000	Carrizo
AZ P:16:2	Forestdale Creek	First terrace	Piñon/Juniper	6000	Carrizo
AZ P:16:2	Forestdale Creek	First terrace	Piñon/Juniper	6000	Carrizo
LA 16241	Cameron Creek	Ridge	Grassland	6060	Classic
LA 16241	Cameron Creek	Ridge	Grassland	6060	Classic
AZ W:9:123	Turkey Creek	Ridge	Grassland	6600	Tularosa
AZ W:9:123	Turkey Creek	Ridge	Grassland	6600	Tularosa
AZ W:9:123	Turkey Creek	Ridge	Grassland	6600	Tularosa
AZ W:9:123	Turkey Creek	Ridge	Grassland	6600	Tularosa
LA 9709	San Francisco River	Ridge	Forest	6240	San Francisco/Three-Circle
	Rio Grande	Ridge	Scrubland	3500	San Francisco-Three Circle
LA 3271	xxx	Hilltop	Forest	6560	Reserve/Tularosa
LA 88889	xxx	Terrace	Woodland	6000	Late Reserve/Early Tularosa
LA 88889	xxx	Terrace	Woodland	6000	Late Reserve/Early Tularosa

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
AZ P:16:2	21 rooms	1	xxx	0
AZ P:16:2	21 rooms	1	xxx	xxx
AZ P:16:2	21 rooms	1	Hard packed clay floor, masonry walls	0
LA 16241	70+ rooms in six roomblocks	2	Masonry walls	xxx
LA 16241	70+ rooms in six roomblocks	2	Masonry walls	xxx
AZ W:9:123	335 rooms	5	xxx	xxx
AZ W:9:123	335 rooms	5	xxx	3
AZ W:9:123	335 rooms	5	xxx	xxx
AZ W:9:123	335 rooms	5	xxx	1
LA 9709	10-20 pithouses (14 pithouses, 1 non-residential)	1	xxx	xxx
	xxx	xxx	xxx	xxx
LA 3271	10-12 rooms	1	xxx	xxx
LA 88889	36 surface rooms	1	xxx	xxx
LA 88889	36 surface rooms	1	xxx	xxx

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Site Number	Additional Information and Notes
AZ P:16:2	Construction of this structure was not completed, abandoned for construction of the GK, 21 room pueblo.
AZ P:16:2	
AZ P:16:2	East-central Arizona, kiva burned, 25m south of the pueblo, stepped entrance. Twenty-one room pueblo, largely destroyed by erosion.
LA 16241	In North House roomblock.
LA 16241	In East House roomblock.
AZ W:9:123	Constructed early; Measurement from map; 335 rooms, Great Kiva, three small kivas, several formal plazas at the site. Tree-ring date A.D. 1240.
AZ W:9:123	Covered by dwellings, 335 rooms.
AZ W:9:123	Three hundred and thirty-five rooms.
AZ W:9:123	Covered by dwellings, 335 rooms.
LA 9709	Tree ring dates: A.D. 751vv; 767vv; 774vv.
	Also TX:4:132. Lateral entryway. The structure is three times as large as other structures at the site.
LA 3271	Ten to twelve room rectangular pueblo with two kivas.
LA 88889	Thirty-six surface rooms/447 rooms according to Mogollon Conference paper (2002).
LA 88889	Thirty-six surface rooms.

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Appendix II.
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Site Number	References
AZ P:16:2	Haury 1985; Herr 2001.
AZ P:16:2	Haury 1985; Herr 2001.
AZ P:16:2	Haury 1985; Herr 2001.
LA 16241	Anyon and LeBlanc 1980; Cosgrove 1923.
LA 16241	Anyon and LeBlanc 1980; Cosgrove 1923.
AZ W:9:123	Rick Karl personal communication; Lowell 1991.
AZ W:9:123	Rick Karl personal communication; Lowell 1991.
AZ W:9:123	Rick Karl personal communication; Lowell 1991.
AZ W:9:123	Rick Karl personal communication; Lowell 1991.
LA 9709	Diehl and Le Blanc 2001; Lightfoot and Feinman 1982; Martin and Rinaldo 1950; Wheat 1955.
	Whalen 1994.
LA 3271	Schroder et al. 1954; Wendorf 1954.
LA 88889	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 88889	Laboratory of Anthropology, Santa Fe, New Mexico.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 88889	Victorio	3	Unknown	None given	ELP
LA 19071	Warm springs	1	n/a	Kiva	Pit Structure
LA 8675	West Fork	2	Unknown	10	EP
LA 8675	West Fork	2	Unknown	6	EP
LA 4424	Wheatley Ridge	1	n/a	House 7	LPS
LA 18903	Wheaton Smith	1	n/a	Unit 34	EP
LA 127260	Wind Mountain	12	Yes	House P2	EP
LA 127260	Wind Mountain	12	Yes	Room 3	EP
LA 127260	Wind Mountain	12	Yes	Room 15	EP
LA 127260	Wind Mountain	12	Yes	Room 7	EP
LA 127260	Wind Mountain	12	Yes	House V	EP
LA 127260	Wind Mountain	12	Yes	House Y	LPS
LA 127260	Wind Mountain	12	Yes	House U	LPS
LA 127260	Wind Mountain	12	Yes	House XX	LPS
LA 127260	Wind Mountain	12	Yes	House X	LPS

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 88889	1100-1200	Ceramic date	xxx	xxx	xxx	xxx
LA 19071	600-1000	General period date	62	xxx	Rectangular	2
LA 8675	1000-1150	Ceramic date	9.8	A	Rectangular	2
LA 8675	1000-1150	Ceramic date	16	A	Rectangular	2
LA 4424	870-936	Archaeomagnetic date range	100.4	xxx	Rectangular	2
LA 18903	1000-1150	Ceramic date	28.8	A	Square	6
LA 127260	1100	Tree-ring non-cutting date	18.24	A	Rectangular	2
LA 127260	1000-1150		9.06	A	Rectangular	2
LA 127260	1030-1150	Archaeomagnetic date range	8.96	A	Rectangular	2
LA 127260	1040-1130	Archaeomagnetic date range	37.9	A	Rectangular	2
LA 127260	970-1080	Archaeomagnetic date range	15.27	A	Rectangular	2
LA 127260	750-1000	Ceramic date	29.84	A	Rectangular	2
LA 127260	750-1000	Ceramic date	36.9	A	Rectangular	2
LA 127260	778-1030	Archaeomagnetic date range	27.95	P	Rectangular	2
LA 127260	800-940	Archaeomagnetic date range	70.5	P	D-shaped	4

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 88889	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 19071	xxx	xxx	121	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 8675	xxx	xxx	Southwest	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 8675	xxx	xxx	North	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 4424	Ramp	2	East	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 18903	Doorway	4	West	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 127260	Roof entry	1	113	Vent (remodeled entryway from earlier pit structure), hearth	0	1	0	0	0	0	0	0	0	0	0
LA 127260	Roof entry	1	Unknown	Vent, hearths	0	1	0	0	0	0	0	0	0	0	0
LA 127260	Roof entry	1	Unknown	Vent, hearth	0	1	0	0	0	0	0	0	0	0	0
LA 127260	Lateral entry	4	East	Two pits, hearth	0	0	0	0	2	0	0	0	0	0	0
LA 127260	Roof entry	1	85	Vent, hearth	0	1	0	1	0	0	0	0	0	0	0
LA 127260	Ramp	2	188	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 127260	Ramp	2	85	Wall niche, hearth	0	0	0	1	0	0	0	0	0	0	0
LA 127260	Ramp	2	66	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 127260	Ramp	2	102	Wall niche, shelf, massive central post, two floor grooves, hearth	0	0	0	1	0	0	1	0	0	0	2

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 88889	xxx	xxx	xxx	Montoya Bluff	Southwestern New Mexico
LA 19071	xxx	xxx	xxx	Faywood Station	Southwestern New Mexico
LA 8675	1	Circular	1	Little Turkey Park	Southwestern New Mexico
LA 8675	xxx	xxx	xxx	Little Turkey Park	Southwestern New Mexico
LA 4424	1	Unknown shape	7	Reserve	Catron Co, Western New Mexico
LA 18903	1	Rectangular, slab lined	2	San Lorenzo	Grant Co, southwestern New Mexico
LA 127260	1	Rectangular	2	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	2	One circular, one square	1,4	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Rectangular	2	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Circular	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Circular clay lined and collar	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Circular	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Circular	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Circular	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Oval basin with sloping sides	3	Wind Mountain	Grant Co, southwestern New Mexico

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 88889	xxx	Terrace	Woodland	6000	Late Reserve/Early Tularosa
LA 19071	Mimbres River	Floodplain/Valley	Grassland	5025	Late Pit Structure
LA 8675	West Fork Gila River	Terrace/Bench	Marshland	5660	Classic
LA 8675	West Fork Gila River	Terrace/Bench	Marshland	5660	Classic
LA 4424	xxx	Floodplain/Valley	Forest	5960	Reserve/Three-Circle
LA 18903	Mimbres River/Gallina Spring	Bench	Grassland	5680	Classic
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Mangus/Mimbres
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Classic
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Classic
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Classic
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Classic
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Three-circle
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Three-circle
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Three-circle
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	San Francisco/Three circle

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 88889	36 surface rooms	1	xxx	xxx
LA 19071	xxx	xxx	xxx	2
LA 8675	Large	5	xxx	0
LA 8675	Large	5	xxx	xxx
LA 4424	14 pithouses	1	Masonry lined	xxx
LA 18903	xxx	xxx	Cobblestone masonry	0
LA 127260	50+ pit structures & 3 roomblocks	2	Masonry with plaster	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Cobble stone masonry	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean, built in fill of House U	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Built over House AB; subsurface	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean	xxx

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Site Number	Additional Information and Notes
LA 88889	Thirty-six surface rooms.
LA 19071	Also Y:8:32. Burned, termination objects.
LA 8675	Also known as the TJ Ranch Homestead. The communal structure is attached to a roomblock.
LA 8675	Also known as the TJ Ranch Homestead.
LA 4424	
LA 18903	Also Z:1:46. Communal structure is attached to a roomblock.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM Y:7:1. VERY DEEP STRUCTURE - 220 cm; Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.

Appendix II.
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Site Number	References
LA 88889	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 19071	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 8675	Anyon and LeBlanc 1980; Ice 1968.
LA 8675	Anyon and LeBlanc 1980; Ice 1968.
LA 4424	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 18903	Anyon and LeBlanc 1980.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Anyon and Creel 2003; Woosley, and McIntyre 1996.

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Appendix II.
xxx = missing data

Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 127260	Wind Mountain	12	Yes	House AB	MPS
LA 127260	Wind Mountain	12	Yes	House AK	MPS
LA 127260	Wind Mountain	12	Yes	House O	MPS
LA 34813	Winn Canyon	1	n/a	Room 2/Kiva	EPS
LA 3259	WNMT 41	1	n/a	None given	Mogollon
LA 3278	WNMT 92/Glenwood Highway Salvage #1	1	n/a	Kiva	Mogollon
LA 2454	Woodrow	2	Unknown	None given	EP
LA 2454	Woodrow	2	Unknown	None given	EP
LA 3099	WS Ranch/McKeen	2	No, LP	Kiva G	LP
LA 3099	WS Ranch/McKeen	2	No, LPS	Kiva C	LPS
LA 1294	Yeo 194	1	n/a	Great Kiva	EP
LA 3274		2	No, ELP	None given	ELP
W:10:37		5	Yes	Kiva 5	ELP
W:10:37		5	Yes	Kiva 3	ELP
W:10:37		5	Yes	Kiva 2	ELP

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Appendix II.
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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 127260	620-730	Archaeomagnetic date range	40.5	A	Oval	5
LA 127260	640-780	Archaeomagnetic date range	29.85	A	Square	6
LA 127260	650-750	Ceramic date	28.24	A	Circular	1
LA 34813	310+/-75	Radiocarbon date	63.5	S	Circular with lobes	3
LA 3259	650-1350	General cultural date	14	xxx	Rectangular	2
LA 3278	600-1200	General cultural date	15.9	xxx	xxx	xxx
LA 2454	1000	Ceramic date	120	P	Rectangular	2
LA 2454	1000	Ceramic date	279	P	Rectangular	2
LA 3099	1175-1400	Ceramic date	13	xxx	Circular	1
LA 3099	950 +/-80	Radiocarbon date	39.7	A	Rectangular	2
LA 1294	1000-1175	Ceramic date	279	xxx	xxx	xxx
LA 3274	1200	Tree-ring non-cutting date	xxx	I	Rectangular	2
W:10:37	1150-1265	Ceramic date	7.5	xxx	Irregular	7
W:10:37	1150-1265	Ceramic date	9.6	xxx	Square	6
W:10:37	1150-1265	Ceramic date	10.5	xxx	Square	6

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 127260	Ramp	2	117	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 127260	Ramp	2	15	Three pits, burial, multiple post holes, hearth	0	0	0	0	3	0	1	0	0	0	0
LA 127260	Destroyed by subsequent construction	ND	East	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 34813	Roof entry	1	103	Hearth	0	0	0	0	0	0	0	0	0	0	0
LA 3259	Ramp	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3278	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 2454	Ramp	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 2454	Ramp	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3099	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3099	xxx	xxx	South	2 floor vaults, hearth	0	0	0	0	0	0	0	2	0	0	0
LA 1294	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3274	Ramp	2	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
W:10:37	xxx	xxx	South	Vent	0	1	0	0	0	0	0	0	0	0	0
W:10:37	xxx	xxx	East	Vent, hearth	0	1	0	0	0	0	0	0	0	0	0
W:10:37	Roof entry	1	East	Vent, storage pit, hearth	0	1	0	0	0	1	0	0	0	0	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 127260	1	Circular	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Oval	3	Wind Mountain	Grant Co, southwestern New Mexico
LA 127260	1	Circular	1	Wind Mountain	Grant Co, southwestern New Mexico
LA 34813	1	Unknown shape	7	Canteen Canyon	Grant Co, southwestern New Mexico
LA 3259	xxx	xxx	xxx	Squirrel Springs	Catron Co, Western New Mexico
LA 3278	xxx	xxx	xxx	Glenwood	Catron Co, Western New Mexico
LA 2454	xxx	xxx	xxx	Canteen Canyon	Grant Co, southwestern New Mexico
LA 2454	xxx	xxx	xxx	Canteen Canyon	Grant Co, southwestern New Mexico
LA 3099	xxx	xxx	xxx	Alma	Catron Co, Western New Mexico
LA 3099	1	Unknown shape	7	Alma	Catron Co, Western New Mexico
LA 1294	xxx	xxx	xxx	Monticello	Southwestern New Mexico
LA 3274	xxx	xxx	xxx	Squirrel Springs Canyon	Catron Co, Western New Mexico
W:10:37	xxx	xxx	xxx	Point of Pines West	East-central Arizona
W:10:37	1	Circular	1	Point of Pines West	East-central Arizona
W:10:37	1	Circular	1	Point of Pines West	East-central Arizona

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	Georgetown/San Francisco
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	San Francisco
LA 127260	Upper Gila drainage	Ridge	Scrubland	5640	San Francisco
LA 34813	Gila River	Terrace	Woodland	4620	Cumbre
LA 3259	xxx	Terrace/Hill slope	Woodland	6535	San Francisco-Post Classic
LA 3278	xxx	Hilltop	Grassland	4680	Mimbres
LA 2454	Gila River	Bench	Grassland	4640	Classic
LA 2454	Gila River	Bench	Grassland	4640	Classic
LA 3099	xxx	Terrace	Grassland	4960	Tularosa
LA 3099	xxx	Terrace	Grassland	4960	Three-Circle
LA 1294	xxx	Bench	Scrubland	5625	Mangus/Mimbres
LA 3274	xxx	Hill slope	Forest	6500	Late Tularosa
W:10:37	Willow Creek	Ridge	Woodland	6000	Tularosa
W:10:37	Willow Creek	Ridge	Woodland	6000	Tularosa
W:10:37	Willow Creek	Ridge	Woodland	6000	Tularosa

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 127260	50+ pit structures & 3 roomblocks	2	Subterranean	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Possible Hohokam influence; subsurface	xxx
LA 127260	50+ pit structures & 3 roomblocks	2	Unplastered walls	xxx
LA 34813	60 pit structures	2	xxx	xxx
LA 3259	60-80 rooms& five 30-50 room roomblocks	4	Unshaped cobbles	xxx
LA 3278	20 rooms	1	xxx	xxx
LA 2454	16 roomblocks/300 rooms	4	xxx	xxx
LA 2454	16 roomblocks/300 rooms	4	xxx	xxx
LA 3099	100+ rooms	3	xxx	xxx
LA 3099	100+ rooms	3	Cobble and adobe, masonry lined	0
LA 1294	2 roomblocks	2	xxx	xxx
LA 3274	33 rooms	1	Masonry walls	xxx
W:10:37	40 rooms	1	xxx	xxx
W:10:37	40 rooms	1	xxx	xxx
W:10:37	40 rooms	1	xxx	xxx

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Site Number	Additional Information and Notes
LA 127260	Also NM Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950. Archaeomagnetic date A.D. 650-870.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 127260	Also NM:Y:7:1. Mangas Creek, Burro Mountains; ARMS says five kivas 950-1150; eight kivas 550-950.
LA 34813	Largest pit structure period site in the Mimbres region. A.D. 411 (Lekson); 350 B.C.
LA 3259	Great Kiva and small Kiva (ARMS); associated storage room; main roomblock 60-80 rooms; surrounded by five small 30-50 room roomblocks.
LA 3278	Twenty or more rooms.
LA 2454	Three kivas total; two from 600-1000; one from 1000-1400 (ARMS); 16 roomblocks with 300 rooms and 33 pit depressions.
LA 2454	Three kivas total; two from 600-1000; one from 1000-1400 (ARMS); 16 roomblocks with 300 rooms and 33 pit depressions.
LA 3099	Small structure.
LA 3099	One hundred and fifty rooms at the site. The kiva is closest to roomblocks A and B.
LA 1294	Dates are from the ARMS database.
LA 3274	Great Kiva - 150 yards from site to the N, Ramp entryway; 33 stone masonry rooms.
W:10:37	Forty rooms.
W:10:37	Forty rooms.
W:10:37	Forty rooms.

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Appendix II.
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Site Number	References
LA 127260	Anyon and Creel 2003; Woosley, and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 127260	Woosley and McIntyre 1996.
LA 34813	Anyon and LeBlanc 1980; Fitting 1973.
LA 3259	Wendorf 1954.
LA 3278	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 2454	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 2454	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 3099	Accola and Neely 1980; Fitting et al. 1982; Robinson 1991; Robinson and Cameron; Shaffer and Neely 1992.
LA 3099	Accola and Neely 1980; Fitting et al. 1982; Robinson et al. 1991.
LA 1294	Lekson 1985.
LA 3274	Martin et al. 1957; Wendorf 1954.
W:10:37	Olson 1959; Stone 2001.
W:10:37	Olson 1959; Stone 2001.
W:10:37	Olson 1959; Stone 2001.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
W:10:37		5	Yes	Kiva 1	ELP
W:10:37		5	Yes	Kiva 4	ELP
W:10:57		1	n/a	Kiva 1	ELP
W:10:65		2	Unknown	Kiva 2	ELP
W:10:65		2	Unknown	Kiva 1	ELP
LA 14883		?	n/a	None given	EP
LA 18753		1	n/a	None given	EP
LA 3272		1	n/a	None given	EP
LA 5389		1	n/a	None given	EP
LA 5405		1	n/a	None given	EP
LA 6079		1	n/a	None given	EP
LA 66686		1	n/a	Kiva	EP
LA 68709		2	No, EP	None given	EP
W:10:47		1	n/a	Kiva 1	LLP
W:10:48		1	n/a	Kiva 1	LLP
W:10:52		2	Unknown	Kiva 1	LLP
W:10:52		2	Unknown	Kiva 2	LLP

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
W:10:37	1150-1265	Ceramic date	10.6	xxx	Rectangular	2
W:10:37	1150-1265	Ceramic date	17.3	xxx	Irregular	7
W:10:57	1150-1265	Ceramic date	21.1	xxx	Rectangular	2
W:10:65	1150-1265	Ceramic date	10.9	A	Oval	5
W:10:65	1150-1265	Ceramic date	11	A	Oval	5
LA 14883	1000-1175	Ceramic date	xxx	P	xxx	xxx
LA 18753	1000-1175	Ceramic date	15.24	S	xxx	xxx
LA 3272	1000-1175	Ceramic date	xxx	P	xxx	xxx
LA 5389	1000-1100	Ceramic date	xxx	xxx	xxx	xxx
LA 5405	1000-1100	Ceramic date	xxx	xxx	xxx	xxx
LA 6079	1000-1175	Ceramic date	xxx	P	xxx	xxx
LA 66686	1000-1150	Ceramic date	42	P	Rectangular	2
LA 68709	1000-1150	Ceramic date	xxx	xxx	xxx	xxx
W:10:47	1400-1450	Archaeomagnetic date range	19	xxx	Rectangular	2
W:10:48	1400-1450	Archaeomagnetic date range	21.2	xxx	Rectangular	2
W:10:52	1400-1450	Archaeomagnetic date range	20.1	xxx	Rectangular	2
W:10:52	1400-1450	Archaeomagnetic date range	20.1	xxx	Rectangular	2

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Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
W:10:37	Roof entry	1	South	Vent, bench/platform, hearths	0	1	0	0	0	0	0	0	0	1	0
W:10:37	Roof entry	1	East	Vent, storage pit, foot drum, hearth	0	1	0	0	0	1	0	0	1	0	0
W:10:57	Roof entry	1	North	Vent, hearth	0	1	0	0	0	0	0	0	0	0	0
W:10:65	Destroyed	D	xxx	No features identified	0	0	0	0	0	0	0	0	0	0	0
W:10:65	Destroyed	D	xxx	No features identified	0	0	0	0	0	0	0	0	0	0	0
LA 14883	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 18753	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3272	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 5389	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 5405	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 6079	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 66686	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 68709	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
W:10:47	xxx	xxx	South	Vent, bench/platform, wall niche, sipapu, hearth	1	1	0	1	0	0	0	0	0	1	0
W:10:48	xxx	xxx	Southeast	Ash pit, foot drum, platform, vent, hearth	1	0	0	0	1	0	0	0	1	1	0
W:10:52	Roof entry	1	East	Vent, bench/platform, hearth	0	1	0	0	0	0	0	0	0	1	0
W:10:52	Ramp	2	Southwest	Vent, wall niches, bench, footdrum/floor groove, hearth	0	1	0	2	0	0	0	1	1	1	0

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Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
W:10:37	3	One square, one circular	1,4	Point of Pines West	East-central Arizona
W:10:37	1	Circular	1	Point of Pines West	East-central Arizona
W:10:57	1	Rectangular	2	Point of Pines East	East-central Arizona
W:10:65	0	No formal hearth	6	Point of Pines East	East-central Arizona
W:10:65	0	No formal hearth	6	Point of Pines East	East-central Arizona
LA 14883	xxx	xxx	xxx	Largo Mesa	Catron Co, Western New Mexico
LA 18753	xxx	xxx	xxx	Largo Mesa	Catron Co, Western New Mexico
LA 3272	xxx	xxx	xxx	Aragon	Catron Co, Western New Mexico
LA 5389	xxx	xxx	xxx	Largo Mesa	Catron Co, Western New Mexico
LA 5405	xxx	xxx	xxx	Largo Mesa	Catron Co, Western New Mexico
LA 6079	xxx	xxx	xxx	Gallo Mountain East	Catron Co, Western New Mexico
LA 66686	xxx	xxx	xxx	Silver City	Grant Co, southwestern New Mexico
LA 68709	xxx	xxx	xxx	Williamsburg NW/Saladone Tank	Sierra Co, southwestern New Mexico
W:10:47	1	Rectangular	2	Point of Pines East	East-central Arizona
W:10:48	1	Unknown shape	7	Point of Pines East	East-central Arizona
W:10:52	1	Square	4	Point of Pines East	East-central Arizona
W:10:52	1	Rectangular	2	Point of Pines East	East-central Arizona

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Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
W:10:37	Willow Creek	Ridge	Woodland	6000	Tularosa
W:10:37	Willow Creek	Ridge	Woodland	6000	Tularosa
W:10:57	Willow Creek	Ridge	Woodland	5960	Reserve
W:10:65	Willow Creek	Ridge	Woodland	5980	Reserve
W:10:65	Willow Creek	Ridge	Woodland	5980	Reserve
LA 14883	xxx	Floodplain/Valley	Woodland	7265	Reserve
LA 18753	xxx	Ridge	Woodland	7300	Reserve
LA 3272	xxx	xxx	Forest	6900	Apace Creek
LA 5389	xxx	Terrace	Woodland	7360	Classic
LA 5405	xxx	Ridge	Woodland	7300	Classic
LA 6079	xxx	Terrace	Forest	7840	Reserve
LA 66686	Walnut Creek	Bench	Woodland	6580	Classic
LA 68709	xxx	Terrace	Scrubland	4600	Animas
W:10:47	Willow Creek	Ridge	Woodland	5920	Point of Pines
W:10:48	Willow Creek	Ridge	Woodland	5920	Canyon Creek
W:10:52	Willow Creek	Ridge	Woodland	5920	Point of Pines
W:10:52	Willow Creek	Ridge	Woodland	5920	Point of Pines

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Site Number	Site Size	Site Size Codes	Construction Technique	Burning
W:10:37	40 rooms	1	xxx	xxx
W:10:37	40 rooms	1	xxx	xxx
W:10:57	3 rooms	1	xxx	xxx
W:10:65	40 rooms	1	xxx	xxx
W:10:65	40 rooms	1	xxx	xxx
LA 14883	6 rooms	1	xxx	xxx
LA 18753	75-150 rooms	3	xxx	xxx
LA 3272	6 rooms	1	xxx	xxx
LA 5389	16-20 rooms	1	xxx	xxx
LA 5405	20 rooms	1	xxx	xxx
LA 6079	1 roomblock	1	Coursed masonry	xxx
LA 66686	4 rooms/1 roomblock	1	Cobble and adobe	xxx
LA 68709	7 roomblocks	3	xxx	xxx
W:10:47	100 rooms	2	Flagstone floor	xxx
W:10:48	100 rooms	2	xxx	xxx
W:10:52	100 rooms	2	xxx	xxx
W:10:52	xxx	xxx	Flagstone floor	xxx

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Site Number	Additional Information and Notes
W:10:37	Forty rooms.
W:10:37	Forty rooms.
W:10:57	Three rooms.
W:10:65	Forty rooms at the site; this is the only Point of Pines site with two kivas.
W:10:65	Forty rooms at the site; this is the only Point of Pines site with two kivas.
LA 14883	Two kivas and six rooms.
LA 18753	Also LA 14884. Great Kiva 100 ft north of roomblock, four small kivas area plaza; 75-100 masonry rooms and 50 outlier rooms.
LA 3272	Six room rectangular roomblock with two kivas out front.
LA 5389	Also LA 15389. 16-20 masonry rooms.
LA 5405	Twenty masonry rooms and ARMS says four kivas.
LA 6079	One roomblock.
LA 66686	Four rooms in one roomblock.
LA 68709	ARMS says two kivas, seven roomblocks, roasting feature A.D. 1175-1400.
W:10:47	One hundred rooms, antler burial in room.
W:10:48	One hundred rooms.
W:10:52	One hundred rooms.
W:10:52	One hundred rooms.

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Appendix II.
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Site Number	References
W:10:37	Olson 1959; Stone 2001.
W:10:37	Olson 1959; Stone 2001.
W:10:57	Olson 1959; Stone 2001.
W:10:65	Olson 1959; Stone 2001.
W:10:65	Olson 1959; Stone 2001.
LA 14883	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 18753	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 3272	Wendorf 1954.
LA 5389	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 5405	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 6079	Forest Service - Gallito Springs Project.
LA 66686	Adams 1989.
LA 68709	Dames and Moore 1988 (O' Brian).
W:10:47	Smiley 1952.
W:10:48	Smiley 1952.
W:10:52	Smiley 1952.
W:10:52	Smiley 1952.

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Site Number	Site Name	Total Number of Communal Structures	Contemporary?	Structure Number	Period
LA 4031		1	n/a	None given	LP
LA 68709		2	No, LP	None given	LP
LA 3274		2	No, LPS	Great Kiva	LPS
LA 3921		1	n/a	None given	LPS
LA 39261		4	Unknown	None given	LPS/EP
LA 39261		4	Unknown	Structure H	Mogollon
LA 39261		4	Unknown	Structure K	Mogollon
LA 39261		4	Unknown	Small Kiva 1	Mogollon
LA 43840		1	n/a	None given	Pit Structure
LA 47626		1	n/a	None given	Pueblo
LA 5404		1	n/a	None given	Pueblo

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Site Number	Dates (A.D.)	Dating notes and/or alternative dates	Size (m2)	Location	Structure Shape	Structure Shape Code
LA 4031	1175-1400	Ceramic date	xxx	xxx	xxx	xxx
LA 68709	1175-1400	Ceramic date	xxx	xxx	xxx	xxx
LA 3274	900-1000	Ceramic date	232.2	xxx	Rectangular	2
LA 3921	900-1000	Ceramic date	xxx	xxx	xxx	xxx
LA 39261	850-1150	Ceramic date	25	xxx	Square	6
LA 39261	200-1400	General cultural date	31.2	xxx	xxx	xxx
LA 39261	200-1400	General cultural date	33	xxx	Rectangular	2
LA 39261	200-1400	General cultural date	xxx	xxx	xxx	xxx
LA 43840	600-1000	General period date	21	P	xxx	xxx
LA 47626	1000-1400	General period date	112	S	Circular	1
LA 5404	1000-1400	General period date	xxx	P	xxx	xxx

Appendix II.
xxx = missing data

Site Number	Entryway	Entryway Codes	Orientation	Features	Sipapu	Vent	Deflector	Niche	Pit	Storage Pit	Burials	Floor Vault	Footdrum	Bench	Other
LA 4031	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 68709	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3274	Ramp	2	Southeast	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 3921	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 39261	Ramp	2	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 39261	xxx	xxx	East	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 39261	Ramp	2	82/East	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 39261	Ramp	2	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 43840	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 47626	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0
LA 5404	xxx	xxx	xxx	xxx	0	0	0	0	0	0	0	0	0	0	0

Appendix II.
xxx = missing data

Site Number	Number of Hearths	Hearth Shape	Hearth Shape Codes	Quad Name	General location and/or County
LA 4031	xxx	xxx	xxx	Salazar Canyon	Catron Co, Western New Mexico
LA 68709	xxx	xxx	xxx	Williamsburg NW/Saladone Tank	Sierra Co, southwestern New Mexico
LA 3274	xxx	xxx	xxx	Squirrel Springs Canyon	Catron Co, Western New Mexico
LA 3921	xxx	xxx	xxx	Tejana Mesa	Catron Co, Western New Mexico
LA 39261	xxx	xxx	xxx	Antelope Ridge	Grant Co, southwestern New Mexico
LA 39261	xxx	xxx	xxx	Antelope Ridge	Grant Co, southwestern New Mexico
LA 39261	xxx	xxx	xxx	Antelope Ridge	Grant Co, southwestern New Mexico
LA 39261	xxx	xxx	xxx	Antelope Ridge	Grant Co, southwestern New Mexico
LA 43840	xxx	xxx	xxx	Gallo Mountain West	Catron Co, Western New Mexico
LA 47626	xxx	xxx	xxx	Luna	Catron Co, Western New Mexico
LA 5404	xxx	xxx	xxx	Largo Mesa	Catron Co, Western New Mexico

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Appendix II.
xxx = missing data

Site Number	Water	Topography	Vegetation	Elevation (ft)	Phase Names
LA 4031	xxx	Ridge	Grassland	6600	Reserve
LA 68709	xxx	Terrace	Scrubland	4600	Animas
LA 3274	xxx	Hill slope	Forest	6500	Reserve
LA 3921	xxx	Low rise	Scrubland	6580	Reserve
LA 39261	xxx	Ridge	Grassland	4640	Mimbres
LA 39261	xxx	Ridge	Grassland	4640	Mogollon
LA 39261	xxx	Ridge	Grassland	4640	Mogollon
LA 39261	xxx	Ridge	Grassland	4640	Mogollon
LA 43840	xxx	Ridge	Forest	7840	Pit Structure period
LA 47626	xxx	Ridge	Forest	7180	Mimbres
LA 5404	xxx	Terrace	Woodland	7300	Pueblo

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Appendix II.
xxx = missing data

Site Number	Site Size	Site Size Codes	Construction Technique	Burning
LA 4031	1 roomblock	1	xxx	xxx
LA 68709	7 roomblocks	3	xxx	xxx
LA 3274	33 rooms	1	xxx	0
LA 3921	two 3 room structures	1	Cobblestone masonry	xxx
LA 39261	14 rooms	1	xxx	0
LA 39261	14 rooms	1	xxx	xxx
LA 39261	14 rooms	1	Masonry	xxx
LA 39261	14 rooms	1	xxx	xxx
LA 43840	10 rooms	1	Andesite cobbles	xxx
LA 47626	18 rooms/2 roomblocks	1	Basalt and volcanic tuff cobbles	xxx
LA 5404	10-12rooms/1 roomblock	1	xxx	0

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Appendix II.
xxx = missing data

Site Number	Additional Information and Notes
LA 4031	
LA 68709	ARMS says two kivas, seven roomblocks, roasting feature A.D. 1175-1400.
LA 3274	Great Kiva - Ramp entryway associated storage room; 33 stone masonry rooms.
LA 3921	Two 3 room cobble masonry structures.
LA 39261	Ramp entryway; multi-component site, Great Kiva associated with eight masonry rooms, six cobble based jacal rooms, three small kivas.
LA 39261	
LA 39261	
LA 39261	
LA 43840	One U-shaped roomblock - 10 contiguous rooms.
LA 47626	Separated from roomblock, five meters southwest of roomblocks; two roomblocks with 18 rooms.
LA 5404	One roomblock - 10-12 masonry rooms, kiva in the center.

Appendix II.
xxx = missing data

Site Number	References
LA 4031	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 68709	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 3274	Martin et al. 1957; Wendorf, 1954.
LA 3921	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 39261	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 39261	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 39261	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 39261	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 43840	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 47626	Laboratory of Anthropology, Santa Fe, New Mexico.
LA 5404	Laboratory of Anthropology, Santa Fe, New Mexico.

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