Volume 3: Conclusions and Synthesis

The State Route 188–Cottonwood Creek Project

The Sedentary to Classic Period Transition in Tonto Basin

Edited by Richard Ciolek-Torello and Eric Eugene Klucas

Technical Series 78
Statistical Research, Inc.
Tucson, Arizona, and Redlands, California

THE STATE ROUTE 188–COTTONWOOD CREEK PROJECT

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The Sedentary to Classic Period Transition in Tonto Basin

Richard Ciolek-Torello, general editor

Volume 3: Analyses of Prehistoric Remains

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Cover photo: Overview of Feature 179 pit structure at the Vegas Ruin (405/2012)
before moving compound wall, view northwest

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Eric E. Klucas served as project principal investigator, William L. Deaver served as project director, and Robert M. Wegener as assistant project director. Robert also served as project manager during the final stage of the project. Richard Ciolek-Torrello served as senior principal investigator and supervised the completion of this final volume.

Maria Molina coordinated the production efforts for this volume. Grant Klein was responsible for the technical editing; Jacquelyn Dominguez, Andrew Saiz, and Luke Wisner were the graphics artists; and KeAndra Begay was responsible for the layout design.

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Finally, we extend our sincere appreciation to all those who contributed to this project (see Volumes 1 and 2) and apologize to any that we may have inadvertently omitted.

ABSTRACT

This document is the third and final volume in a series of three volumes presenting the results of a two-phase data recovery program conducted by Statistical Research, Inc. (SRI), at nine prehistoric sites and segments of a historical-period road along a 3.8-mile segment of State Route (SR) 188 near Jakes Corner. The investigations were undertaken under contract with the Arizona Department of Transportation (ADOT) (ECS Contract 99-60, TRACS H4476-03D) because of anticipated impacts to cultural resources located within the SR 188 right-of-way (ROW). The project area is located in western Gila County, mostly within the administrative boundaries of the Tonto National Forest (TNF) (Special-Use Permit No. 2700-4), although a small portion of one archaeological site extended onto private property. The project began near Milepost 269.8, about 3 km north of Slate Creek, and ended at Milepost 273.6, near Jakes Corner. The area encompassed portions of Sections 17, 18, 20–22, 26, 27, 34, and 35, Township 8 North, Range 10 East and Sections 2, 3, 10, 15, 22, 23, 26, and 27, Township 7 North, Range 10 East, on the 1977 Gisela, Arizona, and 1964 (photoinspected 1978) Kayler Butte, Arizona, 7.5-minute U.S. Geological Survey quadrangles.

The investigated prehistoric sites were situated along three small drainages near the boundary between the upper and lower Tonto Basin. Two limited-activity sites were located along Hardt Creek near Jakes Corner. AZ O:15:41/583 was a pre-Classic period *horno* and nearby AZ O:15:103/2061 was a low-density artifact scatter of unknown prehistoric age. A single early Classic period field house, AZ U:3:404/2011, was located on a ridge above Gold Creek. The remaining sites were located in the vicinity of Cottonwood Creek on a terrace adjacent to the Tonto Creek floodplain. The Vegas Ruin (AZ U:3:405/2012) provided the most-extensive sample, including 1 cobble-adobe-foundation compound, 5 Miami/Roosevelt phase pit structures, 38 burials, dozens of extramural features, and 4 Archaic period roasting features. The Crane site (AZ U:3:410/2017) consisted of 1 late Sedentary period or Miami phase pit house and 1 Roosevelt phase roomblock, midden, and 7 burials. The Rock Jaw site (AZ U:3:407/2014) was a late Sedentary period to early Miami phase farmstead with two superimposed pit houses and several extramural pits. AZ U:3:408/2015 was an extensive multicomponent site, of which we investigated 1 pre- Classic period midden. The remaining 2 prehistoric sites were low-density artifact scatters (AZ U:3:406/2013 and AZ U:3:409/2016) that may date to the late Sedentary–Classic period. The final site was a segment of the historical-period Forest Highway 9 (AZ U:3:246/1381), also known as the historical Globe-Payson highway.

Our field investigations and the results of chronometric determinations are discussed in Volume 1. The results of analyses of recovered ceramics, lithics, vertebrate and invertebrate remains, macrobotanical and pollen, and human osteology and dentition from the prehistoric sites are presented in Volume 2. No historical-period artifacts were recovered. In this final volume, we present project syntheses and conclusions.

We begin this volume with an introduction that summarizes the results of excavations at the project sites and others in the vicinity and briefly reviews the culture history, historic contexts, and project research questions. Chapters 2 and 3 discuss chronological issues using ceramic, archaeomagnetic, and radiocarbon data and present of regional chronology based on analyses of chronometric data from a regional database.

Chapter 4 presents a ceramic-vessel functional analysis that examines the project's whole and reconstructable vessels and rim sherds within the context of a model developed from an ethnographic study of several Southwestern cultures. Chapter 5 synthesizes ethnobotanical, faunal, and other subsistence related data from this and other projects in Tonto Basin and adjacent areas to examine Formative period agricultural and hunting practices in upland and lowland desert regions of central Arizona.

Chapters 6 and 7 present two perspectives on the use of mortuary data from the Cottonwood Creek project and other projects in the region to shed light on issues of social complexity and ethnicity in the pre-Classic and Classic periods in central Arizona.

Chapter 8 presents the most-current review of Tonto Basin prehistory, with a focus on the pre-Classic to Classic period transition.

The volume is completed with a list of references and appendixes that provide a compendia of chronometric and mortuary data used in this volume.

CHAPTER 1

Introduction

Richard Ciolek-Torello

This document is the final of three volumes reporting on the results of the State Route 188–Cottonwood Creek Project (CCP), a two-phase data recovery project conducted by Statistical Research, Inc. (SRI), for the Arizona Department of Transportation (ADOT) along a 3.8-mile segment of State Route (SR) 188, near the settlement of Jakes Corner in Gila County, Arizona. The work was conducted through ECS Contract No. 99-60 (TRACS No. H8784-01E) with ADOT on lands administered by Tonto National Forest (TNF). In Volume 1, we present the results of field investigations at nine prehistoric and one historical-period site that were to be impacted by proposed modifications to SR 188. The second volume contains the results of the analyses of artifacts and other archaeological materials recovered from the nine sites. Much of the raw data collected in the course of these investigations are presented in appendices of Volume 2, along with a CD-ROM containing photographs of mortuary artifacts that will be repatriated at the conclusion of the study. In a series of synthetic chapters, the final volume integrates the results of the field investigations and material analyses and places them in a regional context to address project research goals.

The nine prehistoric sites investigated during the course of the project (Table 1; Figure 1) are distributed between three distinct physiographic zones within this short corridor: the Hardt Creek valley, formed by an intermittent stream draining the Mazatzal piedmont within the Upper Tonto Basin; the area of the Mazatzal piedmont drained by Gold Creek; and the Cottonwood Creek locality, which is located at the upper edge of the zone in the Tonto Creek arm of the Lower Tonto Basin. The two northernmost sites, AZ O:15:41/583 (see “Note on Site Designations” below) and AZ O:15:103/2061, are located on the terrace edge to the east of the Hardt Creek floodplain. AZ U:3:404/2011 is located on the summit of a broad ridge above Gold Creek. The remaining prehistoric sites (Vegas Ruin [AZ U:3:405/2012]; the Rock Jaw site [AZ U:3:407/2014]; the Crane site [AZ U:3:410/2017]; and AZ:U:3:406/2013, AZ:U:3:408/2015, and AZ:U:3:409/2016) are located in the Lower Tonto Basin centered on Cottonwood Creek, a large seasonal stream draining the Mazatzal Mountains along the western side of the basin.

The Vegas Ruin was the most important site investigated by the CCP. This multicomponent habitation site contained five pit structures built and occupied during the transition from the late Sedentary to the early Classic period. An early Classic period compound overlay these features. A large burial ground associated primarily with the earlier occupation and scores of extramural features were also found at this settlement along with an extensive midden area. Finally, several roasting features were found that probably date to the Archaic period, as suggested by their stratigraphic position below a calcic horizon into which the burials were excavated.

The Crane site consisted primarily of an early Classic period cobble-adobe-foundation compound and associated midden and burial area. Underlying two granary pedestals associated with the compound was a single pit house that dated to the transition between the late Sedentary and early Classic period. Between these two settlements was the Rock Jaw site, a late Sedentary period farmstead with two superimposed pit houses and several extramural pits. Site 408/2015 is an extensive multicomponent site covering a large terrace area north of Cottonwood Creek between the Mazatzal piedmont and Tonto Creek floodplain. The site consists of several small cobble-adobe-foundation structures, a small compound, and a large midden area that may represent an extensive pre-Classic period settlement. Unfortunately, only a peripheral portion of this settlement was within the project right-of-way (ROW). Here we found an child burial, hearths, and middens. The remaining two prehistoric sites in the Cottonwood Creek vicinity were two low-density artifact scatters (Sites 406/2013 and 409/2016) of late Sedentary to early Classic period age.

Table 1. Cottonwood Creek Project Sites and Features in the Right-of-Way

ASM No.	TNF No.	SRI Designation	Site Name	Location	Occupation
AZ O:15:41	AR-03-12-06-583	Site 41/583		Hardt Creek	pre-Classic period *horno,* possibly early Classic
AZ O:15:103	AR-03-12-06-2061	Site 103/2061		Hardt Creek	Archaic-Formative period lithic scatter
AZ U:3:404	AR-03-12-06-2011	Site 404/2011		Gold Creek	early Classic period field house
AZ U:3:405	AR-03-12-06-2012	Site 405/2012	Vegas Ruin	Cottonwood Creek	4 Archaic period roasting features, 5 late Sacaton–Miami phase pit structures; early Classic period compound and burial ground
AZ U:3:406	AR-03-12-06-2013	Site 406/2013		Cottonwood Creek	late Sedentary–early Classic period artifact scatter
AZ U:3:407	AR-03-12-06-2014	Site 407/2014	Rock Jaw	Cottonwood Creek	late Sedentary–early Classic period farmstead
AZ U:3:408	AR-03-12-06-2015	Site 408/2015		Cottonwood Creek	2 pre-Classic period middens, extramural features, and 1 burial; early Classic period rock alignment
AZ U:3:409	AR-03-12-06-2016	Site 409/2016		Cottonwood Creek	late Sedentary–early Classic period artifact scatter
AZ U:3:410	AR-03-12-06-2017	Site 410/2017	Crane	Cottonwood Creek	1 possibly Archaic hearth; 1 late Sacaton–early Miami phase pit structure; early Classic period compound, 2 granaries, midden, and burial ground
AZ U:3:246	AR-03-12-06-1381	Site 246/1381	Globe-Payson Highway (FH 9)		5 segments of a historical period road and associated features

Key: ASM = Arizona State Museum; FH = Forest Highway; SRI = Statistical Research, Inc.; TNF = Tonto National Forest.

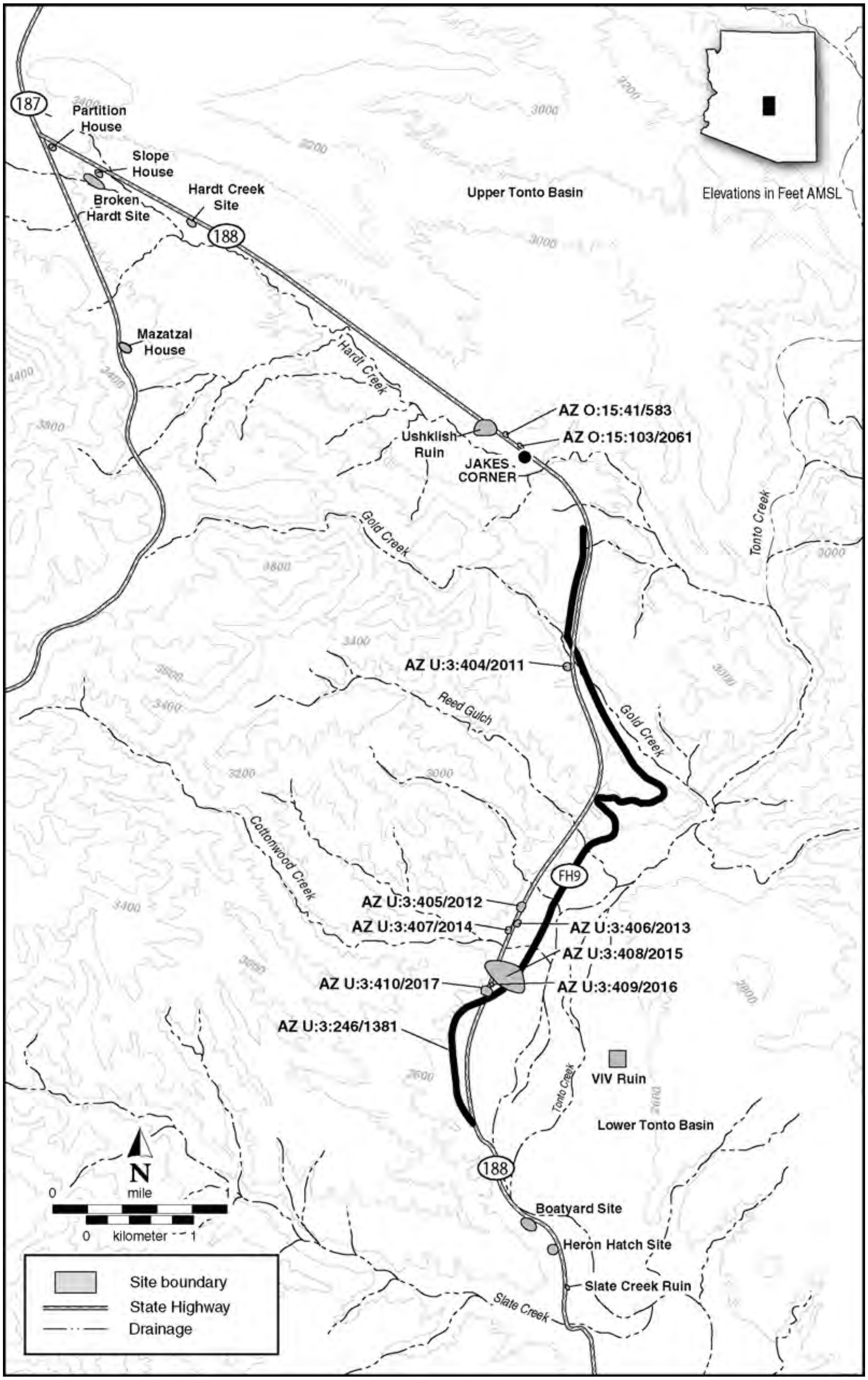

Figure 1. CCP and neighboring sites.

The final site investigated was a segment of the historical-period Forest Highway (FH) 9 (AZ U:3:246/1381), also known as the historical Globe-Payson Highway. The road runs approximately parallel to the current SR 188 roadbed through the entire project area, crossing the highway at two locations. Field investigations revealed that potions of the historical-period road lie approximately from Stations 215+00 to 250+00, from 290+00 to 295+00, and from 325+00 to 330+00 along the current ROW. No historical-period artifacts were identified or collected within the ROW. Several types of features are associated with the road, including the roadbed itself, cuts into the hillside, retaining walls, and bridges. The first three types were identified and recorded during the pedestrian survey. Three bridges were also identified, but these were located outside the project ROW.

Portions of FH 9 have been recorded during other cultural resource management (CRM) projects in the general area. A total of 35 extant segments of FH 9 were recorded between Rye and Payson by Archaeological Research Services, Inc. (ARS) (Bilsbarrow et al. 1999). The road was found to be potentially eligible for listing in the National Register of Historic Places (NRHP) under criteria A and D. FH 9 served as an important transportation link in western Gila County, particularly for the town of Payson, as well as for other smaller communities such as Rye. Because of modern development and highway construction, FH 9 exists only as a discontinuous resource today. This road was an important transportation route in the historical development of Tonto Basin and Payson. Detailed descriptions of the extant segments and history of the road are presented in Volume 1. This site will not be considered further in this volume.

Environmental Setting and Investigated Sites

The CCP area lies within Tonto Basin, located in the mountainous Transition Zone, a 50-mile-wide, 300-mile-long region containing some of the most rugged and isolated country in Arizona. The location of Tonto Basin within the Transition Zone is not only geographically intermediate between the two other major physiographic provinces of Arizona, the northern Colorado Plateau and the southern Basin and Range (Royse et al. 1971:8), but also is intermediate in its geology and biotic communities (see Ciolek-Torrello [1987a] and Welch [1994] for detailed discussions). This environmental diversity gave rise to equally diverse adaptive strategies and cultural traditions and established its essential character (Doyel 1972).

Tonto Basin is bounded by a series of mountain massifs; the basin reaches up to the escarpment of the Mogollon Rim to the north and two great north-south-trending mountain ranges, the Mazatzals and the Sierra Ancha, form its west and east sides (Figure 2). The Pinal and Superstition Mountains enclose the south end of the basin. Tonto Basin has been subdivided in several ways (Fuller et al. 1976; Gregory 1979; Jeter 1978:10; Steen et al. 1962; Wood 1986). The most useful distinction appears to be between the Upper and Lower Tonto Basins (Fuller et al. 1976; Wood 1986), two major geographic divisions which are separated just below Jakes Corner by a large schist outcrop that projects east into the basin from the Mazatzals, almost touching the western flanks of the Sierra Ancha (Wilson et al. 1959). Subtle but important environmental differences distinguish these two basins (Ciolek-Torrello 1987a). Gregory (1979) also distinguished a Salt and Tonto arm in the Lower Tonto Basin, and Wood (1986) has suggested that these geographic zones define different prehistoric settlement systems. The distinction of three physiographic zones—the basin floor or riverine zone, the piedmont, and the mountains proper—has also proven to be useful in discussions of Tonto Basin prehistory (Ciolek-Torrello 1987a; Elson and Huckleberry 1992; Welch 1994). The basin floor consists of the floodplains and alluvial terraces associated with the two major drainages. Much of the basin floor of Tonto Basin has been inundated in recent times by Roosevelt Lake, especially along the Salt arm and the lower reaches of the Tonto arm. Within the project area, however, the basin floor zone remains exposed. The piedmont is the more rugged and heavily dissected upland area between the basin floor and mountains. It consists of the pediment terraces (superficially similar to alluvial terraces but different in origin and distribution [Royse et al. 1971:44]) and mountain slopes, which have been eroded into numerous ridges, canyons, hills, and small intermontane valleys.

Tonto Basin, like other basins below the Mogollon Rim, is probably of middle to late Tertiary age. Prior to the formation of these basins, the geology of central Arizona was characterized by volcanic activity. These basins were formed when the early volcanic deposits were gradually tilted by tectonic activity. In Tonto Basin, the major tectonic displacement occurred along the base of the Mazatzals, with minor displacement along the base of the Sierra Ancha (Royse et al. 1971:10). Tectonic activity subsequent to the formation of the basin appears to be minor. Instead, the geological history of the basin has been characterized by erosion and the formation of terraces and pediment terraces.

Tonto Basin has a semiarid climate with an average annual precipitation about twice that of the Phoenix Basin but significantly less than the adjacent mountains and Mogollon Rim (Sellers and Hill 1974:408). The principal rainfall occurs during the summer months and is associated with surges of moist tropical air that originate in the Gulf of Mexico. Significant rainfall also occurs in the winter months, when moist air comes from the Pacific Ocean. The nearest weather station is at the old Reno Ranger Station

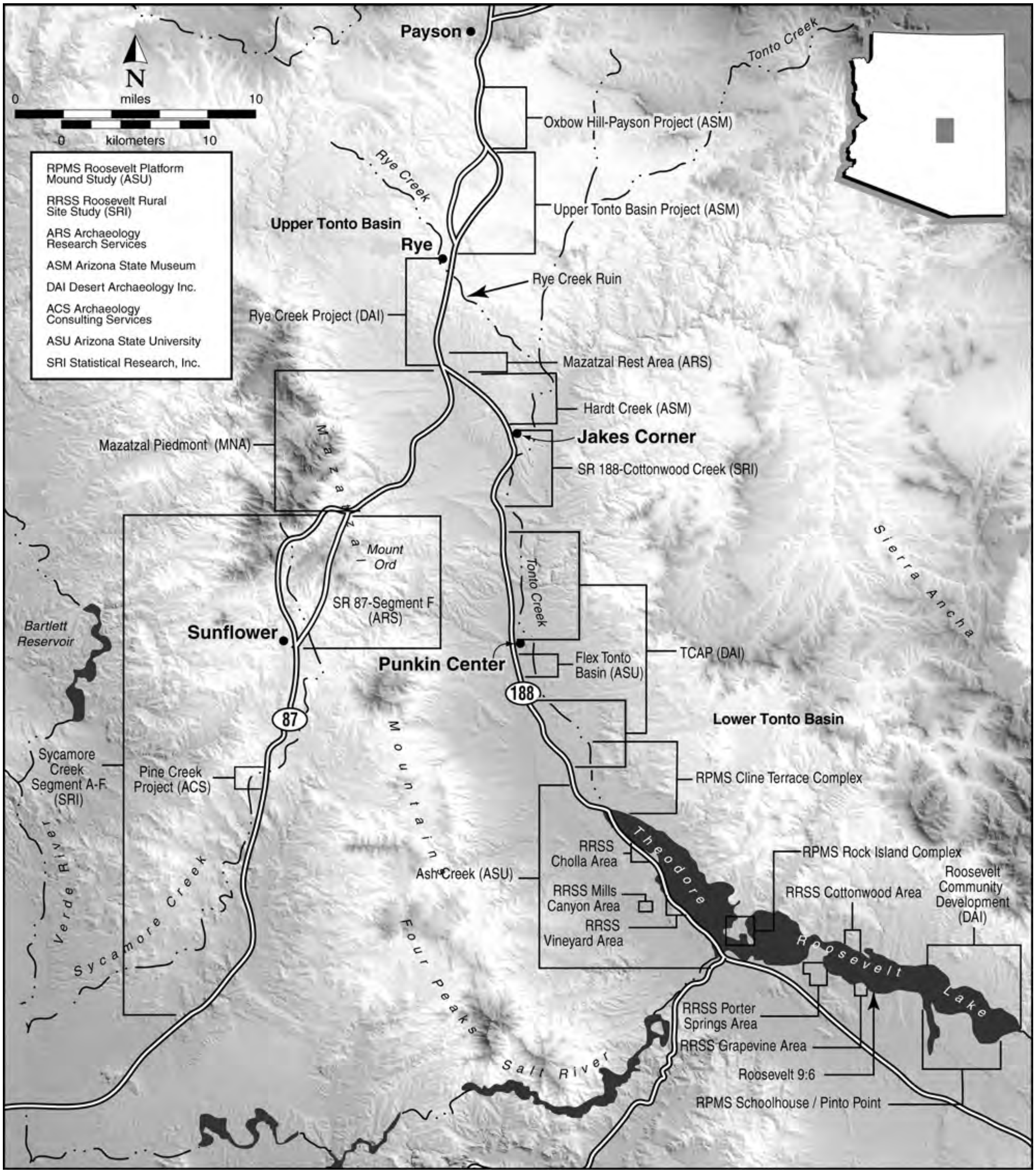

Figure 2. Tonto Basin and adjacent areas showing location of major archaeological investigations.

near Punkin Center, located about 12 km south of the CCP area. The station is situated on the eastern slopes of the Mazatzals at an elevation of 712 m (2,336 feet) above mean sea level (AMSL) in a setting almost identical to the project sites that are in the Lower Tonto Basin. Thus, the climatic history recorded by the weather station between 1931 and 1972 offers an ideal proxy for the lower part of the project area. Sellers and Hill (1974:408) recorded a mean daily maximum temperature of 80.4°F and a mean daily minimum of 50.5°F. Mean annual precipitation is 16.75 inches winter with 0.9 inches of snow. Jeter (1978:16) points out that the implication of the climatic regime "is that growing seasons of more than 200 frost-free days would be quite common . . . affording aboriginal agriculturalists the possibility of staggered cropping, if not double cropping." He adds that the period of more than 300 frost-free days recorded at the Reno Ranger Station and other weather stations in the Lower Tonto Basin has probably been extended in historical times by the presence of Roosevelt Lake and is probably not characteristic of the prehistoric period. Regardless of the length of the growing season, temperature was probably rarely a constraining factor in prehistoric agricultural production in the area. The biggest constraint was undoubtedly the availability of sufficient water.

The major drainages of Tonto Basin are the Salt River and Tonto Creek (see Figure 2), perennial streams that have been impounded at their confluence behind Roosevelt Dam. Wood (1986) has pointed out that prior to the formation of Roosevelt Lake, 44 miles of irrigable stream coursed along the Salt River and Tonto Creek. The availability of such abundant water, together with large expanses of arable land and an unexcelled environmental diversity, offered a high-quality resource base for prehistoric settlement. The irrigation potential of these two streams is difficult to assess, however. Tonto Creek, in particular, is highly irregular and not amenable to patterning (Welch 1994). The annual runoff for the entire watershed area may vary from as much as 2,650,000 acre feet to as little as 162,000 acre feet (Fuller et al. 1976). Smaller tributaries of Tonto Creek in the project area, such as Gold, Cottonwood, Slate, and Hardt Creeks, are seasonal drainages fed by springs and seeps in the uplands of the Mazatzals (Figure 3) (Ciolek-Torrello 1987a:16). Their flow is restricted primarily to the mountain flanks and upper piedmont zones, and their beds are usually dry in the lower areas, where population was concentrated.

Tonto Basin lies entirely within a large area of Arizona defined by Lowe (1976) as the Upper Sonoran Life Zone. Much of the area is characterized by two major plant communities: Interior Chaparral and Desert Grassland. Also prominent are coniferous woodlands in the higher piedmont areas and mixed riparian broadleaf woodlands in isolated areas along the major drainages. Transition Life Zone conifer forests occur in the higher elevations of the Mazatzal, Sierra Ancha, and Pinal Mountains, whereas Lower Sonoran Desertscrub occurs in the basin floor areas, especially in the Lower Tonto Basin.

The bedrock geology of the Mazatzals has been reviewed in detail in other ADOT-sponsored projects along SR 87 (Ciolek-Torrello 1987a; Elson and Huckleberry 1992). The Mazatzals are composed primarily of a mixture of Older Precambrian granite. Outcrops of Precambrian schist are common between Mazatzal Peak and Mount Ord and have been intruded by Precambrian rhyolite and pyroxenite as well as Cretaceous granite (Wilson et al. 1959). The highest part of the mountain range—Mazatzal Peak in the Upper Tonto Basin and Four Peaks in the southern part of the Lower Tonto Basin—are composed of Older Precambrian Mazatzal quartzite, whereas the northern end of the range near Payson consists primarily of a large outcrop of Quaternary basalt (Hardscrabble Mesa) and Older Precambrian metamorphosed volcanics called greenstone (Wilson et al. 1959). A small outcrop of basalt similar to that found at Hardscrabble Mesa is present on the eastern slopes of the Mazatzals north of Slate Creek. This material appears to have been prized by Archaic period hunters and gatherers in the region for the manufacture of projectile points (Dosh et al. 1987; Woodall 1998).

Knoblock et al. (2003) conducted a field study of the geological outcrops in the Sycamore Creek Valley on the western flanks of the Mazatzals with a focus on tool-stone raw materials. In addition to the outcrops listed above, they found quartz, vesicular basalt, andesite, chalcedony, chert, jasper, phyllite, tabular rhyolite, and a variety of sedimentary rocks. Although Tonto Basin exhibits a great deal of geological diversity, with the exception of argillite, a reddish, easily carved ornamental stone, it was relatively poor in exotic mineral resources, especially when compared with the nearby Globe-Miami area. This relative poverty had important implications for changing regional interactions during the long history of occupation in the region (Wood 1985:248–249).

The northern end of the Sierra Ancha offers an almost mirror image of the Mazatzals with outcrops of Older Precambrian schist, greenstone, and intrusive rhyolite. Most of the range, however, is made up of sedimentary formations such as Younger Precambrian Mescal limestone and Dripping Stone quartzite. Large outcrops of Younger Precambrian to Tertiary diabase are also present near its southern and southwestern slopes (Wilson et al. 1959).

In general, the environmental diversity of Tonto Basin provided is inhabitants with a wide range of resources within relatively short distances. The high diversity of resources had an important impact on prehistoric settlement and social organization in the region (Wood 1985, 1986). A very long history of almost continuous settlement from the Middle Archaic to the historical period and a high density of both large and small settlements found within the basin suggests that prehistoric populations took advantage of the region's environmental riches.

The CCP area is located at the transition between the lower and upper divisions of Tonto Basin (see Figure 2). The highway corridor, along which this study took

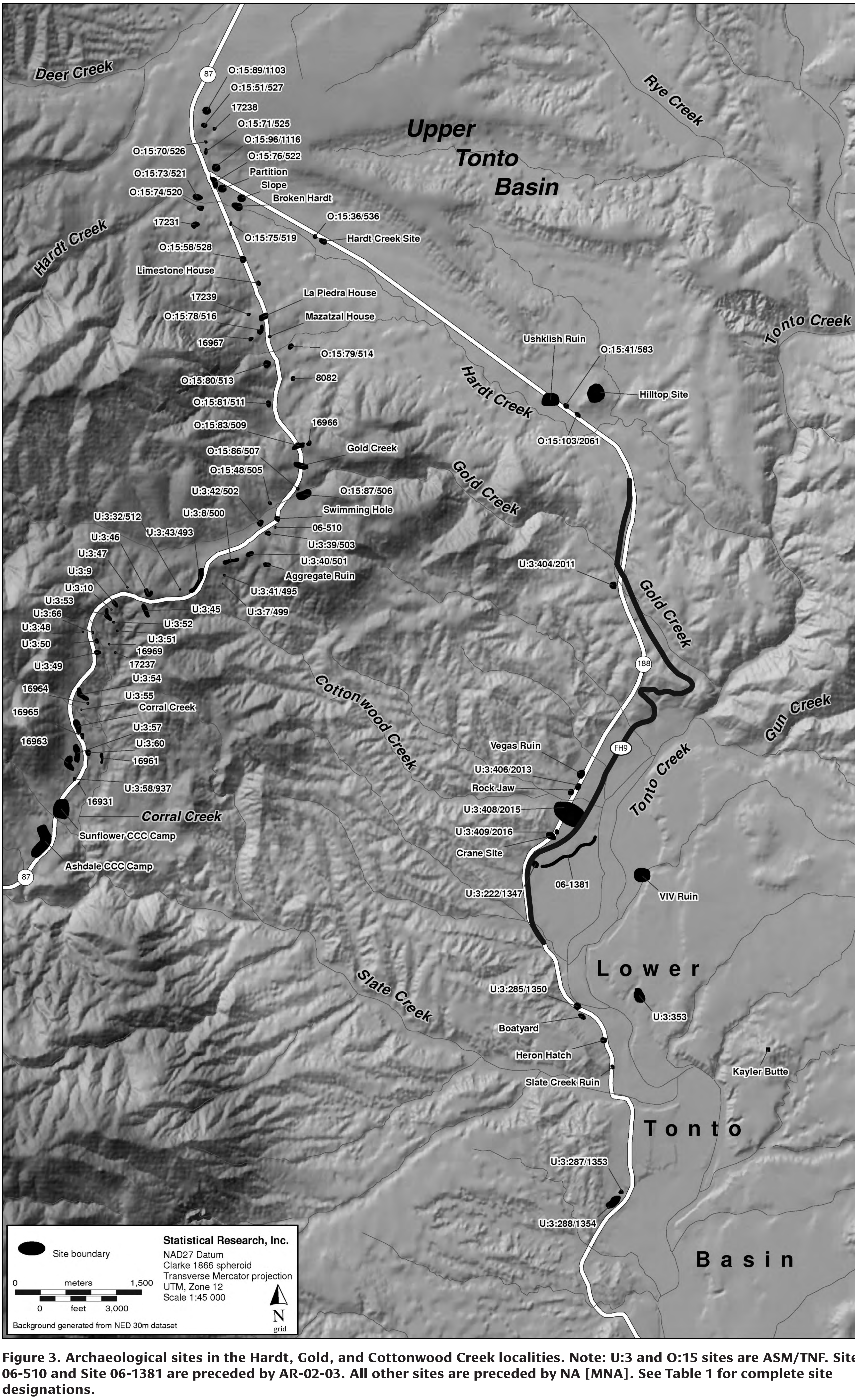

Figure 3. Archaeological sites in the Hardt, Gold, and Cottonwood Creek localities. Note: U:3 and O:15 sites are ASM/TNF. Site 06-510 and Site 06-1381 are preceded by AR-02-03. All other sites are preceded by NA [MNA]. See Table 1 for complete site designations.

place, begins on the low-elevation, desert-scrub-mantled Pleistocene ridges on the lower eastern slopes of the Mazatzals. Here the project area overlooks the broad floodplain of Tonto Creek less than 2 miles south of the point where a large schist outcrop constricts the floodplain into a narrow gorge, separating Tonto Basin into its two major geographic divisions. Beyond this point, the corridor passes north through a deep manmade cut into the schist outcrop, crosses Gold Creek—here a small deeply entrenched stream—and enters the small upland valley of Hardt Creek in Upper Tonto Basin.

The area through which the highway corridor passes can be divided into three localities: the Hardt Creek valley, formed by an intermittent stream draining the Mazatzal piedmont within the Upper Tonto Basin; the area of the Mazatzal piedmont drained by Gold Creek; and the Cottonwood Creek locality, which is located at the upper edge of the basin zone in the Tonto arm of the Lower Tonto Basin (see Figure 1). Hardt Creek valley opens into a small upland basin at the foot of the more rugged and heavily dissected piedmont area between the mountains and basin floor. Gold Creek is a deeply entrenched drainage within the project area and contains only one project site, but forms another small upland valley in the Mazatzal piedmont. The Cottonwood Creek locality is distinguished by another small, intermittent stream that drains the eastern slopes of the Mazatzals at the upper end of Lower Tonto Basin. This locality is dominated by the broad floodplain of Tonto Creek between the schist outcrop and a slight narrowing in the basin below the point at which Slate Creek enters the floodplain.

Hardt Creek Valley

Hardt Creek valley (Figure 4) begins high on the slopes of the Mazatzals at about 1,700 m (5,577 feet) AMSL in elevation. Hardt Creek, however, only drains these slopes for a short distance (3–4 km) before it enters into a major finger of the Upper Tonto Basin floodplain that projects northwestwards from Tonto Creek. This finger forms a large valley 10 km in length and almost 2 km in width, bounded on the southwest by the Mazatzals, on the southeast by the large schist outcrop, and on the north and northeast by a broad, flat ridge that rises 60 m above the floodplain.

Because of the small area of mountain slope drained by Hardt Creek and the greater distance it flows through the floodplain, Hardt Creek is a large intermittent stream that dries out shortly after entering the floodplain. It is deeply entrenched in a large wash at its lower end near Jakes Corner and flows through a deep and twisted gorge in its final descent to Tonto Creek directly above where the schist outcrop divides the basin into its two major geographic divisions. Soils on the slopes of the Mazatzals at the upper end of the valley tend to be heavy and covered with juniper woodlands or grassland vegetation. Seeps and springs are common in this area. At the foot of the slopes, however, soils are much finer with a caliche and limestone substrate covered by a dense and widespread chaparral vegetation community. Here at an elevation of about 1,000 m (3,300 feet) AMSL an extensive early Classic period settlement cluster of small hamlets, farmsteads, and numerous field houses was found (Bilsbarrow and Woodall 1997; Ciolek-Torrello, ed. 1987; Elson and Craig 1992a). Other sites, including two investigated as part of the CCP, are located at elevations of about 850 m (2,789 feet) AMSL near the bottom of the valley where it enters the gorge.

Mazatzal Piedmont Project

Several data recovery projects have been completed in the Hardt Creek Valley. These included the Mazatzal Piedmont project carried out by the Museum of Northern Arizona in the early 1980s. This project involved data recovery at 24 archaeological sites and surface investigations at an additional 39 sites along a 12-km-long corridor along SR 87 from Mount Ord to its intersection with SR 188 (Table 2; see Figure 3) (Ciolek-Torrello, ed. 1987). The corridor crossed several small upland valleys, including Corral, Cottonwood, Gold, and Hardt Creek valleys where Archaic, Early Classic, Protohistoric, and late historical-period sites were encountered. The 17 prehistoric sites investigated in the Hardt Valley segment of the project included five farmsteads, consisting of two to five low cobble-masonry-foundation rooms enclosed by compound walls.

The most notable of these was the Mazatzal House (see Figure 1), a small compound containing five rooms arranged into two household groups (Dosh and Ciolek-Torrello 1987). Four of the rooms are rectangular in shape; three are three-walled structures and the fourth has four walls. The fifth room is an oval structure. Two burial areas were found: one in the midden area outside the eastern wall of the compound, and a single burial chamber with several individuals in the southeast corner of the compound. The domestic areas and the burial area east of the compound date to the Miami phase, whereas associated Gila Polychrome vessels suggest that the last use of the burial chamber dates to the Roosevelt phase and probably postdates the occupation of the site. A large roasting midden in the southwest part of the compound represents a Protohistoric Apache reoccupation of the site. Also present in this part of the valley is a small hamlet consisting of 10 masonry rooms arranged into a cluster of 5 adjoining rectangular rooms and 5 isolated structures. The presence of Tonto Polychrome and Pinedale Polychrome sherds at this site suggests that it dates to the late Roosevelt or early Gila phase (Olson 1971:54).

The remaining 11 prehistoric sites are field houses, primarily low masonry-walled single-room structures representing an ephemeral occupation, although some, termed homesteads, contained evidence of more intensive

Figure 4. View of SR 188 and Hardt Creek near Ushklish Ruin.

occupation with two rooms or partially enclosed extramural areas. Check dams and other rock features found at some sites suggested the use of runoff control agricultural technology. Analyses of paleobotanical samples from the farmsteads revealed a typical mixed-subsistence strategy focusing on both agricultural and wild plants (Halbirt and Gasser 1987:316). By contrast, the field houses appear to have been specialized wild-plant-food-gathering locales. Although stands of wild agave (*Agave chrysantha*) occur at the upper end of the valley, no tabular tools or agave remains were identified in any of the paleobotanical collections. (*Author's note:* The analyzes were conducted in 1983, before agave remains were widely recognized.)

Mazatzal Rest Area Project

Three field houses were investigated by ARS as part of the Mazatzal Rest Area project (Bilsbarrow and Woodall 1997); these are located along SR 188, just east of its junction with SR 87 (see Figure 1; Table 2). The Broken Hardt site is a multicomponent site containing evidence of ephemeral Middle and Late Archaic period occupation, and two Classic period field houses and associated extramural features in two loci. The eastern locus contains a single low-walled cobble-masonry room, a second possible room, and 10 extramural features; the western locus contains a possible field house, *horno*, and two other extramural features. Decorated ceramics, radiocarbon dates, and archaeomagnetic dates suggest that these features date from the Miami to the Gila phase. The Partition House contains a cobble-masonry structure, a small pit structure, and 11 extramural features. Two radiocarbon dates suggest these features were used during the Gila phase. The Slope House represents the remains of a single cobble-adobe-foundation structure and a possible rock alignment. A radiocarbon and an archaeomagnetic date suggest occupation of this site in the Roosevelt or Gila phases.

Unfortunately, the chronometric data from all three sites are contradictory. A very small collection of decorated sherds, primarily from surface contexts, suggests that these sites were occupied in the pre-Classic and early Classic periods, whereas red ware seriation indicates a Miami phase occupation. By contrast, radiocarbon dates suggest a Gila phase occupation. The archaeomagnetic dates are broad and overlap both the radiocarbon and ceramic age ranges (Bilsbarrow 1997a:312–314). Although Bilsbarrow rejects the ceramic ages as too early, most of the radiocarbon dates on which he bases his chronological classification were obtained from charcoal of long-lived wood species, mostly recovered from hearth- and *horno*-fill contexts, which have proven to be unreliable in other archaeological studies (Elson 1992a; Schiffer 1982). Paleobotanical analyses suggest that these field houses were also used primarily for the exploitation of agave, yucca, sotol or beargrass, and other roots and shoots, as well as for gathering spring greens (Bohrer 1996), although maize pollen was recovered in limited quantities (Gish 1997). Significantly, Bohrer (1996:296) observed an absence of cool season plants from the paleobotanical records of all the Mazatzal Piedmont and Mazatzal Rest Area sites, suggesting that they were not occupied year round. Bohrer (1996:298) also concluded from these records that dryland farming was the predominant agricultural practice in this part of the Hardt Creek valley.

Table 2. Prehistoric Sites in the Hardt, Gold, and Cottonwood Creek Localities

ASM No.	TNF No.	MNA No.	Site Name	Type	Age of Primary Component	Project	Reference
O:15:31	582	—	Ushklish Ruin	hamlet	Colonial, early Classic	Highway Salvage	Haas 1971
O:15:32	534	—	Hardt Creek	food processing	Middle Archaic	Highway Salvage	Huckell 1973
O:15:41	583	—		food processing	Sedentary	CCP	Volume 1
O:15:44	515	16486	Mazatzal House	farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:45	517	16487	La Piedra House	farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:48	505	17227		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:49	504	16917	Swimming Hole	farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:51	527	17228		field house	early Classic	Rye Creek	Elson and Craig 1992b
O:15:58	518	16918	Gabonay	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:70	526	17229		field house	early Classic	Rye Creek	Elson and Craig 1992c
O:15:71	525	17230		field house	early Classic	Rye Creek	Elson and Craig 1992c
O:15:73	521	17232		agricultural features	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:74	520	17233		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:75	519	16919	Dump	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:76	522	16920	Junction	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:78	516	16922	Zeilstra	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:79	514	17234		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:80	513	17225		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:81	511	16923	Killer Bee	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:83	509	16925	Exhaustion	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:84	508	16926	Gold Creek	farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:86	—	16928	Black Hole	food processing	early Historical Apache	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:87	506	17226		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:88	494	16929	Limestone House	farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
O:15:89	1103	—		field house	early Classic	Rye Creek	Elson and Craig 1992c
O:15:96	1116	—		field house	early Classic	Rye Creek	Elson and Craig 1992c
O:15:103	2061	—		artifact scatter	Formative	CCP	Volume 1
O:15:110	1644	—	Broken Hardt	field house	Classic	Mazatzal Rest Area	Bilsbarrow and Woodall 1997
O:15:111	1645	—	Partition House	field house	Classic	Mazatzal Rest Area	Bilsbarrow and Woodall 1997
O:15:112	1647	—	Slope House	field house	Classic	Mazatzal Rest Area	Bilsbarrow and Woodall 1997
U:3:7	499	16945		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987

ASM No.	TNF No.	MNA No.	Site Name	Type	Age of Primary Component	Project	Reference
U:3:8	500	16946		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:9	—	16930	Pony Express	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:10	—	16947		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:28	—	—	Slate Creek Ruin	hamlet/farmstead	Colonial/early Classic	Highway Salvage	Huckell 1977
U:3:32	512	16924		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:39	503	16948		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:40	501	16949		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:41	495	16950		hamlet	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:42	502	16951		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:43	493	16932	Whitlow	lithic scatter	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:45	—	16952		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:46	—	16953		lithic scatter	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:47	—	16954		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:48	—	16955		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:49	—	16933	Flesher	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:50	—	16956		lithic scatter	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:51	—	16957		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:52	—	16958		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:53	—	16959		lithic scatter	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:54	—	16934	Trella	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:55	—	16960		lithic scatter	Middle Archaic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:56	—	16935	Corral Creek	lithic scatter	Middle Archaic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:57	—	16936	Marino	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:58	—	16937	Powerline	farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:60	—	16962		lithic scatter	Middle Archaic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:61	—	16938	Ashdale CCC Camp	construction camp	late Historic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:66	—	16939	Tucker	lithic scatter	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
U:3:222	1347	—		artifact scatter	early Classic?	TCAP	Clark and Vint, eds. 2000b
U:3:224	2064	—	Heron Hatch	farmstead	Colonial	TCAP	Clark and Vint, eds. 2000b
U:3:246	1381	—	Forest Highway 9	road	late Historic	CCP	Volume 1
U:3:285	1350	—		farmstead	early Classic	TCAP	Clark and Vint, eds. 2000b

continued on next page

ASM No.	TNF No.	MNA No.	Site Name	Type	Age of Primary Component	Project	Reference
U:3:286	1352	—	Boatyard	campsite/farmstead	Late Archaic/Early Formative/ Colonial	TCAP	Clark and Vint, eds. 2000b
U:3:287	1353	—		food processing	early Classic	TCAP	Clark and Vint, eds. 2000b
U:3:288	1354	—		hamlet	early Classic	TCAP	Clark and Vint, eds. 2000b
U:3:353	—	—		campsite/farmstead	Late Archaic/Early Formative	TCAP	Clark and Vint, eds. 2000b
U:3:404	2011	—		field house	early Classic	CCP	Volume 1
U:3:405	2012	—	Vegas Ruin	farmstead/hamlet	Sedentary/early Classic	CCP	Volume 1
U:3:406	2013	—		artifact scatter	Formative	CCP	Volume 1
U:3:407	2014	—	Rock Jaw	farmstead	Sedentary	CCP	Volume 1
U:3:408	2015	—		farmsteads/hamlet	Sedentary/early Classic	CCP	Volume 1
U:3:409	2016	—		artifact scatter	Sedentary/early Classic	CCP	Volume 1
U:3:410	2017	—	Crane Site	farmstead/hamlet	Sedentary/early Classic	CCP	Volume 1
—	17	—	VIV Ruin	village	Classic		Mills and Mills 1975
—	550	—	Kayler Butte	defensive	Classic		TNF files
—	—	8082		hamlet	early Classic		Olson 1971
—	—	16927	Powerline Annex	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16931		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16961		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16963		lithic scatter/ checkdam	Middle Archaic/early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16964		lithic scatter	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16965		lithic scatter/checkdam	Middle Archaic/early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16966		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16967		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	523	16968	Aggregate Ruin	hamlet	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	16969		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	17231		farmstead	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	17237		field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	17238		field house?	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	—	17239	Sunflower CCC Camp	field house	early Classic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987
—	510	17344	Hood	construction camp	late Historic	Mazatzal Piedmont	Ciolek-Torrello, ed. 1987

Rye Creek Mitigation Project

Finally, four additional field houses, located along SR 87 north of its junction with SR 188 and at the northern edge of the Hardt Creek valley, were excavated as part of the Rye Creek Mitigation Project (RCMP) conducted by Desert Archaeology, Inc. (DAI), along SR 87 from its junction with SR 188 to the town of Rye (see Figure 2; Table 2) (Elson and Craig 1992a). AZ O:15:96/116 is a small, single-room, cobble-adobe-foundation structure located adjacent to Hardt Creek (Elson 1992b). AZ O:15:71/525 consists of a much larger three-walled masonry structure, a smaller ephemeral semicircular structure, and a small slab-lined cist. AZ O:15:70/526 consists of two isolated masonry features: a disturbed single-room masonry structure and a smaller rock-lined pit. The Overlook Site (AZ O:15:89/1103) actually is situated above the Deer Creek drainage north of Hardt Creek valley. This is a more substantial site with a large, well-built, single-room masonry structure, a linear cobble alignment or terrace, and a relatively large and diverse artifact assemblage. Elson (1992b) has interpreted all four sites as seasonally occupied field houses based on the informal construction of the houses, absence of interior features, and small and limited artifact collections. Despite the evidence for more substantial occupation at the Overlook site, Elson (1992b:89) concluded that this was also seasonally occupied, as no hearths or storage features were found. Wild-plant remains were recovered from pollen and flotation samples; maize pollen was only found at AZ O:15:71/525. He also classified all the sites as Classic period. The absence of datable materials and decorated ceramics precluded finer temporal distinctions.

Arizona State Museum Investigations

From its upper end, Hardt Creek valley grades imperceptibly into a disturbed desert grassland and, eventually, Sonoran Desertscrub at the bottom of the valley near Jakes Corner. A cluster of Middle Archaic period settlements is present along SR 188 in the central part of the valley, and a Colonial to Classic period settlement cluster is near the lower end of the valley. The Hardt Creek site was investigated by the Arizona State Museum (ASM) in 1971. Located along SR 188 on the terraces above the creek about 3 km east of its junction with SR 87, this site is a specialized processing station, involving woodworking, hide processing, and tool manufacture (Huckell 1973). The presence of Gypsum Cave– and Pinto Basin–style projectile points at the site suggest that the site represents the Chiricahua Stage of the Cochise Culture or Amargosa II, a period of time roughly spanning 3000–7000 B.P. (Huckell 1973:192). Similar sites have been found in the Corral Creek valley in the eastern Mazatzal Piedmont and have been attributed to the Corral Creek phase, a local manifestation of this broader Middle Archaic period cultural phenomenon (Ciolek-Torrello 1987b). Huckell (1973:195) noted the presence of a larger preceramic site about 400 m south of the Hardt Creek site. Huckell has suggested that this site, which is situated on a terrace just east of Hardt Creek, was probably the habitation area with which the Hardt Creek site was associated. Similar projectile points indicated that the two sites were contemporary.

Further east, near the lower end of the valley, is the Ushklish Ruin, the largest of a cluster of Formative period settlements about 4.5 km east of the junction of SR 188 and SR 87. Twelve pit houses, 30 extramural hearths, 7 cremations, and a single inhumation dating primarily to the Colonial period were uncovered in excavations carried out by Arizona State Museum (ASM) in 1971 in a portion of this large settlement (Haas 1971, n.d.). The Ushklish Ruin is situated at an elevation of about 870 m (2,854 feet) AMSL and about 150 m north of Hardt Creek. Haas (1971:3) observed a number of springs and seeps in the hills south of the creek. Haas also noted the presence of sites on each of the ridges on either side of the Ushklish Ruin as well as another large site 150 m to the north and several others across the creek to the south. The Ushklish Ruin (see Figure 1) itself was bisected by the existing SR 188, removing a 13-m-wide portion of the site and truncating several of the houses that were excavated by Haas (Figure 5).

Architecture at Ushklish was highly variable. The most common style consisted of small to moderate-sized, pit houses with squared corners and long, narrow entryways, most of which faced eastward (Haas 1971:6). Houses 11 and 12 were built within the same house pit. The presence of two houses in this pit is signaled by the presence of two entryways, one facing northeastward and the other facing in the opposite direction, suggesting that the original house was remodeled and a new entryway was constructed. Characteristically, these houses had two large, central posts and several smaller auxiliary interior posts that supported the roof. Six houses fit this style, whereas two other houses (Houses 8 and 13) were similar but had more rounded corners. House 8 also appears to have been remodeled, with one entry facing southwest and another southeast. Although Haas has attributed this house style to the Hohokam cultural tradition, these houses show many affinities with early Mogollon houses. Mogollon houses are true pit houses that were carved into the soil and utilized the pit walls as the base of the house walls (see Wheat 1955:196–197). The upper portion of the walls was constructed on the surface at the edge of the house pit. According to Wheat, Early Mogollon houses were also squarish with long lateral entry ramps. The depths of the house pits, which Haas (1971:6) described as ranging from 0.35 to 1.00 m below the surface, are also well within the range reported for Mogollon houses (Wheat 1955:42).

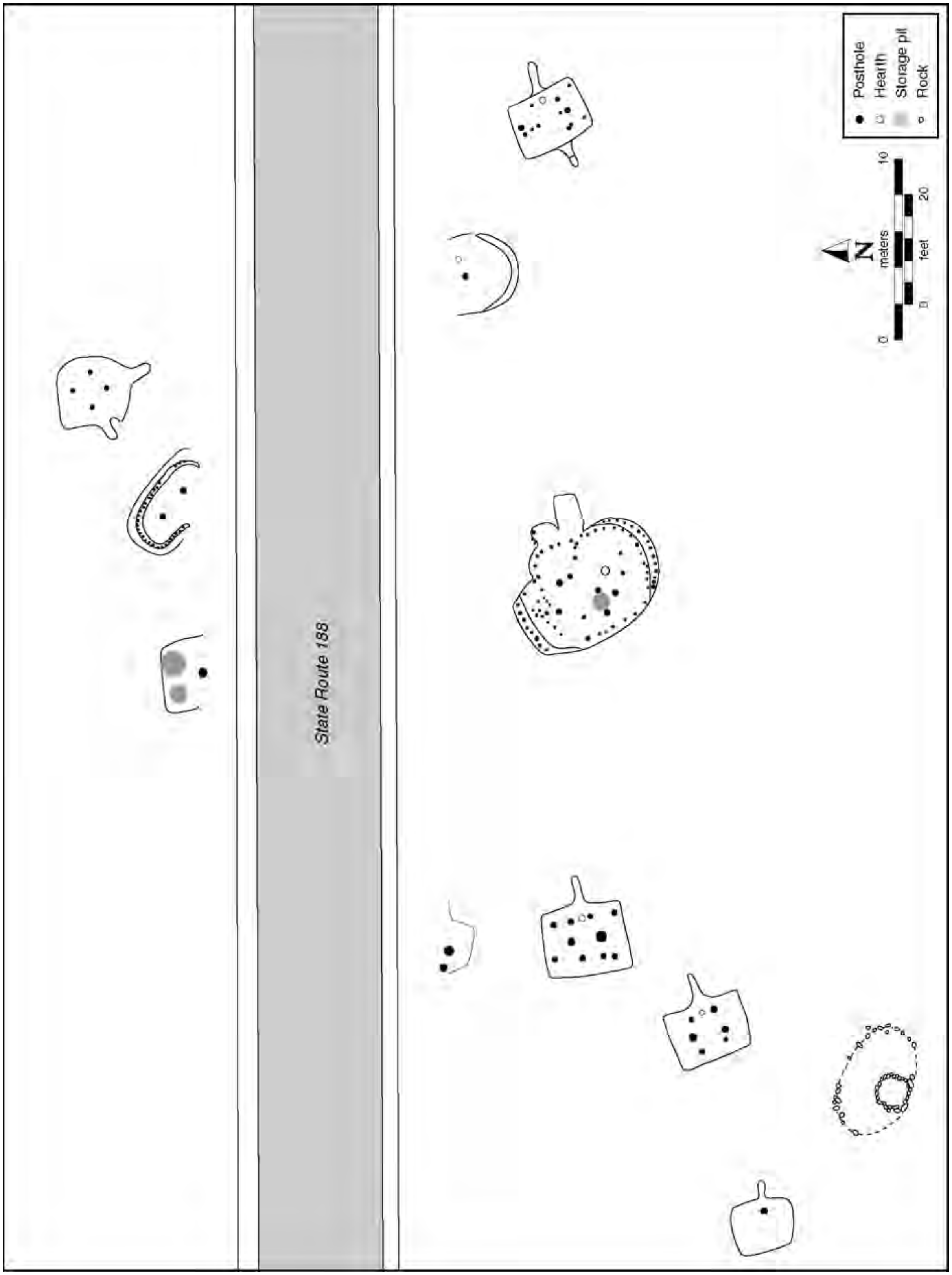

Figure 5. Map of Ushklish Ruin (after Haas 1971).

By contrast, Hohokam-style houses are often subrectangular to oval in shape and are constructed within the confines of a shallow house pit. The pole-and-brush walls of these houses are built along the inside edges of the pit at its base. These houses-in-a-pit, as they are termed, are denoted by the presence of numerous small peripheral wall posts often placed with a shallow groove or wall trench that runs around the inside edge of the pit (Wheat 1955). Entryways tend to be shorter and stepped. House 10 is a moderate-sized, subrectangular house that represents the typical Hohokam house-in-a-pit style of construction. Houses 6 and 9 are two large houses (about 40 m^2 in area) that are of a similar construction but lack the floor groove. These two houses were built within the same pit but with different floors (Haas 1971:6). Each house has a distinct entryway, but both generally face in an eastward direction. In his review of the Ushklish Ruin, Gregory (1995) has argued that the presence of these large houses and the eastward orientation of most of the houses at the site also reflects a Mogollon-style site structure and Mogollon "big-house" organizational pattern, rather than the courtyard arrangement commonly found in contemporaneous Hohokam settlements.

House 3 is the most distinctive; it is a moderate-sized, circular structure with a single central post and a bench along one side. This house was partially destroyed by the existing highway and the location of the entryway could not be found. Haas does not describe the method of construction of this house, but from what can be gathered from his description of the house and what is depicted on the site map (Haas 1971:Figure 1), Feature 3 appears to be a true pit house.

Haas identified two distinct styles of cremation burial among the seven cremations. Four were simple secondary cremations placed in pits filled with ash, bone, a few simple tools, and some trash. None contained the typical ritual paraphernalia—palettes and censers—or shell ornaments often found in Hohokam secondary pit cremations (although Haas [1971:15] did report the presence of *Glycymeris* shell bracelet fragments at the site). Such associations, along with secondary cremation interments within Hohokam vessels, were common in late Colonial and early Sedentary period settlements in the Sycamore Creek valley on the western slopes of the Mazatzals (see Green 1990; Klucas and Woodson 1999). Three cremations represented a second, even more distinct style of cremation burial. Here the remains were placed on a platform in a long narrow pit, as indicated by the presence of postholes in the pit corners. Burned posts were found in one of these pits, but Haas (1971:11) concluded that these were not primary cremations, as large quantities of bone were not found. He conjectured that the individuals were cremated elsewhere, and their remains were placed on the platform, which was then burned resulting in a "second cremation." An unspecified Anasazi bowl and a Santa Cruz Red-on-buff jar were found in one pit. Neither contained human remains. Thirteen similar pit cremations were identified in the nearby Deer Creek Village (Swartz 1992a:141–154). Like the Ushklish Ruin cremation, these were partially lined with burnt clay or daub and some had evidence for corner posts; but all contained few cremated remains. Swartz (1992a:153) suggested that the bone was either removed from these pits after the cremation or a small amount was reinterred when the pit was filled in. The presence of only six secondary cremations at the site, also suggested to Swartz (1992a:153–154) that these cremation pits were the final burial place of a portion of the cremated remains.

Similar examples of rectangular primary cremation pits with corner posts that may have supported a platform have been documented throughout the southern Southwest at the JR Site in the Wheatfields area (Berg, Bushèe, et al. 2003), at the Picacho Pass site in southern Arizona (Greenwald and Ciolek-Torrello 1987:162), at the Mescal Wash site in southeastern Arizona (Garraty et al. 2010), in the Mimbres Valley (Creel 1989), and in the White Mountains (Halbirt and Dosh 1986), where they appear to represent an uncommon variant of cremation ritual during the Colonial period or its local equivalent. The White Mountains settlements, where these primary cremations were found, also contained mixtures of Hohokam and Mogollon architectural styles and ceramics. Thus, whether these types of cremations represent Hohokam influence or not remains unclear. Elson (1992a:150) points out that these types of features are also present but uncommon in Hohokam sites, where secondary pit or urn cremation was the standard burial practice. Where found, however, they contained small to large amounts of burned human bone suggesting that they were primary cremations (Haury 1976:166; Mitchell et al. 1994; Motsinger 1993). These Hohokam primary cremations, however, lack evidence of a platform (corner posts) and are more variable in age. At Snaketown, two primary cremations dated to the Pioneer period, one to the Colonial, and one to the Sedentary period (Haury 1976:166). The three primary cremations at Los Hornos dated to the Snaketown and Gila Butte phases (Motsinger 1993:223–225), whereas a much larger number of primary cremations at Pueblo Grande dated to the Sedentary period and the remainder dated to the Classic period (Mitchell et al. 1994:143–147). Taken together, this evidence suggests that while primary pit cremations may have first been used by the Hohokam, this form of mortuary ritual was most common (albeit still rare) in the Phoenix Basin during the Sedentary and Classic periods. The four post-platform type of primary cremation appears to have been restricted to Tonto Basin and other areas of the Southwest where Hohokam and Mogollon populations interacted during the Colonial period.

Haas (1971:12) did not detail the ceramic collection from the Ushklish Ruin in his preliminary report, but stated that Santa Cruz Red-on-buff was the predominant decorated type. He also noted the occasional occurrence of contemporaneous, but unspecified, black-on-white sherds as well. The remainder of the collection consisted

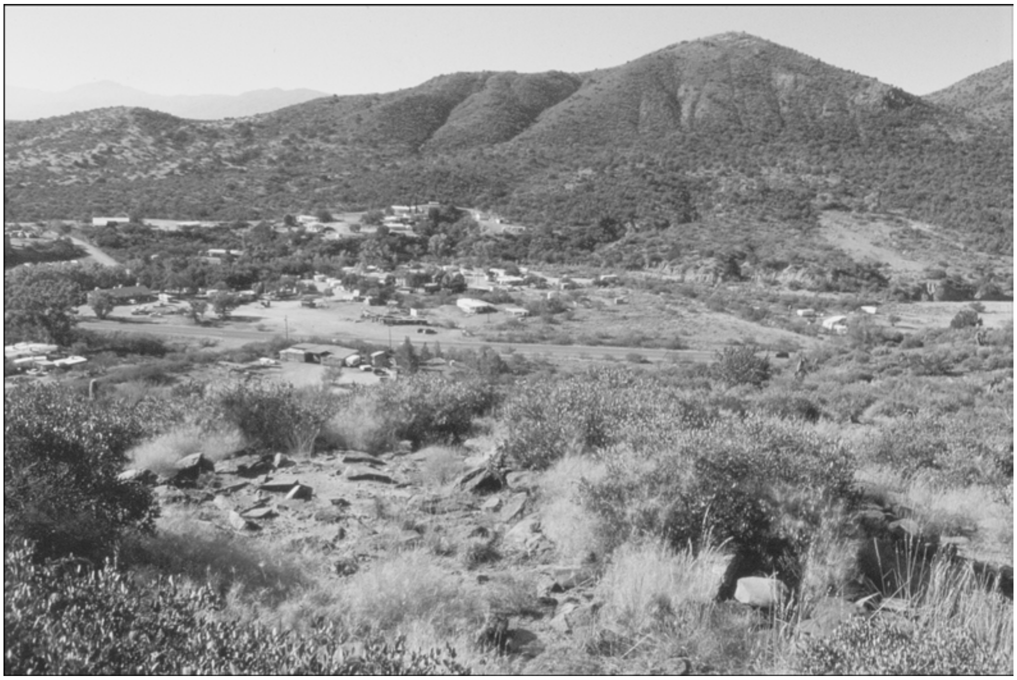

Figure 6. View south of lower Hardt Creek from Jakes Corner Ruin.

of plain wares and red wares. The latter types were also not specified and it is unclear whether these are Hohokam, Mogollon, or later Salado types.

Variable house forms and a mixed ceramic assemblage at the Ushklish Ruin suggest that the site represents an indigenous occupation predominantly influenced by the Hohokam, but with some Mogollon or Anasazi influence. The site dates primarily to the Santa Cruz phase (Haas 1971:12, 15), although a smaller early Classic period occupation is also indicated by what appear to be several masonry field houses (Hoffman 1991). Although Haas does not describe it in his preliminary report, his site map (Haas 1971:Figure 1) depicts a subrectangular cobble-adobe-foundation surface structure at the southwest corner of his excavation area. Despite the limited analysis and reporting of Ushklish Ruin excavations, it remains an important site, one that continues to play a prominent role in discussions of ethnic affiliations and social organization of the pre-Classic period inhabitants of the Upper Tonto Basin (Elson 1992a; Gregory 1995; Whittlesey and Reid 1982).

A large unrecorded compound with about 20 rooms is located on a small hilltop about 500 m east of the Ushklish Ruin. The site's location provides a commanding view of both the Hardt Creek valley to the west and the Deer Creek valley to the north (Figure 6). The architecture and presence of red ware suggests an early Classic period age. This is certainly the largest known Classic period settlement in the Hardt Creek locality.

SR 188–Cottonwood Creek Project

Two small sites were investigated in the Hardt Creek locality as part of the CCP. Site 41/583 is located along SR 188 about 100 m southeast of the Ushklish Ruin and at the foot of the hilltop site. Initially believed to be the site of a small single-room feature, our data recovery efforts revealed that this site represents the remains of a large *horno* dating to the Sedentary period. A variety of wild-plant seeds and possible cultivars were recovered from this feature, including agave, little barley, cheno-ams, manzanita, and a variety of weedy species. Its proximity to the Ushklish Ruin suggests that this *horno* is a food-processing area associated with this larger settlement. Site 41/583, however, postdates the primary occupation documented at the Ushklish Ruin, although a Sedentary period component cannot be ruled out in the unexcavated portion of the larger site.

Two hundred meters further southeast and at the edge of the modern settlement of Jakes Corner is Site 103/2061, which was also investigated as part of the CCP. This is a very low-density artifact scatter. The presence of an apparently reworked Pinto-style projectile point suggested to the original surveyors that the site contained a Middle Archaic period component similar to those found elsewhere in the valley (Hoffman 1991:35–37). Unfortunately, the point could not be relocated during data recovery and no other evidence of an Archaic period occupation was found.

Gold Creek Area

Like Hardt Creek Valley, Gold Creek begins high on the eastern slopes of the Mazatzal Mountains at an elevation of approximately 1,700 m (5,577 feet) AMSL in elevation. It is a much longer drainage than Hardt Creek with a length of over 15 km. For the most part, however, it flows through narrow ravines and canyons, and forms only a small valley in the Mazatzal Piedmont. For a distance of about 6 km, it flows through an area of steep ridges and ravines on the eastern slopes of the Mazatzal Moutains. Beginning at 1,120 m (3,609 feet) AMSL in elevation, however, it enters a small, gently sloping valley only 3 km in length and 0.7 km at its widest point. Here the Gold Creek is turned northeast as it meets the schist outcrop that forms the southeast flank of this high elevation piedmont valley. The creek is not entrenched here, but flows along the surface supporting a rich riparian community along the entire length of the valley. Elevation drops to 1,030 m (3,380 feet) AMSL at the mouth of the valley where it enters, a narrow, rocky, and steep-sided canyon and reverts to its eastern course. Gold Creek flows through this canyon for a distance of 6 km, gradually shifting in a southeast direction before joining Tonto Creek at the midpoint of the bottleneck formed by the schist outcrop that divides the Upper and Lower Tonto Basin. No springs are noted along the entire 15 km length of Gold Creek.

The piedmont valley is made up of an isolated finger of pediment-terrace wedged between the east slopes of the Mazatzals and the schist outcrop. Soils tend to be shallow, and heavy argillic clays are common. Pediment-terrace gravels are the primary exposed substrate, with granite and schist bedrock outcrops also exposed in some areas. Vegetation in the piedmont valley is a disturbed desert grassland with intrusive mesquite and juniper. The ridge slopes surrounding the valley are characterized by juniper woodland and grassland. Chaparral vegetation is also present on isolated steep slopes and along the margin of the riparian vegetation (Ciolek-Torrello, ed. 1987:27).

Mazatzal Piedmont Project

The piedmont valley contains a concentration of small Classic period hamlets, farmsteads, and field houses, many of which were investigated as part of the Mazatzal Piedmont project (Ciolek-Torrello, ed. 1987). Two of the more intensively occupied field houses were excavated (Ciolek-Torrello, ed. 1987). The Swimming Hole House (NA16,917) was a large structure, about 14.4 m^2 in interior area, and similar in construction to Site 404/2011. Unlike the latter, however, the Swimming Hole House contained a small interior hearth and evidence of the use of a variety of wild plants as well as maize, which was found in pollen and flotation samples. Gold Creek House (NA16,926) consisted of three small cobble-masonry structures, all with interior areas under 5 m^2, and several rock alignments. Room 1, the largest and most substantial structure was constructed with three masonry walls that stood well over a meter in height, and were probably constructed entirely of masonry. The fourth wall consisted of a low cobble foundation with a probable *jacal* superstructure. Adjoining this structure was a smaller walled space. The third structure was a small informal structure outlined by an alignment of cobbles. Unlike the Swimming Hole House, however, no interior features were found at the Gold Creek House. Economic plant taxa recovered from this site included large numbers of manzanita nutlets and juniper seeds, as well as high concentrations of cheno-ams and a single corn cupule. Both sites were also characterized by larger and more diverse artifact assemblages than typical field houses such as Site 404/2011.

The Aggregate Ruin (NA16,968) is the largest Classic period site found in the piedmont valleys investigated by the Mazatzal Piedmont Project. This site is situated high on a bench located on the slope of a large hill that provides an unobstructed view of Gold and Cottonwood Creek valleys. The top of the hill at about 1,190 m in height overlooks the lowland Cottonwood Creek area (see below) and provides a commanding view of Tonto Basin from the Mogollon Rim to the Pinal Mountains. Thus, the Aggregate Ruin may have commanded the approaches into these upland valleys. The site consists of an aggregation of five contiguous courtyard units arranged in a compact masonry-walled compound. The central courtyard unit is of massive masonry construction, whereas the other courtyards are constructed with the typical low masonry-foundation walls. The site was not excavated, but the ceramics observed consist primarily of plain wares with about 10 percent red ware and 4 percent obliterated corrugated. The presence of small numbers of Snowflake, Reserve, Tularosa black-on-white, and a single Pinto Black-on-red sherd suggest a Miami or early Roosevelt phase age for the site.

In addition to these prehistoric remains, a large burnt midden was excavated adjacent to Gold Creek. Although virtually no material culture was found in the excavation, burned wood from the midden returned an early nineteenth century date, suggesting that the feature was the remains of an Apache roasting pit (Ciolek-Torrello 1987b:355).

SR 188–Cottonwood Creek Project

Site 404/2011, which was part of the CCP, is the only known site along the lower part of Gold Creek, Site 404/2011 is a field house located along SR 188 about 2 km south of Jakes Corner on a high ridge overlooking the deeply entrenched Gold Creek less than 2 km from its confluence with Tonto Creek. This site contained a small single-room, cobble-adobe-foundation structure with interior dimensions of 2.75 by 3 m (Figure 7). Adjacent to the south side of the room

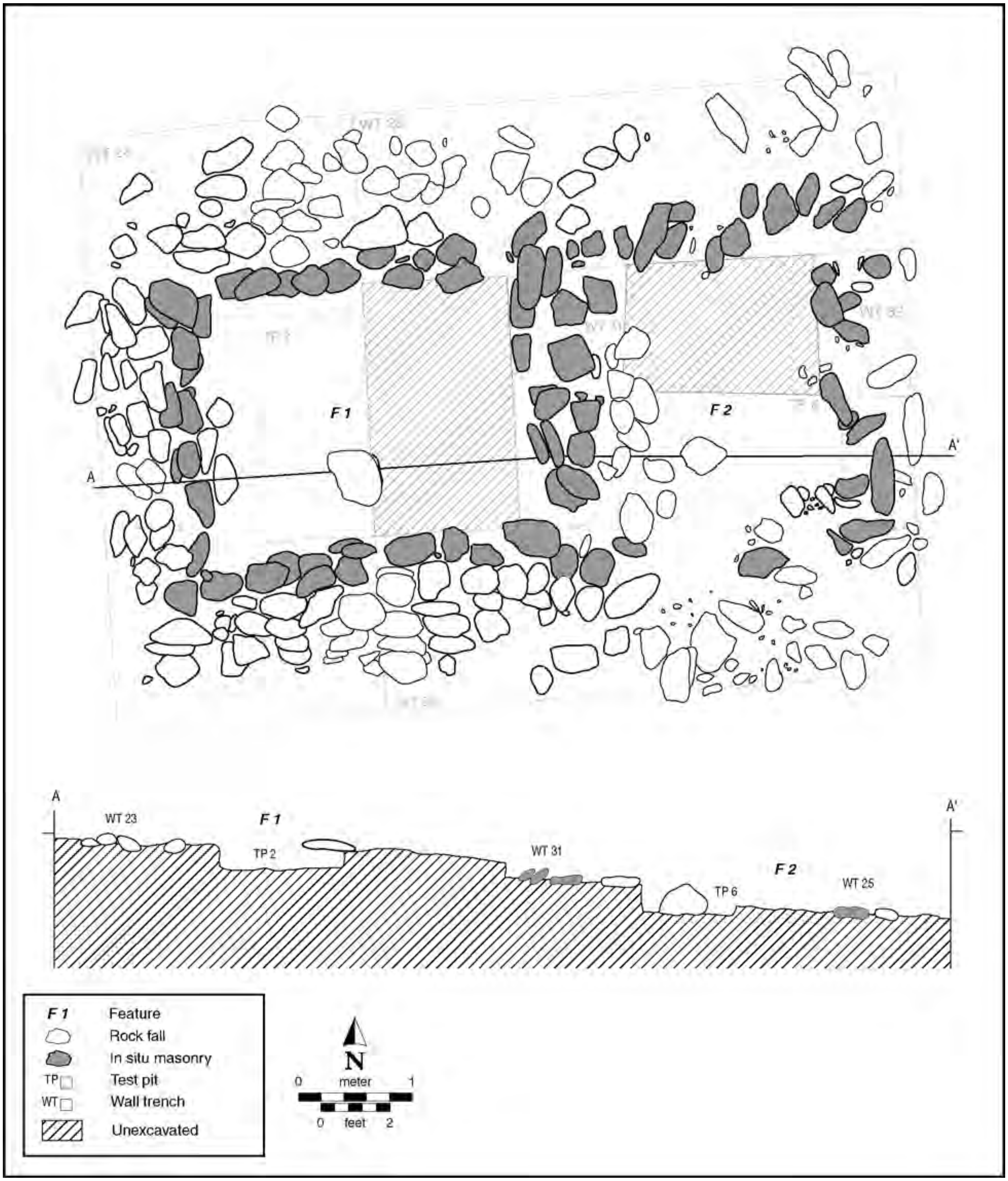

Figure 7. Map of field house at Site 404/2011.

Figure 8. View south along SR 188 toward Slate Creek.

was a walled exterior space measuring approximately 2.8 by 2.3 m. Artifact density was extremely low and no floor-surface or interior features were found in the structure. The ceramic collection included a small number of corrugated and obliterated corrugated sherds, suggesting a Classic period age for the site. No chronometric samples were obtained from the excavations. No identifiable plant remains were recovered from the single flotation sample.

Cottonwood Creek Locality

We define the Cottonwood Creek locality as a 7-km-long by 4.5-km-wide area at the northern edge of the Lower Tonto Basin. At its southern end, it is defined by a narrowing of the Tonto Creek floodplain caused by a westward projection of the Sierra Ancha in the form of Kayler Butte and described by the point where Slate Creek enters the floodplain. The northern end of the locality is defined by the mouth of the gorge that Tonto Creek has cut through the schist formation as it emerges from the Upper Tonto Basin.

Today, Tonto Creek flows semipermanently through this valley. Its primary period of peak discharge occurs during the winter rainy season and during the period of snowmelt in early spring. A secondary peak discharge occurs during the summer rainy season. Streamflow often stops in late spring and early summer, and again in fall after the summer rains cease (see Welch [1994] for a more detailed discussion of Tonto Creek hydrology). Huckell and Vint (2000:163) note the presence of several springs along a 0.5-km reach of Tonto Creek above the point where Slate Creek enters the floodplain. They speculate that these springs may have attracted the extensive Archaic period occupation in this area (see below).

Slate Creek, at the southern edge of the Cottonwood Creek locality, is an ephemeral stream that drains the eastern slopes of the Mazatzals (Figure 8). Originating at an elevation of about 1,220 m (4,003 feet) AMSL, it flows for a distance of about 16 km before joining Tonto Creek. For most of this distance it flows through a narrow, deep canyon cut into steep, heavily dissected pediments and pediment terraces. As it approaches its confluence with Tonto Creek, however, it cuts through a series of alluvial terraces formed by Slate and Tonto Creeks during a period of comparative stability during the Quaternary period (Huckell and Vint 2000:162).

Cottonwood Creek is a much smaller drainage than either Hardt or Gold Creek. It begins at an elevation of about 1,160 m (3,806 feet) AMSL on the southern flank of the divide between the upland Gold Creek and Corral Creek valleys. Cottonwood Creek never forms an upland valley like these other drainages or Hardt Creek, and it flows between steep rocky ridges almost throughout its entire 5.5-km length. In its last half kilometer, however, it enters the Tonto Basin floodplain. No pediment terrace is present in the larger piedmont portion of the drainage. No sites are located in the uppermost part of the drainage, although several sites investigated as part of the Mazatzal Piedmont project overlook its northern boundary. Cottonwood Creek probably served as a natural corridor between Tonto Basin and the many early Classic period settlements in the small upland valleys formed by Gold and Corral Creeks.

Where Cottonwood Creek enters Tonto Basin, it dissects a T_{20} terrace. This is the youngest of a series of terraces found in the Cottonwood Creek locality (cf. Royse et al. 1971:Figures 6 and 7). These terraces were laid within basinfill deposits formed in late Pliocene times. The post-basinfill history of Tonto Basin was characterized by erosion and the formation of these terraces. Royse et al. (1971:13) have suggested that climatic changes, which have occurred from the latest Pliocene times through the Quaternary period, have been largely responsible for these erosional episodes. A narrow remnant of the T_{20} terrace is preserved between the dissected slopes of the Mazatzal piedmont and the western bank of Tonto Creek (Royse et al. 1971:Figure 6). In this area, Tonto Creek has been flowing against its western bank for thousands of years, eroding away all evidence of older terraces. An even smaller segment is preserved along the western bank of Tonto Creek above Slate Creek. The entire sequence of terraces, however, is preserved on the eastern bank of Tonto Creek at the foot of the Sierra Ancha.

The section of the T_{20} terrace bisected by Cottonwood Creek runs in a generally northeast–southwest direction for about 1 km and is about 0.25 km at its widest point. Here, at an elevation of about 790 m (2,592 feet) AMSL on this dissected terrace overlooking the Tonto Creek floodplain is a cluster of six prehistoric sites investigated as part of the CCP. Consisting of small habitation sites, limited-use sites, and combinations of these site types, these sites date to the late Sedentary and early Classic periods. Three of these sites are Classic period habitation sites represented by linear cobble alignments and dense artifact scatters.

Vegetation in this area is part of the Arizona Upland subdivision of the Sonoran Desertscrub (Turner and Brown 1982). Gasser (1987:Figure 3) has characterized this vegetation as a deciduous woodland, mesquite *bosque* in his description of the vegetation of the Mazatzal piedmont. The lowest terraces at the southern end of the Cottonwood Creek locality are characterized by a thornscrub association composed of small mesquite trees and catclaw acacia shrubs with scattered blue palo verde trees, graythorn, and barberry. Prickly pear and cholla cactus occur in open areas. On the northeast facing slopes of the older terraces is a more open thorn scrub with mesquite and littleleaf palo verde, juniper, sotol, ocotillo, and occasional saguaros. The presence of juniper in this association suggests that the area is near the upper limit of the Sonoran Desertscrub (Huckell and Vint 2000:165). In the northern part of the locality, scrub oak, a defining plant of the Interior Chaparral community, appears. East of the project sites is a riparian community along Tonto Creek. Willow, sycamore, cottonwood, and large mesquite trees are found on the western and eastern margins of the floodplain on gravel bars and protected areas of the older floodplain.

SR 188–Cottonwood Creek Project

The Vegas Ruin (AZ:U:3:405/2012)

The Vegas Ruin contained the most extensive and diverse set of cultural remains of any of the CCP project sites (Figure 9). The site is situated on a flat alluvial terrace between two unnamed drainages about 400 m north of Cottonwood Creek. Excavations revealed several discrete temporal components. The latest of these was represented by a cobble-adobe-foundation compound (Feature 1) whose eastern end was destroyed by the existing SR 188. The preserved portion of this compound contained a single room (Feature 11) with a cobble-adobe foundation and an adjacent walled space (Feature 54) containing a cobble granary pedestal (Feature 51). Several cobble-adobe-foundation features located outside of the ROW to the west (Features 52 and 211) may also be associated with this late occupational episode. The middle component consists of four *jacal*-walled pit structures that reflect the architectural transition from Hohokam-style houses-in-pits to aboveground cobble-adobe-foundation foundation structures of the early Classic period. All four houses were large subrectangular houses; where entryways were preserved, they were large walled vestibules. One remodeled house (F 34) was typical of the Sedentary period with peripheral posts arranged around the edge of the floor within a floor groove. More unusual, however, was a small granary pedestal located in the northwest corner. Two houses (F 99 and 179) were distinguished by peripheral posts preserved in a thick wall plaster. The fourth house (F 19) was characterized by the upright cobble wall foundation typical of early Classic period surface structures (Clark 1995a; Shelley and Ciolek-Torrello 1994). A fifth pit feature (F 17) appears to represent a limited activity area. These five structures were located both within and outside the space defined by the later compound walls, as well as beneath the walls indicating that they predate its construction. Superpositioning of two of the pit structures further indicates that they were not all contemporary. These structures were arranged in a linear pattern with all their entryways facing to the east. A courtyard group was not in evidence.

In addition to the architectural features, a diverse set of extramural features were identified at the Vegas Ruin. These included two discrete midden deposits (Features 10 and 44), several borrow pits and adobe lined pits, over 30 small to medium-sized hearths and ovens, and over 50 miscellaneous pits. It is not clear with which of these two occupational episodes the many extramural features are associated. Most of these features were located about 10–15 m north of the compound and pit structures. Others were concentrated within the compound and east of the pit structures.

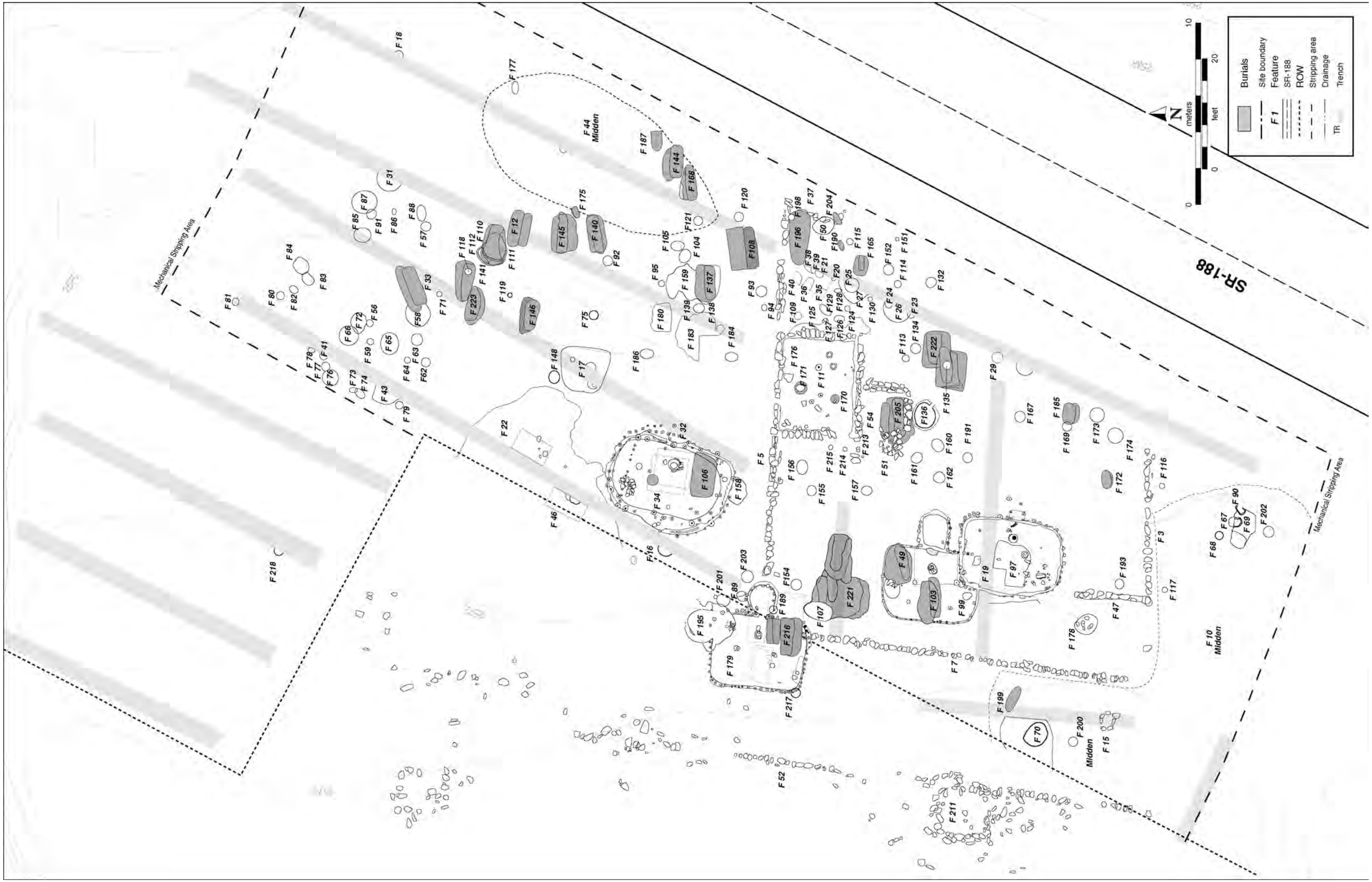

Figure 9. Map of Vegas Ruin (405/2012).

The earliest occupational episode is represented by four roasting features and associated piles of fire-cracked rock (Features 159, 162, 180, and 183); three of these features were located immediately north of the compound. These roasting features were located stratigraphically below an approximately 25–30-cm-thick calcic horizon that was devoid of cultural materials and separating the roasting area from the later habitation features. Although no material cultural remains were identified aside from the abundant quantities of fire-cracked rock and charcoal, the stratigraphic position of these features suggests the possibility that they date to the Archaic period.

A diverse collection of ceramics was recovered from nonmortuary contexts at the Vegas Ruin. This includes examples of both Cibola and Little Colorado White ware as well as Roosevelt Red wares. Represented types include Puerco, Reserve, and Snowflake among the Cibola White wares, Padre and Walnut among the Little Colorado White wares, and Pinto Black-on-red among the Roosevelt Red wares. Corrugated and obliterated corrugated sherds were also common.

A total of 38 inhumations were identified at the Vegas Ruin and of these 37 were excavated. Most of the burials were arranged in a north to south linear alignment north and east of the compound and pit structures. Several burials extended to the edge of the road, and at least one pit (Feature 187) appeared to extend under the road, but at least 2 m below the current road surface. A smaller concentration of burials was found in the northwest corner of the compound, located between two of the pit structures, and a number of burials intruded into three of the structures. Significantly, no burials intruded into the stratigraphically highest house with the upright cobble-wall foundation (Feature 11).

The age range of the individuals represented was quite broad, ranging from infants under 6 months to adults in excess of 60 years of age at the time of death. Three general types of burial pits were observed. The simplest type consisted of a straight-walled pit into which the individual was placed, generally on his or her back in an extended position; infants were generally placed on their sides. In the second type, a niche was cut into the side of the pit at its base, and the individual was placed in the niche. For the third type, the body was placed in a narrow inner chamber at the base of a broad pit. For all three types, there was evidence indicating that the pit was covered with wooden cribbing, creating a chamber within which the body was placed.

A great variety of ceramic vessels was recovered from the burials, including a number of white ware jars and bowls, and scores of Salado Red and Brown Obliterated Corrugated vessels. In addition to the vessels, the mortuary collection included shell and stone beads and pendants, projectile points, bone awls and hair pins, and the badly preserved remains of a small number of painted wooden artifacts. Also found was traces of a painted basket Most vessels were buried in the pits with the inhumations, but, in several cases (which included the baskets), they were placed above the wooden cribbing.

In sum, the Vegas Ruin appears to have been a farmstead or small hamlet inhabited from the late Sedentary to the early Classic period. The site also apparently served as a food-processing area at some time in the Archaic period. The high ratio of burials to habitation rooms in the Formative period occupation suggests that the site may have served as a mortuary locality for a much broader area.

The Crane Site (AZ U:3:410/2017)

The Crane site is situated on top of an east-west-running ridge at the edge of the old terrace overlooking the floodplain (Figure 10). Two occupational episodes were identified at this site. The latest component consisted of a cobble-adobe-foundation compound composed of at least four rooms and oriented to the northwest. Three of the rooms, Features 4, 2, and 19, were contiguous. All three rooms were badly preserved. The eastern portions of Feature 2 and 19 were demolished, and the northern portion of Feature 4 was heavily eroded. For the most part, the rooms were defined by an adobe footing with remaining short sections of a single course of cobbles. The fourth room, Feature 6, was situated a short distance to the north. One or two more rooms may have been attached to the south side of Feature 4. Most of this area, which is on the slope of the ridge, was heavily eroded. Another room, Feature 26, may have existed between Features 6 and 19. Two cobble granary pedestals (Features 24 and 31) were present in the courtyard area bounded by the cobble-adobe-foundation rooms and a cobble concentration located outside the ROW to the west., A large, shallow midden area was present about 18 m north of the compound. Eight inhumations were found on the ridge slope south of the cobble-adobe-foundation compound and intruding into room floors.

The earlier occupation was represented by a single pit house, Feature 30, morphologically similar to those at the Vegas Ruin. The structure was found within the courtyard area defined by the later cobble-adobe-foundation compound, and its entryway was oriented to the south. The two granary pedestals were superimposed above the floor of the house, indicating that this feature predated the cobble-adobe-foundation compound.

The artifacts collected from the Crane site were very diverse, including those recovered from mortuary contexts and from the general excavation. Personal ornaments made of shell and stone were common on room floors and in burials. A number of intact ceramic vessels were recovered from the burials, including red plain, Salado Red, brown corrugated, and a single example each of Pinto Polychrome and Tularosa or Pinedale Black-on-white vessels. One of the burials, Feature 38, contained the poorly preserved remains of a painted wooden shaft.

The Crane site appears to represent the remains of another small hamlet or farmstead inhabited by no more than one or two household groups. At least two temporal

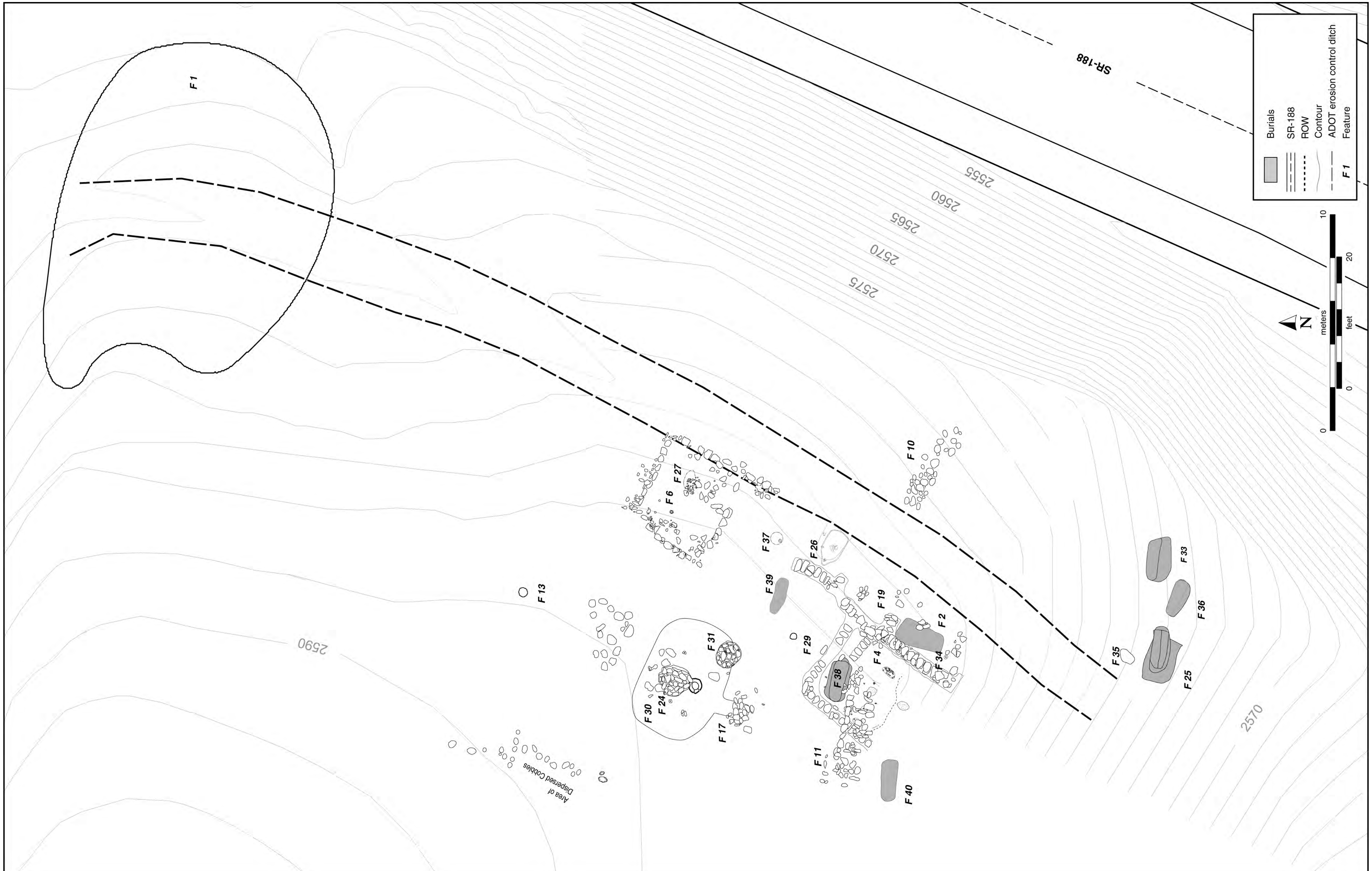

Figure 10. Map of the Crane site (410/2017).

components were identified. The pit house represents an early component dating to the Sedentary–Classic period transition, whereas the cobble-adobe-foundation compound dates to the early Classic period. The presence of contiguous architecture and polychrome vessels suggests that the cobble-adobe-foundation component at the Crane site is slightly younger in age than the primary component of the Vegas Ruin and possibly dates to the late Roosevelt or early Gila phase. An early Gila phase component may also be present at the Vegas Ruin.

The Rock Jaw Site (AZ U:3:407/2014)

The Rock Jaw site was a small single-family farmstead occupied at some time in the late Sacaton and Miami phases. This site is located on the second terrace above the current channel of Tonto Creek north of Cottonwood Creek at an elevation of 780 m (2,560 feet) AMSL. Two smaller, unnamed drainages approximate the northern and southern boundaries of the site. The northernmost of these two drainages was redirected via a deep, mechanically excavated channel, to join Cottonwood Creek south of the site. This channel formed the western boundary of the site.

The Rock Jaw site consists of two superimposed pit houses and two clusters of extramural pits and earth ovens (Figure 11). The earlier structure was a large, formally constructed, subrectangular house similar in form to Hohokam-style houses-in-pits dating to the Sedentary period. It was outlined by peripheral posts placed in a wall groove surrounding the floor and a west-facing, stepped entry vestibule. This house was severely burned and numerous charred posts and beams were found above the floor. The floor was largely cleared of artifacts, however. By contrast, the later house was a true pit house with plastered walls and an east-facing entry. The later house was not burned and numerous lithic tools and debris were scattered across the floor. The entry could not be fully defined, as it extended under the primary roots of a large saguaro. The portion that could be defined was outlined by a wall groove that extended to the adjoining portions of the east wall of the house. Among the ceramics recovered from these two houses were a small number of buff ware sherds that could not be assigned confidently to a period because of their fragmentary nature.

AZ U:3:408/2015, AZ U:3:406/2013, and AZ U:3:409/2016

Site 408/2015, representing a multicomponent site encompassing several discrete loci, is the largest site in the CCP area. The site is located on both sides of the current SR 188 alignment on the first and second terraces above the current channel of Tonto Creek at an approximate elevation of 780 m (2,560 feet) AMSL. The site was initially described as including a small cobble-adobe-foundation structure, a rock ring, and an associated surface scatter of ceramic and lithic artifacts (Hoffman 1991:47–49). This interpretation was modified during a subsequent survey when the site boundary was extended to the east as far as Tonto Creek. Included within the expanded site boundary was a large cobble-adobe-foundation compound, four cobble-adobe-foundation field houses, and a large midden (Woodall 1996:6–8). The resurvey of the site did not affect the portion of the site within the ADOT ROW, as none of the newly identified architectural features were located in the ROW. The newly identified compound and field houses probably date to the early Classic period, whereas the large midden area may represent a significant pre-Classic period habitation. Within the ROW, our investigations identified only a child inhumation, extramural pits and hearths, two middens, and a rock alignment.

The juvenile inhumation was found within a midden in the southern area of the site. The fill within the burial pit contained a diverse collection of artifacts, including several broken baked-clay figurines, carved shell, and a wide variety of ceramic sherds. Moderate quantities of ash and charcoal were also observed, suggesting that the artifacts recovered from the pit represent a general midden deposit rather than mortuary artifacts directly associated with the burial.

The remaining two sites, Sites 406/2013 and 409/2016, were very small and sparse artifact scatters. No features or temporally diagnostic artifacts were found. Site 406/2013 is tentatively assigned to the late Sedentary–early Classic periods based on the presence of a small number of decorated ceramics. Site 406/2013 is located on the lower terrace between the Vegas Ruin and the Rock Jaw site. Site 409/2016 is adjacent to the Crane site. Ceramics at this site suggest that it dates to the Formative period, but its proximity to the Crane site suggest that it is of similar late Sedentary—early Classic period age.

Tonto Creek Archaeological Project Sites

Five sites in the Cottonwood Creek locality were investigated by DAI as part of the much larger Tonto Creek Archaeological Project (TCAP) (see Figure 3; Table 2) (Clark and Vint, eds. 2000a). Eric Klucas provides a general discussion of the TCAP in the introduction to Volume 1.

Boatyard Site

The majority of DAI's effort in this area was expended investigating the Boatyard site (AZ U:3:286/1352 [ASM]). Located along SR 188 about 2.5 km south of the Crane site, the Boatyard site is a multicomponent site with Middle and Late Archaic, Early Ceramic (Early Formative), and early Colonial period occupations. The earliest component was represented by a deeply buried soil horizon associated with a small rock-filled pit, a cluster of fire-cracked rock, and a pile of river cobbles. A wood-charcoal sample from

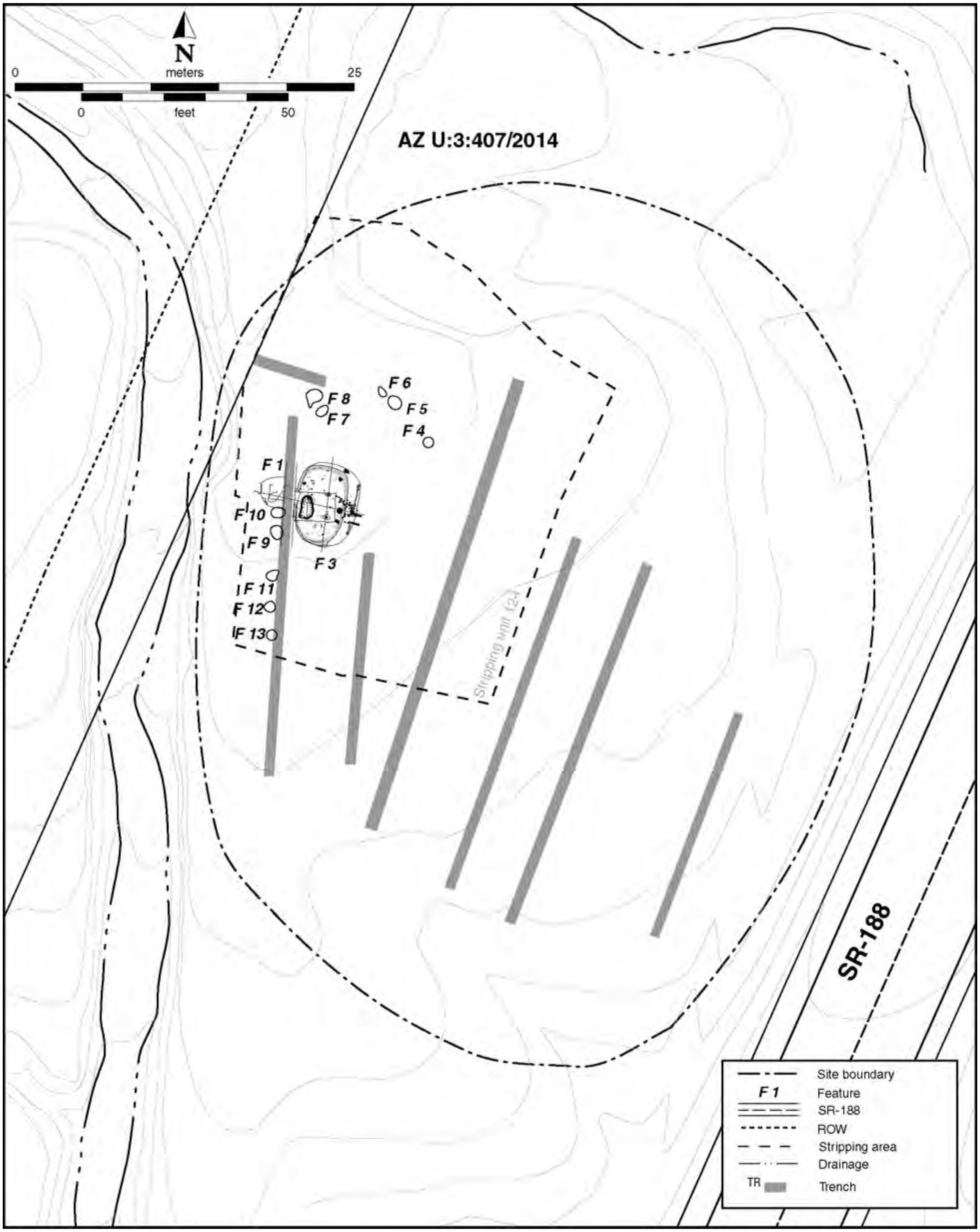

Figure 11. Map of the Rock Jaw site (407/2014).

this horizon yielded a radiocarbon date of circa 2900–2400 B.C. Pinto- and Chiricahua-style projectile points, recovered elsewhere from the site, attest further to a Middle Archaic Period occupation, although their association with this early cultural horizon could not be ascertained. In general, Huckell and Vint (2000:199) concluded that the site was a short-term campsite involving food-processing activities. No cultigens were found within the Middle Archaic period horizon, although paleobotanical preservation was quite poor (Clark and Huckell 2000:152).

The primary component investigated at the Boatyard site was one dated to the Cienega phase of the Early Agricultural (Late Archaic) period. This component was represented by a 15–20-cm-thick, ashy soil horizon associated with numerous flaked and ground stone artifacts. This horizon was dated to about 500–100 B.C., based on radiocarbon dates obtained from two carbonized maize fragments and a juniper seed, Archaic period–style projectile points, and the paucity of ceramics. DAI identified an extramural surface, dozens of rock-filled pits, and a possible house that they assigned to this time period. Clark and Huckell (2000:154) concluded that the Boatyard site may have been a seasonally occupied base camp used by people with a mixed agricultural and wild-resource-exploitation economy. They also surmised that the flaked stone assemblage was oriented toward hunting and meat processing, although little faunal bone was recovered. DAI accidentally identified a larger Archaic period site (AZ U:3:353) situated on a low terrace overlooking the Tonto Creek floodplain on the opposite bank from the Boatyard site. DAI collected one Gypsum-style, one possible San Pedro–style, and three Cienega-style projectile points, but conducted no other investigations, as the site was outside of the project ROW (Clark and Huckell 2000:154).

The early Ceramic period component at the Boatyard site is represented by a single pit (Feature 18); a carbonized maize fragment from the pit yielded a radiocarbon dated of A.D. 120–340 (2 sigma). No associated artifacts were found to verify this temporal assignment (Clark and Huckell 2000:154).

A small Gila Butte phase component was also investigated at the Boatyard site. This included the only definite pit house found at the site. Feature 8 was a moderate-sized (about 21 m^2), subrectangular structure with a east-facing entry ramp and two large, central support posts (Huckell and Vint 2000:190). This structure appears to have been a Hohokam-style house-in-a-pit with a floor groove, although no peripheral postholes were identified. The age assignment was based on a radiocarbon assay of A.D. 645–880 (2 sigma) derived from a burned juniper seed found in the hearth. The small number of features assigned to this time period and the light scatter of Gila Butte phase refuse at the site suggest that it was short-lived (Huckell and Vint 2000:200).

Heron Hatch

A Colonial period component was also found at the nearby Heron Hatch site (AZ U:3:224/2064). Two pit houses, a secondary cremation, and several pit features were found at this small farmstead. Feature 1 was a poorly preserved subrectangular house of moderate size (about 21 m^2) (Hall, Clark, and Minturn 2000:205). The entryway faced to the northeast and away from the only other structure identified. The walls were not well defined, and thus it is difficult to determine the method of construction. The presence of peripheral postholes suggest it was a Hohokam-style house-in-a-pit, although the diagnostic floor groove was not identified. Feature 5 was a larger (about 26.5 m^2) house of informal construction. It was roughly circular in shape and lacked a hearth or defined entryway. Neither floor-groove or peripheral posts were found, although 13 large postholes circled the interior of the house and were located 20–50 cm inside of the pit walls. Feature 7 was an infant cremation associated with a small Santa Cruz Red-on-buff vessel and a plain ware bowl. Six other extramural features consisted of three roasting pits and three indeterminate pits. The Heron Hatch site appears to represent a seasonally occupied farmstead, or one occupied repeatedly on a short-term basis. Two Snaketown Red-on-buff sherds suggest that the site was occupied initially in the late Pioneer period. One of these sherds was from a floor pit in Feature 5, suggesting that this informal structure was built at this time. The ceramic collection was dominated by Gila Butte and Gila Butte or Santa Cruz Red-on-buff, indicating that the principal occupation was in the early Colonial and possibly late Colonial periods. Apart from the Santa Cruz Red-on-buff vessel found in the cremation, only a single definite Santa Cruz Red-on-buff sherd was recovered at the site (Hall, Clark, and Minturn 2000:212–213). The latter was recovered from the upper fill of Feature 1. A radiocarbon assay obtained from a maize cupule found in the near-floor fill of Feature 1 yielded a date of A.D. 670–890 (2 sigma) (Hall, Clark, and Minturn 2000:205).

Other TCAP Sites

The remaining prehistoric sites investigated by DAI in the Cottonwood Creek locality were nonresidential sites assigned to the early Classic period. AZ U:3:222/1347 was a low-density surface scatter located along SR 188 about 400 m south of the Crane site. The site was situated at the crest of a broad, low terrace bordering the Tonto Creek floodplain at an elevation of about 770 m (2,526 feet) AMSL. Soils consist of a coarse matrix of pebble and cobble gravels set in a pale reddish-brown, sandy silt (Hall, Clark, and Huckell 2000:215). The presence of red ware and corrugated sherds suggested an early Classic period age for the site. DAI found no decorated sherds, although a single black-on-white sherd was noted in an earlier survey. No features were found in their limited excavation of this artifact scatter. Hall, Clark, and Huckell speculate, however, that architectural features may exist in the uninvestigated portion of the site outside of the ROW.

AZ U:3:285/1350 was the poorly preserved remains of either a small compound or two distinct masonry structures (Hall, Clark, and Huckell 2000:217). This site was located about 130 m north of the Boatyard site and was situated on a high terrace on the west bank of Tonto Creek at an elevation of 756 m (2,480 feet) AMSL. The terrace where the site is located drops down a steep bank 15 m vertically onto the floodplain. The unprotected bank is heavily eroded, leaving only the southwest corner of the masonry structure intact. A high percentage of corrugated sherds and a single Pinto Polychrome sherd suggest an early Classic period age for this site (Hall, Clark, and Huckell 2000:219). Significantly, DAI found no evidence for a Sedentary period occupation in this part of their study area. The only evidence for this period of occupation was found at a large Classic period compound (AZ U:3:288/1354), located along SR 188 on the edge of a terrace about 1 km south of Slate Creek.

Other Sites

The VIV Ruin

Several other sites have been investigated in the Cottonwood Creek locality. The VIV Ruin (AR-03-12-06-17), or Meredith Ranch Site, is the most important settlement in the locality. The VIV Ruin is a large settlement complex located on an old alluvial terrace on the east side of Tonto Creek, a little over a kilometer southeast of the Crane site. This settlement is believed to have been occupied from the early Classic period until the end of the late Classic period (Van West and Altschul 1994:Figures 4.11–4.13). The early Classic period occupation is represented by a cluster of low cobble-foundation-walled structures containing one to four rooms. Small compounds of similar construction occur in the surrounding area. In the Late Classic period, these single-story, cobble-foundation structures were replaced by a compact multistory masonry room block, which was partially excavated by avocational archaeologists beginning in 1961 (Mills and Mills 1975). Mills and Mills (1975:1, 6) described the later structure as a terraced pueblo that was up to four stories in height and was built on top of one of the earlier structures. It extended about 30 m east–west by 40 m north–south and was about 9 m high at its highest point. Mills and Mills's (1975) map of the site indicates it contained approximately 30–40 ground-floor rooms. If a third to a half of these rooms were multistory, it may have contained 50–60 rooms, making it one of the largest Classic period settlements in the northern part of Tonto Basin. A compound wall extended in a southern direction about 30 m from the southeast corner of the structure, enclosing some of the outlying single-story structures in a courtyard area. Excavation of similar sites as part of the Roosevelt Platform Mound (RPM) and Roosevelt Community Development (RCD) studies by Arizona State University and DAI, respectively, suggests that the Mills' characterization of the VIV Ruin was incorrect, and it was more likely a two-story structure with a platform mound and many fewer rooms.

The Mills excavated 19 of the rooms and 25 burials in the main structure. Two rooms contained large numbers of storage vessels on the floor; also present were the bases of clay-lined granary pedestals. They observed a variety of wall-construction methods. Some rooms were built with river cobbles laid in a mud matrix, others were constructed of coursed tufa slabs with no mortar, whereas still others were of mixed construction. The wall of one room was built of shaped tufa slabs that were covered with markings. Gila and Tonto Polychrome predominated among the ceramic vessels recovered from burials, suggesting most were placed in the late Classic period. A smaller number of Jeddito Black-on-yellow and a single Pinedale Polychrome confirm this age and suggest that the residents of the site interacted with Anasazi and Late Mogollon populations to the north and east.

Much of the VIV Ruin complex was located on a private ranch and the remainder extended onto TNF land. Much of the site, especially the upper story of the main room block, had already been destroyed by vandals when the Mills began their excavations in 1961. Most of the remainder of the main room block and surrounding compound that was on private land was destroyed in the early 1980s, when the author was directing the excavations for the Mazatzal Piedmont Project. I was invited by the current owner of the site to inspect the damage. By that time, only a small remnant of the main structure was preserved on TNF land, although most of the surrounding earlier compounds were largely intact. The two-story cobble-masonry construction of the main room block/platform mound was clearly visible in a row of rooms that had been truncated along the Forest boundary.

Kayler Butte

Located on top of an isolated butte and about 4.5 km southeast of the Crane site is the Kayler Butte site (AR-03-12-06-550). Although this site has not been investigated, it is an example of one of the many Classic period Tonto Basin sites built in a defensive location. Situated at an elevation of about 890 m (2,920 feet) AMSL, about 120 m above the surrounding floodplain, the site's location commands a view of the southern entrance into the Cottonwood Creek locality.

Slate Creek Ruin

The Slate Creek Ruin is a small multicomponent site located along SR 188 about 400 m north of where Slate Creek enters the Tonto Creek floodplain and about 3.5 km south of the Crane site at the southern edge of the CCP. Situated on the edge of an old alluvial terrace, this small settlement is about 25 m above a series of springs that emerge from the foot of the steep terrace edge on the nearby Brown Ranch. The site was investigated by ASM in 1977 (Huckell 1977).

The initial occupation of the site occurred at some time in the Santa Cruz phase when a pit house was constructed along with an *horno* and isolated artifact cache. The pit house was a small informal structure, about 11 m^2 in area (Huckell 1977:79–80). It contained a small unplastered firepit near the south wall of the structure, which was identified by a series of peripheral posts. The floor was not plastered, and no evidence of the entryway was found. Santa Cruz Red-on-buff and San Francisco Red pottery found in the vicinity of the house indicate a Santa Cruz phase age. Associated with this house was a large *horno* and associated burnt-rock midden. The recovery of two different Kana'a Black-on-white sherds from this feature suggest that it also dates to the Santa Cruz phase. The cache consisted of a Wingfield Plain bowl containing two miniature vessels—one a Kana'a Black-on-white jar—and a cluster of 39 shell beads.

The later component consisted of a *jacal* structure, a retaining wall, and, possibly, a small *horno*. The structure was represented by a plastered hearth resting on a caliche surface. The structure was badly disturbed and only a small portion of the floor remained. Three postholes marked a remnant of a presumed *jacal* wall. Three manos and a single Tonto Corrugated sherd were found on the floor. About 2.7 m to the west of the structure was an intact 6.5-m-long segment of the retaining wall, which probably originally extended up to 11 m in length (Huckell 1977:81). The wall was constructed of river cobbles set in a mud mortar within a shallow wall trench and probably stood 1–1.25 m in height. The wall was apparently constructed to protect the *jacal* structure, whose floor was leveled by excavating into the caliche substrate below the sloping terrace surface, creating a 1.5-m-high vertical wall of caliche behind the structure. The retaining wall, set into the top of caliche surface would have deflected runoff from the terrace above the structure. A small rock-filled hearth or *horno* was found just outside of the south wall of the older pit house. A single Tonto Red sherd recovered fro the pit fill suggested the hearth was associated with the later *jacal* structure.

A variety of ceramic types found at the site suggest that the later occupation of the site occurred in the early Classic period, perhaps the Miami phase. These later types include Snowflake and Holbrook Black-on-white, Salado Red, Gila Red Smudged, Tonto Red, McDonald Corrugated, and Tonto Corrugated (Huckell 1977:92). Huckell (1977:92) also recovered a heavily weathered, contracting stemmed projectile point that he suggested is comparable to the Middle Archaic period points recovered at the Hardt Creek site. This discovery is not surprising, given the presence of Archaic period components at the nearby Boatyard site and AZ U:3:353, located about 0.75 km to the northwest and northeast respectively. Huckell also recovered the tip fragment of a large point, which he attributed to the Colonial period occupation of the Slate Creek Ruin, based on its similarity to a point found at the Ushklish Ruin. Unfortunately, no chronometric or paleobotanical samples were collected from this site.

Culture History

Tonto Basin may have been occupied as early as 10,000 B.C. by Paleoindian hunters who were followed by Archaic peoples, then by Hohokam, Salado, and Sinagua (Figure 12). In the protohistoric and historical periods, Western Apache and Euroamerican groups occupied the area. In these respects, the region shares much in common with other major areas of central Arizona. Organized research into the region's prehistory began with Adolph Bandelier's (1892) visit to the area in 1883 and was followed by surveys and excavations by E. F. Schmidt (1925, 1927, 1928) (see also Hohmann and Kelley 1988) and Gila Pueblo (Gladwin 1957; Gladwin and Gladwin 1935; Haury 1932). Interest in the area continued throughout the 1930s with the beginning of excavations at the cliff dwellings of the Tonto National Monument (Steen et al. 1962) and in Globe (Vickery 1939, 1945).

Between the 1970s and early 1980s, almost all of the archaeological excavations in Tonto Basin were carried out in connection with small-scale ADOT-sponsored projects and other contract work (Doyel 1978; Gregory 1980, 1982a, 1982b; Hammack 1969; Hohmann, ed. 1985; Huckell 1978; Jeter 1978; Reid 1982). Several of these early projects are especially germane. A significant early Classic period occupation at the head of Hardt Creek valley and in adjacent upland areas was represented by a concentration of small habitation and limited-activity sites along SR 87 (Ciolek-Torrello, ed. 1987; Olson 1971). The Classic period settlements in the Hardt Creek locality may have been related to the much larger Rye Creek Ruin, a 150-room pueblo and platform mound, which has received only limited attention (Craig 1992a; Haury 1930). Middle Archaic and Colonial period occupations were represented by the Hardt Creek site (Huckell 1973) and Ushklish Ruin (Haas 1971, n.d.), respectively, along SR 188 in the lower portion of this small valley. Also along SR 188 at the southern end of the Cottonwood Creek locality, Huckell (1977) investigated a small pre-Classic period habitation site, the Slate Creek Ruin. The VIV Ruin is one of the few large Classic period settlements that was intensively investigated during this early period of archaeological work. This work was done privately by avocational archaeologists, and only a brief descriptive report of the results was prepared (Mills and Mills 1975). The VIV Ruin is probably the primary Classic period site in the Cottonwood Creek locality.

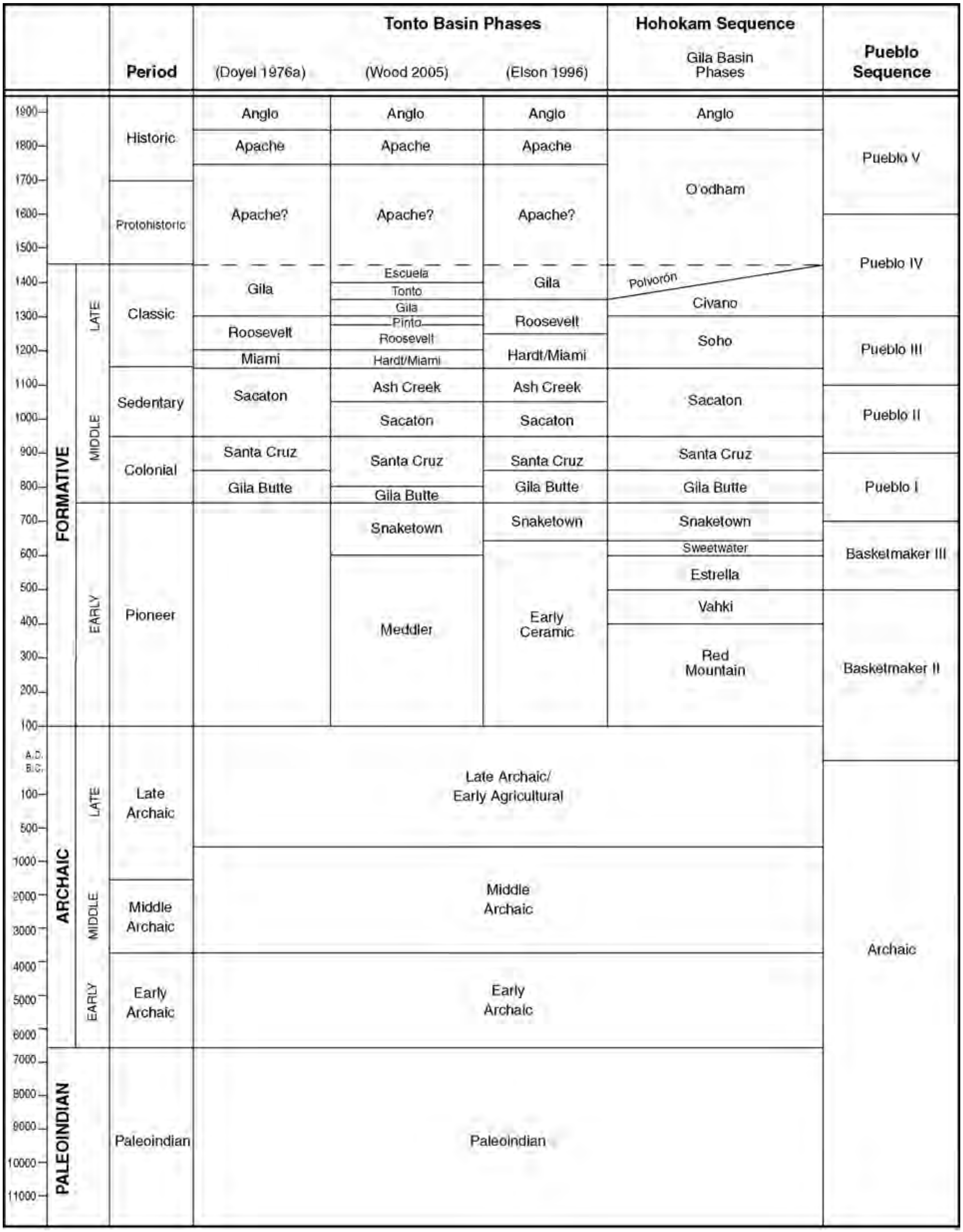

Figure 12. Chronology of Tonto Basin.

Although the list of these early projects was impressive, the various syntheses attempted on the basis of their results (Ciolek-Torrello, ed. 1987; Doyel 1972, 1976a, 1976b, 1978; Gladwin 1957; Gladwin and Gladwin 1934, 1935; Pomeroy 1962; Rice, ed. 1985; Wood 1986; Wood and McAllister 1980; Wood et al. 1981; Whittlesey 1982; Young 1967) were limited by unsystematic survey, the small-scale nature of most projects, and the lack of detailed reports on the larger sites. Major aspects of the region's prehistory remained unknown or the subject of considerable controversy.

This situation has been reversed dramatically within the last decade as a result of a number of large-scale excavations sponsored by ADOT and the Bureau of Reclamation (Reclamation) (Ciolek-Torrello, Shelley, et al. 1994; Ciolek-Torrello and Welch 1994; Clark and Vint, eds. 2000a; Elson and Craig 1992a; Elson, Stark, et al. 1995; Jacobs 1994, 1997; Lindauer 1995, 1996, 1997; Oliver 1997; Oliver and Jacobs 1997 [see discussions in Volume 2, Chapter 1, for summaries of these projects]). Avoiding the limitations that hampered previous projects, these investigations sampled a broad range of site types that represent entire settlement systems and the entire sequence of the prehistory of ceramic-producing populations in the region. Together with several large-scale, systematic surveys that filled in many of the gaps in survey coverage (Ahlstrom et al. 1991; Curtis 1992; Germick and Crary 1989, 1992), this research has made it possible for the first time to address research issues of regional significance and to reconstruct major aspects of the region's prehistory to a degree of detail and accuracy that has never before been possible.

Preceramic Periods

Despite this recent research, significant gaps in our understanding of the region's prehistory still remain. Perhaps the most glaring voids are the periods prior to the ceramic period. Paleoindian material is rare throughout central Arizona. Huckell (1978) has identified a probable Clovis component represented by a single Clovis point and four scrapers at the Silktassel site south of Payson. Huckell (1982:3–8) described a Clovis point found in secondary contexts on the east side of Tonto Creek near Punkin Center during bulldozing operations.

The later occupation of Tonto Basin by Middle Archaic period hunting-and-gathering groups is better documented but still involves only rare and widely scattered camps and work areas found throughout the piedmont areas away from major drainages. This occupation, identified as the Corral Creek phase (Ciolek-Torrello 1987b:348–350), is best documented in the Payson Basin (Huckell 1978), the Upper Tonto Basin (Ciolek-Torrello 1987b; Huckell 1973, 1993), and the Black Mesa area of the southern Sierra Ancha (Reid 1982). This phase is represented by small base camps and resource-procurement and -processing sites located in the transition between the desert scrub and juniper woodland vegetation community, often near springs. Few intact features dating to this phase have been found to provide any detailed evidence about subsistence, social organization, or chronology, although the abundance of projectile points and ground stone tools at these sites suggests a diversified subsistence strategy. The Boatyard site, located near the southern end of the Cottonwood Creek locality, includes a Middle Archaic period component, suggesting seasonal use of the Tonto Creek floodplain at this early date as well (Clark and Vint, eds. 2000a). Few Late Archaic period manifestations have been identified in excavations in Tonto Basin. Evidence of small Late Archaic floodplain settlements has been found in the neighboring Sycamore Creek area on the western flanks of the Mazatzals (Vanderpot et al. 1999) in contexts very similar to those in the project area. The Sycamore Creek settlements are represented by informal surface structures, pits, and burials, and appear to involve intensive exploitation of floodplain settings of small drainages on at least a seasonal basis. Although such small upland riparian locations have been hypothesized as hearth areas for agricultural development (Matson 1991), no evidence of maize cultivation was found in these early Sycamore Creek floodplain settlements.

The Early Ceramic and Pioneer Periods

The earliest known village in Tonto Basin, Locus B of the Eagle Ridge site, dates to the first centuries A.D. (Elson 1996). This important site represents an agricultural settlement exploiting maize and perhaps cotton and producing sophisticated ceramics (Elson and Lindeman 1994). A limited occupation at the Boatyard site (Huckell and Vint 2000:199) and site components with more-substantial remains near Punkin Center (Clark and Vint, eds. 2000a) have also been assigned to this time. Similarities of the architecture and other cultural remains at the Eagle Ridge site to early Mogollon sites suggest that this settlement is part of a widespread early agricultural adaptation in the Southwest (Ciolek-Torrello 1998; Gregory 1995). The formal courtyard groups found in later Hohokam sites do not occur at these sites; instead, small circular and bean-shaped houses are arranged in loose clusters with parallel, generally east-facing entryways. These house clusters are often associated with a single large communal house. These large houses vary in shape, but are similar in construction to communal houses of early Mogollon villages (Gregory 1995:151).

Although not well documented, evidence of later Pioneer period occupations is much more widespread in the region. The limited evidence available indicates that settlement at this time was insubstantial and transitory (Doyel and Elson 1985). The most-extensive Snaketown phase remains that have been excavated were found at Deer Creek Village during the RCMP in the Upper Tonto Basin (Elson and Craig 1992a). The exact nature of this late Pioneer period settlement is unclear, as no houses dating to this time have been found. A late Pioneer period occupation is also attributed to the Heron Hatch site (Clark and Vint, eds. 2000a), located near the southern end of the Cottonwood Creek locality.

Until recently, Tonto Basin was believed to have been first settled by agricultural people during the late Pioneer or Colonial period. This early settlement was part of a large-scale expansion of Hohokam people from the Phoenix Basin into surrounding regions where riverine habitats were available for irrigation agriculture and suitable wild resources could be harvested (Pilles 1976; Wood and McAllister 1980). Distinctive burial customs, architecture, and ceramic styles found in these sites, however, suggest that the first farmers in the region represented an indigenous group (Elson et al. 1992), possibly related to the Central Arizona Tradition (Wood 1987).

The Colonial Period

Although still limited in distribution, the Colonial period occupation throughout the region is much better documented than preceding periods. During the Gila Butte phase, small farmsteads and hamlets were few and widely scattered. A handful of these settlements, such as Deer Creek Village (Swartz 1992a), the Boatyard site (Huckell and Vint 2000), the Hedge Apple site (Swartz and Randolph 1994a), and Roosevelt 9:6 (Haury 1932), have been located on the lower terraces overlooking the floodplains of major drainages. These locations offered the best advantage for the primary agricultural strategies of floodwater farming in the floodplain and irrigation agriculture along the streamside terraces (Wood and McAllister 1984:280). There is little indication until the Sedentary period of residence away from the floodplain on the *bajada* or piedmont. The location of the Ushklish Ruin (Haas 1971) in Hardt Creek valley, at some distance from the Tonto Creek floodplain, is one exception to this rule. Small Colonial period farmsteads have also been found in the upland Round Valley area on the opposite flanks of the Mazatzals from the CCP area (Vanderpot et al. 1999). The small dispersed *rancherías* of this period were characterized by short-term sedentism and seasonal movements relating to an economy based on horticulture, wild-plant gathering, and hunting. This strategy was probably closely tied to the highly variable climatic conditions that characterized this period.

The structure of these various early Colonial period sites is transitional between the arrangements exhibited at Early Ceramic period sites and the courtyard groups typical of later Hohokam settlements. Gregory (1995:149–151) has argued that the arrangement of many houses at the Deer Creek site and Ushklish Ruin reflects a continuation of the Early Ceramic period residential pattern. Building on the interpretations of Haas (1971) and Elson (1992a), Gregory has suggested further that this structural arrangement reflects an indigenous organizational pattern that was subsequently modified into the courtyard arrangement by interaction with later Hohokam migrants into Tonto Basin.

The Santa Cruz phase contrasts markedly with preceding periods, with the growth of substantial permanent settlements. By this time, settlements had diverged into a more diversified and complex system of resource-procurement loci, small ephemeral agricultural occupations, seasonally occupied farmsteads, farming settlements exhibiting evidence for more permanent occupation, and larger primary villages. The Slate Creek Ruin (Huckell 1977), located at the southern edge of the Cottonwood Creek locality, apparently represents one of the smaller settlements. By contrast, Meddler Point, located along the Salt River arm in the eastern part of Tonto Basin was a primary village–irrigation community virtually identical in structure and composition to large, contemporary settlements of the Phoenix Basin (Craig and Clark 1994).

The Colonial period represents a time when Tonto Basin came under varying degrees of influence from the Phoenix Basin Hohokam (Elson et al. 2000). Hohokam Buff ware, palettes, censers, and other Hohokam related artifacts are abundant in Tonto Basin at this time, especially at sites in the Salt River arm. The extensive use of cremation ritual suggests these settlements were well integrated into the Hohokam regional system (Wilcox 1979), although the absence of ball courts in Tonto Basin is notable. Evidence for interaction with the Hohokam is much less common in contemporary settlements of the Upper Tonto Basin. The persistence of large communal houses at the Ushklish Ruin also contrasts with courtyard groups. Buff ware and other Hohokam derived artifacts are also much less common in the excavated settlements in the Upper Tonto Basin relative to those in the Lower Tonto Basin.

The Sedentary Period

The nature of the Sedentary period occupation in Tonto Basin, now divided into the Sacaton and Ash Creek phases (Elson 1996) (see Chapter 3), remains a controversial issue (Ciolek-Torrello et al. 1990:10–11). Early investigators (Gladwin and Gladwin 1935; Steen et al. 1962) suggested that Tonto Basin and the Globe-Miami areas were abandoned by the Hohokam at this time, and remained unoccupied until the arrival of the Salado around A.D. 1100. This occupational hiatus is no longer supported, however. A recent review suggests that Sedentary period farmsteads are numerous and widespread in the region (Ciolek-Torrello 1994a).

The Gladwins may have been premature in suggesting the area was abandoned at this time, but the belief that the bulk of the pre-Classic period occupation in the greater Tonto Basin dates to the Sedentary period (Wood 1985:246) is equally arguable. Few large Sedentary period villages are known, although as documented in the TNF site inventory, a number are suspected. By contrast, Sedentary period farmsteads are abundant, and in many cases the excavated sites suggest a shift from the Colonial period pattern of short-term sedentism to recurrent seasonal occupations. The best-known sites of this period occur in the Ash Creek (Rice, ed. 1985), Miami Wash (Doyel 1978:207), and Rye Creek areas (Elson 1992a) on the edge between the piedmont and riverine zone, where the inhabitants probably had equal access to upland and lowland resources. Many of these sites, however, have large, but more-informally constructed pit houses and relatively little artifactual evidence that might suggest intensive occupation (Ciolek-Torrello 1994b).

Permanent farming settlements appear to be restricted to the Salt River arm of the basin, where small farmsteads such as the Riser and Grapevine Vista sites (Shelley and Ciolek-Torrello 1994) and the Sacaton phase components of the Eagle Ridge and Meddler sites occur (Craig and Clark 1994; Elson and Lindeman 1994). These are fully agricultural settlements with a broad array of domesticates including maize, tepary beans, squash, and cotton. Houses are of substantial and formal construction; several at the Riser site exhibit evidence of the elaborate elevated wooden floors that Haury (1932) documented at the older site of Roosevelt 9:6. Artifact assemblages are large and diverse, and well-developed middens and evidence of remodeling and reconstruction attest to an intensive, and relatively permanent occupation.

Ciolek-Torrello, Whittlesey, and Welch (1994) have suggested that it was the unusually salutary climatic conditions of the Sedentary period that spurred this dispersal and expansion of settlement into areas that were previously too unpredictable to exploit on more than an intermittent basis. The eleventh century and early decades of the twelfth century represent the longest, most predictable period in the climatic sequence for the region (Van West and Altschul 1994). This was an ideal time for agricultural production in riverine and upland areas.

For the most part, material-culture and architectural patterns exhibited a high degree of continuity between the Colonial and Sedentary periods with varying influences by the Hohokam. The Ash Creek phase, however, is distinguished by a breakdown in these patterns reflected in the disappearance of Hohokam Buff wares and cremation ritual, and the appearance of Cibola White wares and supine inhumation. Survey data, however, suggests that white ware may have appeared earlier in Tonto Basin as Kanaa and Kiatuthlanna are suspected at some sites with Snaketown, Gila Butte, and Santa Cruz red-on-buff (Scott Wood, personal communication 2010).

The Classic Period

The early Classic period is divided into the Miami and Roosevelt phases (Ciolek-Torrello, Whittlesey, and Deaver 1994; Doyel 1976a; Elson 1996). Although our understanding of the Miami phase remains rudimentary, the Roosevelt phase is now better known than any other period of time in the prehistory of the region. The early Classic period was the time of the widest distribution of settlements (Ciolek-Torrello 1987b; Germick and Crary 1989, 1990). By the end of this period, nearly every locality in Tonto Basin capable of supporting agriculture had been occupied, at least briefly. This occupation reflects a substantial population increase over preceding periods, an expansion that has been attributed to steady population growth and the consequent utilization of the best riverine farmland (Wood and McAllister 1984; see also Doelle 2000). Alternatively, the uplands may have become attractive to the inhabitants of Tonto Basin, as well as immigrants from the Mogollon Rim and other neighboring areas, because of the good climatic conditions that characterized Tonto Basin in the early part of this period, or, conversely, because of deteriorating conditions in other regions (Ciolek-Torrello, Whittlesey, and Welch 1994; Van West and Altschul 1994; Whittlesey and Ciolek-Torrello 1992).

During the Miami phase, sites typically consisted of clusters of two or three detached low-walled masonry/adobe-walled pit rooms. Many of these sites lack compound walls and are characterized by oval-shaped rooms apparently rooted in Sacaton phase pit house architecture (Clark and Vint, eds. 2000a; Dosh and Ciolek-Torrello 1987; Elson and Craig 1992a; Germick and Crary 1990:10–11). Less is known about large riverine settlements in the Miami phase, which may have been completely obscured by later Roosevelt phase occupations (Clark and Vint, eds. 2000a).

The Roosevelt phase is the time when the largest villages were established in Tonto Basin and the greatest expansion of rural settlement in riverine and upland areas occurred. Most of these villages were riverine settlements such as the Meddler Point, Schoolhouse Point (Lindauer 1996), Livingston (Jacobs 1994), and Armer Ranch (Wood 2000:113) communities. These communities consisted of clusters of dispersed compounds containing aboveground adobe- and masonry-walled rooms. Despite the shift to aboveground architecture, Clark (1995a) has suggested that there is continuity between the residential units that occupied pre-Classic period house clusters and those that occupied compounds. Gregory inferred long-term stability in settlement composition and social relations from this pattern. The Roosevelt phase has also been identified as the period most closely associated with the construction of platform mounds, which came to encompass the entire riverine zone of the basin and even isolated upland areas (Wood 2000:113).

Important changes in material culture, especially ceramics and architecture, also characterized the Roosevelt phase. Pinto Polychrome appeared at this time, along with a variety of plain and corrugated red wares. Clark (1997) (see also Elson et al. 2000) has suggested that small immigrant groups from north and east of Tonto

Basin entered the area during this time, as indicated by the appearance of contiguous blocks of masonry rooms within and adjacent to indigenous settlements. Although he attributed the production of Salado Red Corrugated to these immigrants, they also may have been a source for the importation or consumption of the White Mountain Red ware vessels that are abundant in settlements of the eastern basin. Wood (1987, 2000), however, has argued that the name Salado Red is a misnomer as it is the ubiquitous pottery of the Sierra Ancha region, being made of local diabase-tempered materials and probably serving as a common utilitarian ceramic in this region. Wood (2000:127) views Salado Red as the hallmark of the indigenous Anchan culture; the pottery was probably traded to other areas such as Tonto Basin and the Grasshopper region to the east, where its use was restricted largely to mortuary contexts.

The late Classic period is represented by the Gila phase. This was a time of replacement of most platform mounds and their associated settlement complexes by a settlement system focused more on compact residential roomblocks or pueblo-like structures that Wood (2000:117–118) refers to as caserones. This reorganization was also associated with large-scale abandonments of areas that were previously characterized by intensive settlement. By the middle of the fourteenth century, most of the Roosevelt phase site complexes were abandoned, replaced by as few as 11 larger and more-nucleated pueblos (Ciolek-Torrello, Whittlesey, and Welch 1994:Figure 15.6). Settlement nucleation does not account fully for the decrease in the number of sites and Doelle (1995:211, 2000:91) has suggested a significant population decline in the Gila Phase and the possibility of population emigration. Evidence for conflict is suggested by catastrophic burning in many excavated sites at the end of the Roosevelt phase (Shelley 1994), the placement of many settlements in naturally fortified locations, and construction of fortifications in others. The Gila phase also culminated in the complete depopulation of the region and the end of any recognizable Salado cultural tradition in Tonto Basin and adjoining areas. Gila and Tonto Polychromes are the principal diagnostic ceramics in the Gila phase, although Fourmile Polychrome is locally abundant in the eastern part of the basin and Hopi Yellow Ware has been recovered in limited quantities (Simon and Jacobs 2000).

Historic Contexts

In accordance with the TNF's CRM plan (Wood et al. 1989), we utilized the concepts of historic contexts, themes, and property types (see Dart and Doelle 1988) to evaluate and organize cultural resources in the CCP area and to develop relevant research topics. The Tonto Basin Study Area represents the geographic division in which the CCP area falls (Macnider and Effland 1989). TNF has identified 10 overarching themes for heritage resources within this area. At the inception of the CCP, we deemed that of these themes, subsistence, demography, social-political-ideological systems, technology/architecture, and exchange/trade/commerce were the most appropriate to address with data from the prehistoric archaeological sites contained within the project area. Furthermore, we focused our attention on the theme of subsistence and settlement as the most directly applicable theme and the one that was most likely to be addressed with the type of sites we expected to find in the project area (see Ciolek-Torrello et al. 1990; Effland and Macnider 1991:47; SRI 1995). Some aspects of other themes such as social-political-ideological systems and technology/architecture were addressed under the subsistence theme as well. Finally, the theme of transportation and communication was most directly relevant to the Globe-Payson Highway. Table 3 lists these themes, related research issues, and data requirements.

Subsistence and Settlement

Macnider and Effland (1989) itemized a number of subsistence-related concerns, such as land-use patterns, plant domestication, means of food preparation and storage, intensification of food production, and agricultural strategies. In the past, SRI has focused its research on similar research questions and sets of sites as those investigated by the CCP, and we compiled comprehensive sets of archaeological, paleoenvironmental, historical, and ethnohistoric data concerning land use as part of several previous studies in Tonto Basin and adjacent areas (Ciolek-Torrello and Welch 1994; Ciolek-Torrello, Shelley, et al. 1994; Klucas et al. 2003; Vanderpot et al. 1999; Whittlesey et al. 1998) (see also Volume 2 of this series). The research strategy we employed and the data we gathered in these previous studies provided an excellent framework and background for conducting the CCP. Our experience in these past projects demonstrated that collections of small sites, such as those in the CCP area, can contribute significant information concerning land-use systems when placed within a broader context developed through regional studies of archaeological, historical, ethnohistoric, and environmental-climatic data. Much of this broader contextual database had been developed in these previous studies (Van West et al. 2000) (see Figure 2) and was updated with additional data from this project.

Preceramic Settlement and Subsistence

We initially expected a relatively low potential for the CCP to contribute to settlement and subsistence during the preceramic

Table 3. Research Themes and Data Requirements

Research Themes and Specific Issues	Data Requirements
A. Subsistence and Settlement	
Selection of natural resources	Habitation and subsistence sites, architecture
Agricultural dependence	Food-processing and storage facilities and tools
Mobility	Paleobotanical and faunal data
Human-land relationships	Environmental and paleoclimatic data
	Regional site and chronometric data
B. Demography	
Population growth and decline	Regional site and chronometric data
Aggregation and dispersion	Site composition and size
Population movement	Architecture and site structure
Ethnicity	Burial treatment
Ideological and sociopolitical systems	Ritual items
Agricultural productivity	Paleoclimate, food production, agricultural technology
C. Exchange/Trade/Commerce	
Regional interaction	Nonlocal goods and raw materials
	Ritual practices, architectural and artifact styles
Economic specialization	Paleobotanical and faunal data, food-processing tools
Craft specialization	Ceramic and lithic sourcing

periods because of the small number of sites expected to contain Archaic period components. Furthermore, existing information about this era in the TNF is relatively weak and much of the paleoenvironmental data could not be extended to these early time periods. Middle Archaic period settlements are common in Hardt Creek Valley (Huckell 1973), and Site 103/2061 was expected to represent another such manifestation. Previous work in these upland settlements, however, suggested a low probability for the recovery of the types of features that might provide direct evidence of resource use and settlement (Ciolek-Torrello 1987b; Huckell 1973). But precisely because of the paucity of data pertaining to these time periods, we expected that any information obtained through this project would represent a significant contribution.

By contrast, the potential of the project for contributing information to the issue regarding the Late Archaic–Formative transition was particularly appealing. The discovery of Late Archaic and Early Formative period manifestations at the nearby Boatyard site and other settlements at the southern end of the Cottonwood Creek locality, suggested that similar discoveries might be made at some of the CCP sites in the area. Unfortunately, no firm evidence for Late Archaic or Early Formative manifestations was found in any of the CCP sites. A large roasting pit and several other roasting features were encountered in an early soil horizon at the Vegas Ruin. The geomorphic context of these features suggests that they date to the Archaic period, possibly the Middle Archaic period. No datable material or associated artifacts were recovered, however, despite an intensive effort. We are left with the conclusion that there was possibly a Middle Archaic period presence in the area, an important discovery in and of itself given the paucity of data about this time period.

Pre-Classic Period Settlement and Subsistence Patterns

The issues of mobility and sedentism relate to strategies for exploiting an environment. The degree of sedentism of pre-Classic period farmers in central Arizona remains an unresolved issue (Elson 1992a; Vanderpot et al. 1999; Welch 1994). By examining the distribution of modern biotic communities, soils, and paleoclimate (see Ciolek-Torrello and Welch 1994; Huckell 1993), we had expected to make predictions about food productivity, resource choices, and patterns of mobility. Furthermore, we expected to compare these predictions against subsistence data obtained from habitation sites and the locations of agricultural features, specialized resource-procurement and -processing sites, and field houses. Utilizing data primarily from the Upper Tonto Basin, Elson (1992a) outlined a model for measuring the degree of sedentism among small habitation sites similar to those found in the project area. Elson's conclusions provide a useful guide for evaluating the different project sites. Again, our expectations were not entirely met. We had expected to obtain most of the environmental data from the Terrestrial Ecosystem studies done for the TNF, but learned that there was no data on the western part of Tonto Basin where most of the known archaeological sites were located. As a result, our focus in Chapter 5 is on subsistence data obtained from archaeological investigations in the region.

The selection and processing of resources is another appropriate research issue that relates to the broader theme of subsistence. We addressed this issue using data from various archaeological studies of botanical and faunal materials recovered from storage and resource-processing features at habitation sites and from resource-procurement sites and features. This topic was also addressed indirectly through functional analyses of tools and food-processing and storage facilities. The methods of procurement were more difficult to evaluate, particularly in the case of resources, such as agave, that could be either cultivated or collected from wild populations (Huckell 1993).

The study of settlement types and functions pertains to the third research issue of human-land relationships. As expected, CCP sites did not include the full range of settlement types represented in Tonto Basin. Nevertheless, in the concluding chapter of this report, we examine settlements in the project area and their physiographic associations as clues to the larger pattern of human-land relationships. For this purpose, we compare CCP data with evidence derived from previous archaeological projects and site files maintained by TNF for the three Tonto Basin localities that the CCP impinges upon.

Classic Period Settlement and Subsistence Patterns

Patterns of mobility are not well established for this time period, particularly during the early Classic period. However, more complex models for strategies of exploiting the environment have been suggested for the Classic period in central Arizona. The examination of the procurement of resources—that is, redistribution versus direct procurement—is another aspect of this theme that is especially germane to this time period. Rice (ed. 1985, 1990a) suggested the development of upland-lowland economic interaction networks that involved the redistribution of agricultural and natural food resources and were controlled by managerial elites. Others have suggested more economic independence between upland and lowland settlements and rural and "urban" settlements (Ciolek-Torrello, Whittlesey, and Welch 1994; Germick and Crary 1990).

At the onset of the project, we expected that the potential for addressing these issues for this time period was especially high, given that several well-preserved Classic period habitation sites were present in the project area and an even larger body of data is available from previous projects in the vicinity (Ciolek-Torrello, ed. 1987; Clark and Vint, eds. 2000a; Elson and Craig 1992b). In Chapter 5, the same types of subsistence data as described for the pre-Classic period are used to address subsistence and settlement issues for this later period.

The much greater diversity of settlement types evident during the Classic period only enhanced our ability to investigate issues related to this theme. The relation of site types and functions to their environmental setting together with similar data from previous excavations (see Van West et al. 2000) contributed valuable information regarding human-land relationships at this time. In the concluding chapter to this report, we compare the Hardt Creek and Cottonwood Creek localities in terms of wild-plant versus domesticated-plant plant use, occupational intensity and seasonality of use, period(s) of most intensive occupation, sizes and types of settlements, and the locations of settlements in relation to arable land and water sources. We also examine domestic organization evident in CCP sites in an attempt to identify the nature and size of resident social groups as well as residential patterns relating to mobility and sedentism.

Demography

The primary research issues under this theme were regional population growth and decline, aggregation and dispersion across the landscape, population movements, ethnicity, and questions concerning health, such as diseases, epidemics, nutrition, and diet. The issue related to health ordinarily is addressed with data derived from skeletal populations. Although human remains were recovered, the stricture against destructive analysis limited the extent to which human remains can contribute to this research theme. Important information about health, however, was obtained directly from nondestructive analyses of human remains, primarily teeth (see Volume 2, Chapter 9), and indirectly from subsistence data.

Change in population size has received increasing attention, particularly as it pertains to arguments about changing sociopolitical organization and the development of organizational complexity. This issue has been approached from widely divergent perspectives. SRI has focused on agricultural productivity and carrying capacity, modeling variables such as maize production, climatic variability, technology, and land-use systems (cf. Van West and Altschul 1994), whereas DAI has adhered more closely to archaeological data by estimating the size and numbers of settlements during different periods of occupation (Craig et al. 1992; Doelle 2000; Doelle et al. 1992). Others have focused on estimating the productivity of irrigation systems and the size of Classic period populations (Waters 1998; Wood et al. 1992). The results have been surprisingly similar and have led to a great reduction in estimates of the maximum size of the Classic period population in the region (cf. Wood 1989). These various approaches have been combined using estimates of carrying capacity together with population estimates derived from archaeological data to gain a better understanding of changing demographic patterns (Ciolek-Torrello 1998; Van West and Altschul 1998). Dating habitation features and sites in the project area and in adjacent areas using data from previous investigations and the TNF site atlas made it possible to estimate the size and distribution of population during at least the pre-Classic and Classic period in this part of Tonto Basin. The study of domestic organization also provides insights into the growth and decline of individual settlements.

Ethnicity and participation in different sociopolitical-ideological systems of populations have been at the center of debate since the beginning of research in the region. For many years, the majority of archaeologists considered Tonto Basin to be part of the periphery of Hohokam culture, which was centered in the Phoenix Basin (Lincoln 2000; Wood 1985; Wood and McAllister 1980), and was well integrated into the Hohokam regional system (Wilcox 1979) until the Classic period (Doyel 1976b, 1978; Effland and Macnider 1991; Wood and McAllister 1980). More recently, others have argued for a breakdown of this pattern during the Sedentary period (Ciolek-Torrello 1987b; Elson et al. 1992). The ethnic affiliation of the Classic period Salado culture has been an even more contentious issue (Doyel and Haury 1976). Rice (1990a) suggested that the Salado represent the descendants of the Colonial period Hohokam settlers who adapted to local upland conditions. By contrast, Wood (2000) suggests that Tonto Basin and other areas of central Arizona were populated by indigenous people representing the Central Arizona Tradition, who were influenced by the Hohokam. Still others maintain that the Salado represent an ethnically diverse, Mogollon- or Sinagua-affiliated culture that has been heavily influenced by Hohokam culture (Ciolek-Torrello 1987c; Haas 1971; Hohmann 1992; Pilles 1976; Whittlesey and Reid 1982; Whittlesey et al. 2000). The latter view has received support from architectural differences and other changes in material culture that suggest an influx of Puebloan people in the early Classic period (Clark 1995a, 1995b, 1997; Elson et al. 2000:176–177; Gregory 1995:169; Stark et al. 1995:361–368; Whittlesey et al. 2000:253–254). Further support is provided by bioarchaeological investigations from the RPM excavations, which indicate that Tonto Basin populations were genetically mixed and that Roosevelt phase populations were genetically closer to the Sinagua and Western Anasazi (Ravesloot and Regan 2000:72). Interestingly, these data also suggested that later Gila phase people were more closely related to the Hohokam of southern Arizona, whereas Western Pueblo populations from Grasshopper and Point of Pines were only distantly Related to Tonto Basin populations. By contrast, more recent bioarchaeological investigations using the large Roosevelt phase mortuary population from the TCAP sites suggests that the early Classic period populations of the Tonto arm were more closely related to the Grasshopper and Point of Pines populations (Lincoln-Babb 2001:352).

In his introduction to the 2000 Salado volume, Dean (2000:13) attempts to resolve these divergent and contradictory views:

> … migration appears to have played a large role in the prehistory of Tonto Basin. The first major immigration appears to have involved Hohokam colonists who established communities at several places in the Basin beginning around 700. The second major influx occurred between 1150 and 1350 when Anasazi immigrants from the Colorado Plateau apparently took up residence in established communities on the Salt Arm. Unlike the Hohokam, who moved in community-sized groups, the Anasazi appear to have moved in smaller groups such as households. It was hoped that morphological attributes of human teeth recovered by the Roosevelt Archaeology Project would illuminate the genetic affiliations of Tonto Basin populations and perhaps even identify immigrants' points of origin… Analyses of dental attributes were inconclusive, however, and the genetic sources of these people remain unresolved.

Wood (2000), however, seriously questions the role of the Anasazi in the settlement of Tonto Basin, whereas Whittlesey et al. (2000) argue that it was Anasazi-influenced Mogollon people who migrated into Tonto Basin.

Architectural styles, material culture, and the disposal of deceased individuals provide important insights into the extent of possible Hohokam, Mogollon, or Anasazi immigration and participation in the sociopolitical and ideological systems associated with these different cultures, and whether such migration or contact varied over time and space within the project area. The existence of organizational complexity, especially in the Classic period, is another aspect of sociopolitical organization that has been prominent in Tonto Basin research (Hohmann 1992; Rice 1990a). The extensive mortuary data collected by CCP are especially important in addressing these various research issues.

Demographic issues pertinent to the Classic period also relate to the development of intercommunity organizational systems, the geographic expansion of settlement, changes in regional interactions, and the relationship between agricultural intensification and the growth and distribution of population. It remains unclear when population peaked in the Classic period (compare Wood 1992; Ciolek-Torrello, Whittlesey, and Welch 1994; Doelle 2000), or if all portions of the region experienced similar demographic patterns. The Classic period also witnessed the development of much greater variation in site size and function than in previous periods. The most distinctive aspect of this divergence was the construction of large settlement complexes surrounding platform mounds and large pueblos. Some have attributed these changes to the development of hierarchically organized socioeconomic and political systems (Rice, ed. 1985, 1990a; Wood 1989). Others (Ciolek-Torrello and Whittlesey 1994; Whittlesey and Ciolek-Torrello 1992) argue that the individual settlements that making up these Classic period complexes were short-lived and few were contemporaneously occupied. Based on the RPM, Rice (2000) has stepped back from his earlier assertions regarding the formation of managerial elites in the Classic period and has suggested platform mounds were cult centers that were part of less complex segmentary organizations. All of the CCP sites are very small residential or resource processing sites. The VIV Ruin, however, does represent one of the large site complexes. A study of local settlements in the vicinity of the CCP (see Chapter 8) can provide insights into demographic and organizational changes in Tonto Basin.

Exchange, Trade, and Commerce

We expected to be able to address two research issues with CCP data under this theme. One concerned the nature or degree of interaction of pre-Classic and Classic period cultures in the project area with surrounding areas. The second involved economic specialization. We were interested in the degree of interaction with the Hohokam core area was and whether such interaction varied in time and space within the project area. Hohokam Buff ware ceramic vessels and ritual items such as palettes, censers, and figurines commonly reflect interaction with the Hohokam, whereas white wares, polychrome ceramics, and intrusive red wares suggest exchange with Mogollon and Anasazi regions. Decorated pottery (Doyel 1980; Haury 1976; Simon and Jacobs 2000), palettes, stone censers, and projectile points are also commodities that have been proposed to have been made by craft specialists. Additional information regarding this issue was provided by the investigation of raw materials used to manufacture craft products. Previous research suggested that ceramic sourcing was the most efficacious source of information relating to this theme. In this study, we used ceramic petrography to determine the origin and distribution of ceramic vessels recovered from CCP sites (see Volume 2, Chapter 3).

Perhaps the closest tie to the overarching theme of subsistence is specialization in food production or extraction of wild-food resources. Some studies suggest that pre-Classic period populations emphasized the production of cotton, presumably as a "cash crop" for exchange (Van West and Altschul 1998). Other studies suggest that agave and possibly other wild resources were exploited by some upland communities for exchange with groups living in lower elevations (Elson and Craig 1992a; Neily 1990; Vanderpot 2009). Plant remains from processing and storage areas in habitation sites provided the most consistent clues to plant use. The analysis of specialized plant-processing tools such as tabular knives, in combination with archaeobotanical techniques such as phytolith, oxalate, and protein residue analyses, also provide important insights into these issues. Unfortunately, we found an insufficient sample of appropriate artifacts from good contexts to use these techniques.

Other Research Issues

Although it is not among the 10 major research themes identified by TNF, chronology has been an overriding concern in desert archaeology since its beginnings (Dean 1991:61), and addressing chronological issues is fundamental to addressing the primary research topics. Despite the extraordinary amount of research conducted in Tonto Basin over the last 20 years, major aspects of the regional chronology remain poorly known. Several factors are responsible for the large gaps in our understanding of Tonto Basin chronology. Large numbers of chronometric samples have only become available in recent times, and certain periods and phases still remain poorly dated despite recent efforts. Although there have been a number of attempts to synthesize the new data (Ciolek-Torrello, Whittlesey, and Deaver 1994; Doyel 1976a; Elson 1996), much more chronometric data has accumulated since these syntheses, particularly from some of the time periods that were poorly known.

For the most part, the Tonto Basin chronology continues to be based on extrapolation from the Phoenix Basin Hohokam chronology and is supported primarily by ceramic cross-dating and seriation of imported ceramics. This problem is exacerbated by the absence in Tonto Basin of an indigenous decorated ceramic tradition until the late Classic period and the preponderance of plain ware in most ceramic collections. Dating sites by surface ceramic data alone, especially relying on exogenous decorated wares, is fraught with pitfalls. A related issue is the possible retention of ceramic types in the peripheral regions beyond their range in the core area (Green 1989:1,054). Whereas creative approaches to the problem, such as Lerner's (1986) plain ware seriation, have proved helpful, they cannot substitute for chronometric data.

One of the most poorly documented and, perhaps, most contentious chronological issues in Tonto Basin prehistory is the transition from the pre-Classic to the Classic period. In perhaps its greatest departure from the Phoenix Basin chronology, recent syntheses have identified two intermediate phases—the Ash Creek and Miami phases—during this transition. Since many of the CCP sites and features date to this transitional time period, CCP data provided an excellent opportunity (when combined with similar data from the TCAP and other recently excavated sites) to address the chronology of this transitional time period. The Roosevelt phase is another period in the prehistory of Tonto Basin that has been the subject of recent discussion with a beginning temporal boundary that fluctuates dramatically depending upon the length of the Miami phase, or whether analysts use the Miami phase at all. For example, in his original conception of the Miami phase, Doyel (1976a:249) placed it between A.D. 1150 and 1200. In the most recent reformulation, the Miami-Roosevelt phase boundary is placed somewhere between A.D. 1250 and 1270 (Elson 1996:Table 1). Similarly, the end date for the Roosevelt phase and beginning of the following Gila phase also remains uncertain. In the original Gladwinian chronology (Gladwin and Gladwin 1934), the Roosevelt phase was terminated around A.D. 1300. In the most recent revision, the end date is placed somewhere between A.D. 1320 and 1350. Chronological data from CCP sites and other recent studies can also be used to obtain a better understanding of the chronology of the later phases of the Classic period.

A Note on Site Designations

All of the project sites carry multiple designations. These include registration numbers conforming to systems managed by TNF and ASM, as well as project-specific recording systems used by the various institutions and CRM firms that have conducted work in the area. Moreover, sites are often given nonnumerical names to simplify narrative descriptions. This can result in confusion, especially when referring to sites already described in the literature. As a means of reducing this confusion, we use the following conventions in this report.

Most sites are described by a composite number incorporating both the TNF and ASM designations. All of the CCP sites are located in the Tonto Basin Ranger District of TNF, which is designated AR-03-12-06. The project area lies in two site-survey quads used by ASM—AZ U:3 and AZ 0:15. For the sake of brevity, the "ASM/TNF" suffix is not used for site designations in this report, although the ASM quad numbers are retained in the section headings and the initial reference to any given site in order to distinguish between the two quads. In other words, in section headings and the initial reference to a site in any chapter, a composite number that includes the complete ASM designation followed by the site-specific TNF identifier is used—for example, "AZ U:3:404/2011." For named sites, the name precedes the number in the initial mention and section headings; only the name is used in subsequent references— for example, "the Vegas Ruin (AZ U:3:405/2012)," and then "Vegas Ruin." Subsequent text references to unnamed sites include only the site-specific number—for example, "Site 404/2011." For the title and body of tables and for figure captions, named sites are identified by the name and the site-specific number (e.g., Vegas Ruin [405/2012]); for unnamed sites, we use only the site-specific number (e.g., "Site 404/2011"). A concordance of the designations for the CCP sites is presented in Table 1.

Organization of the Volume

Chronological issues are addressed in the first two chapters following this introduction. In Chapter 2, Robert Heckman presents an overview of the ceramic chronology for the CCP sites, assessing the age of each site based on associated ceramics. In Chapter 3, William Deaver and Stacey Lengyel reassess Tonto Basin chronology and phase systematics using archaeomagnetic, archaeological, and ceramic data from the CCP sites and 14 other recent data recovery projects in Tonto Basin and adjacent areas. In accordance with the CCP data, the focus of Deaver and Lengyel's analysis is the pre-Classic to Classic transition and the early Classic period. Appendix A provides a glossary of archaeomagnetic terms and Appendix B contains the chronological data.

The research issues that guided the CCP prehistoric research topics are addressed in part with data from the excavations described in Volume 1 and in analyses of specific material classes in Volume 2. These research issues, however, are the focus of the remaining chapters in this volume. In Chapter 4, Mr. Heckman presents the results of an innovative and detailed analysis of the function of vessels recovered primarily from CCP mortuary contexts. Although this study is another analysis of a specific material class like those in Volume 2, it is included in this volume because it is not one of the basic analyses that is usually included in material-culture studies. Heckman's study of vessel function—the range and relative frequencies of different types of food processing, serving, and storage vessels—contributes to our understanding of research issues such sedentism and subsistence activities. Issues relating to subsistence are more directly addressed in the following chapter by Robert Wegener and Karen Adams. Here they synthesize CCP archaeobotanical and faunal data and place them within a regional context to assess issues such as agricultural dependence and the relative importance of hunting activities in the project area.

The following two chapters focus on one of the most important data sets—mortuary data—recovered by the CCP. Detailed analyses of the bioarchaeological data were previously presented in Volume 2, Chapters 8 and 9. The chapters in this volume explore broader research issues, such as biological affiliation, demographic structure (age and sex), and health with observations obtained directly from the study of human remains. We also address issues pertaining to demography and social organization by focusing on cultural patterns relating to mortuary treatment. In Chapter 6, Chris Loendorf considers the issue of economic, social, and political power in prehistoric Tonto Basin society from the stand point of the method of interment of individuals and the types and quantities of burial accompaniments. Appendix C provides the comparative mortuary data for the CCP. In Chapter 7, using essentially the same data, Whittlesey and Klucas take a radically different approach that focuses on demographic issues such as social identity and ethnicity. Furthermore, Loendorf limits his study to a comparison of CCP and RPM data, whereas Whittlesey and Klucas take a much broader perspective that places CCP data within a regional context. Together, these two studies are not presented as alternative approaches to mortuary analysis. Rather, they should be viewed as attempts to address entirely different research issues with a similar data set.

In the final chapter, we summarize the results of the CCP and provide a final synthesis of the various data sets and individual studies presented in the three volumes. We synthesize the various chronometric data and assess the age of CCP sites and features. We integrate Wegener and Adams' study of subsistence data with indirect evidence to make a final statement on subsistence and related economic activities, agricultural dependency, and sedentism in the CCP area and how they may have changed. We summarize data on local settlement patterns and domestic organization to address other issues pertaining to settlement and demography. We also summarize the results of the mortuary analyses. Finally, we address issues relating to trade, economy, and commerce with CCP data. We conclude with an evaluation of the CCP results.

CHAPTER 2

Ceramic Dating and the Cottonwood Creek Project Sites

Robert A. Heckman

In this chapter, I present a brief discussion of ceramic dating to provide a temporal anchor for the CCP sites. Although some sites represent the remains of multicomponent occupations, I do not attempt to "tease out" the internal occupational sequence(s). To do so would exceed the temporal resolution available through ceramic dating and would require the adoption of several assumptions concerning how ceramics recovered from the fill of a feature relate to the use of that feature. Instead, I provide time spans that bracket the potential occupation of a given site or component.

Temporally Diagnostic Wares and Types

Well-dated ceramic types commonly found in central and northern Arizona are reported in association with Tonto Basin sites (Christenson 1995; Ciolek-Torrello, Whittlesey, and Deaver 1994; Clark and Vint 2000; Vint 2000a; Whittlesey 1994; Wood 1987). Most of the temporally diagnostic ceramics found in Tonto Basin appear to represent imported wares from. Fortunately, most of the northern white ware types are associated with tree-ring dates. This has enabled researchers to develop date ranges that roughly correspond to a calendrical period during which the ceramic type was manufactured. Conversely, the painted pottery from the southern areas, namely Hohokam Buff Ware, is not securely dated using independent means. In the Hohokam area, a single painted ceramic type is coterminous with cultural phases and their associated date ranges. For example, Sacaton Red-on-buff is the only painted pottery type defined within the Sacaton phase, which has an accepted date range of ca. A.D. 950–1150. Conversely, in the northern Southwest, several ceramic types co-occur in ceramic collections from a single phase. For example, within the Cibola White Ware series, Snowflake Black-on-white (ca. A.D. 1040–1300) and Reserve Black-on-white (ca. A.D. 1025–1300) have overlapping date ranges, and it is common to find both ceramic types within a collection.

Researchers use various techniques applied to temporally diagnostic ceramic collections to arrive at a date range for a given occupation. Various methods of statistical seriation are the most popular (see Blinman 1988; Christenson 1994, 1995; Vint 2000a). I use the "simple graph method" or "visual bracketing" (Heidke 1995; South 1977; Vint 2000a). This method consists of grouping and tallying all the date spans represented by temporally diagnostic types. A subjective visual assessment comparing the date ranges and relative frequencies provides a temporal bracket for the occupation under investigation.

I use the simple graphical method for several reasons. First, the small sample size and low frequencies of the various types that are present violate the basic assumptions and criteria of most of the methods. For example, the mean-ceramic-dating method developed by South (1977) for historical-period sites along the eastern seaboard and applied to prehistoric southwestern sites by Christenson (1994, 1995) requires that several assumptions be met. These include (1) breakage and deposition begin shortly after a type is produced, (2) types of all ages are broken and deposited at the site during its occupation, (3) the discard and breakage rates of types are essentially proportional to their frequency of use, (4) the maximum date for an assemblage is determined by low frequencies of late types, and (5) the use of a ceramic type is always reflected by a unimodal frequency curve (see Goetze and Mills 1993:103; South 1977:203–206; Vint 2000a:48). Arguably, most, if not all, of these assumptions are either unverifiable or violated by the ceramic collection under investigation here.

Only five CCP sites have temporally diagnostic ceramic types that have an accepted and published date range

(Table 4). Consequently, only those five sites are considered here. Next, I compiled the date ranges for diagnostic types (sherds and vessels) recovered from the five CCP sites used in this study (Table 5). The ceramic wares are ordered by frequency (see Table 5). The date ranges derive from previous research and, in most cases, represent the most recent studies that present a calendrical date range for specific types. In some cases, researchers disagreed on the dates or independently provided conflicting dates. For example, Christenson (1995) began the Cibola White Ware type Reserve Black-on-white at A.D. 1025 and extended the type's production range to A.D. 1300. Conversely, Goetze and Mills (1993) and Reid, Montgomery, et al. (1995) suggested that the production of Reserve Black-on-white began around A.D. 1100 and ended around A.D. 1200. In such cases, I chose the most inclusive path. Therefore, the date range presented here for Reserve Black-on-white is A.D. 1025–1300 (see Table 5). Further, the types placed in the either/or categories do not represent transitional types, but rather represent typological ambiguities that could not be assigned to a mutually exclusive typological category. I followed the same inclusive method for date ranges for either/or categories. I used the minimum and maximum date from the two types represented. For example, the category Reserve or Tularosa Black-on-white uses a minimum date from Reserve (A.D. 1025) and the maximum date of A.D. 1300, which is shared by both types (see Table 5).

Dating the CCP Sites Using the Simple Graph Method

The total number of temporally diagnostic sherds and vessels is only 341. This constitutes approximately 1 percent of the entire ceramic collection. In this section, I present date ranges for the five CCP sites used in this study.

AZ O:15:41/583 and AZ U:3:408/2015, despite yielding extremely low numbers of ceramics (9 and 19 sherds, respectively), contain diagnostic ceramics that largely pre-date A.D. 1150. The temporally diagnostic ceramics from these two sites are dominated by Hohokam Buff Ware (Tables 6 and 7). At the coarsest level, the ceramics reflect an approximately 200–300-year time frame for the occupations. I graphed the temporally diagnostic ceramics using the midpoint date for each of the ranges (Figure 13). Despite the small numbers, I suggest that the primary occupation of these sites, as reflected in the temporally diagnostic ceramics, dated to sometime in the eleventh century A.D.

The Rock Jaw site (AZ U:3:407/2014) reflects a ceramic signature that suggests a slightly later occupation than Sites 41/583 and 408/2015. The date ranges suggest a post–A.D. 1050 date. The low number of diagnostic types recovered from the Rock Jaw site (Table 8) provide only a hint at the basinwide trend of white ware replacing Hohokam Buff Ware as the dominant painted pottery during the late eleventh and twelfth centuries A.D. (Vint 2000a; Wallace 1995). Examining the graphed midpoint dates reinforces a post-A.D. 1050 date for the occupation (Figure 14). I suggest that the occupation of the Rock Jaw site occurred between approximately A.D. 1050 and 1175.

The last two sites are the Vegas Ruin (AZ U:3:405/2012) and the Crane site (AZ U:3:410/2017). Close examination and comparison of the diagnostic types recovered reveals the strong similarities between the two sites (Tables 9 and 10). It is not surprising that these similarities are mirrored in other aspects of material culture (see Volume 2). The plotted midpoint dates provides a comparison of the two sites (Figure 15). The primary occupation of these two sites appears to correspond to the period within the late twelfth century and into the thirteenth century. The relatively small numbers of earlier sherds likely reflect a less intensive use of these two sites than the later occupations.

The midpoint dates of the sherds (from domestic contexts) compared to those of the vessels recovered from mortuary contexts at the Vegas Ruin shows the similarities between these two contexts (Figure 16). The greater number of diagnostic mortuary vessels at the Vegas Ruin corresponds well with the bulk of the sherd material recovered from the site (see Figure 16). Only two temporally diagnostic vessels were recovered from mortuary contexts from the Crane site (Figure 17). Like the Vegas Ruin vessels, the Crane site vessels also correspond temporally with the median dates derived from the sherd data (see Figure 17).

Summary

The five CCP sites used in this study are all habitation sites. The two sites described as limited-activity areas (Sites 41/583 and 408/2015) are simply components of larger habitation sites that were not investigated during the CCP (see Volume 1). Therefore, the artifacts recovered likely reflect a narrower range of activities than those recovered from the heart of the intensely occupied farmsteads represented by the Vegas Ruin and Crane site. The Rock Jaw site represents a less intensive occupation of what appears to be a smaller farmstead.

I plotted the date ranges for the diagnostic ceramic types from the five sites together (Figure 18). The bars on the graph are equal to the proportion of ceramics from that site with that particular date range. For example, at the Crane site, the single Padre Black-on-white and the three Walnut Black-on-white sherds have the same date range (A.D. 1100–1250) and represent approximately 6 percent of the diagnostic ceramics. These types are represented by a single bar on the graph. I superimposed the archaeological phases over the graph to show how the date ranges for the types are not mutually exclusive with the cultural phases (see Figure 18).

All five sites have a considerable degree of temporal overlap of date ranges for the diagnostic ceramic types (see Figure 18). The more abundant and later date ranges of some of the ceramics at Vegas Ruin and the Crane site suggests a later occupation, likely sometime between A.D. 1150 and 1300. Conversely, the earlier date ranges at Sites 41/583 and 408/2015 suggest minimal overlap with the later occupations and likely date to between A.D. 975 and 1100 (see Figure 18). Finally, the date ranges represented at the Rock Jaw site suggest an occupation dating between A.D. 1050 and 1175.

Table 4. Counts of Temporally Diagnostic Ceramics from the CCP Sites

Site	Temporally Diagnostic Ceramics		Total Painted Ceramics	
	n	%[a]	n	%
41/583	9	9.9	91	9.1
103/2061	—	—	—	—
404/2011	—	—	—	—
Vegas Ruin (405/2012)	235	42.8	549	55.0
406/2013	—	—	13	1.3
Rock Jaw (407/2014)	11	22.0	50	5.0
408/2015	19	16.2	117	11.7
409/2016	—	—	—	—
Crane (410/2017)	67	37.4	179	17.9
Total	341	34.1	999	100

Note: Includes sherds and vessels.
[a] Percentage of total painted ceramics.

Table 5. Date Ranges and Reference for Diagnostic Sherds and Vessels for All CCP Sites

Ceramic Ware and Type	Date Ranges (A.D.)		n	Percent of Total	References
	Minimum	Maximum			
Little Colorado White Ware					
St. Joseph Black-on-white	825	1150	3	0.9	Hays-Gilpin and van Hartesveldt 1998
Holbrook Black-on-white	1050	1150	4	1.2	Douglass 1987; Goetze and Mills 1993
Holbrook Black-on-white, Style A	1050	1150	2	0.6	Douglass 1987; Goetze and Mills 1993
Holbrook Black-on-white, Style B	1050	1150	11	3.2	Douglass 1987; Goetze and Mills 1993
Holbrook or Walnut Black-on-white	1050	1250	42	12.3	
Padre Black-on-white	1100	1250	6	1.8	Douglass 1987; Goetze and Mills 1993
Walnut Black-on-white	1100	1250	37	10.9	
Walnut (Style A) Black-on-white	1100	1250	17	5.0	Douglass 1987; Goetze and Mills 1993
Walnut (Style B) Black-on-white	1200	1250	5	1.5	Douglass 1987; Goetze and Mills 1993
Leupp Black-on-white	1200	1250	6	1.8	
Subtotal, Little Colorado White Ware			133	39.0	
Cibola White Ware					
Red Mesa Black-on-white	950	1100	8	2.3	Christenson 1995; Goetze and Mills 1993
Red Mesa or Puerco Black-on-white	950	1150	1	0.3	
Puerco Black-on-white	1025	1150	3	0.9	Christenson 1995; Goetze and Mills 1993
Puerco or Reserve Black-on-white	1025	1300	5	1.5	Christenson 1995; Goetze and Mills 1993
Gallup or Reserve Black-on-white	1000	1300	2	0.6	Christenson 1995; Goetze and Mills 1993
Snowflake Black-on-white	1040	1300	44	12.9	Goetze and Mills 1993; Reid, Montgomery, et al. 1995
Reserve Black-on-white	1025	1300	10	2.9	Christenson 1995; Goetze and Mills 1993
Reserve or Tularosa Black-on-white	1025	1300	3	0.9	Christenson 1995; Goetze and Mills 1993; Reid, Montgomery, et al. 1995

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Ceramic Ware and Type	Date Ranges (A.D.)		n	Percent of Total	References
	Minimum	Maximum			
Tularosa Black-on-white	1175	1300	8	2.3	Goetze and Mills 1993; Reid, Montgomery, et al. 1995
Tularosa or Pinedale Black-on-white	1175	1300	1	0.3	
Pinedale Black-on-white	1270	1320	2	0.6	Goetze and Mills 1993; Reid, Montgomery, et al. 1995
Roosevelt Black-on-white	1275	1325	37	10.9	Zedeño 1992
Indeterminate Patayan II Cibola White Ware	950	1150	1	0.3	Hays-Gilpin and van Hartesveldt 1998
Indeterminate Patayan III Cibola White Ware	1150	1300	2	0.6	Hays-Gilpin and van Hartesveldt 1998
Subtotal, Cibola White Ware			127	37.2	
Hohokam Buff Ware					
Santa Cruz Red-on-buff	850	950	2	0.6	Dean 1991; Wallace 1995
Santa Cruz or Sacaton Red-on-buff	850	1100	10	2.9	
Sacaton Red-on-buff	950	1150	14	4.1	Dean 1991; Wallace 1995
Casa Grande Red-on-buff	1150	1300	1	0.3	Dean 1991
Subtotal, Hohokam Buff Ware			27	7.9	
Roosevelt Red Ware					
Pinto Black-on-red	1250	1350	7	2.1	Breternitz 1966; Montgomery and Reid 1990
Pinto Polychrome	1270	1350	3	0.9	Breternitz 1966; Montgomery and Reid 1990
Pinto Polychrome, salmon variety	1270	1350	3	0.9	
Pinto or Gila Polychrome	1270	1350	2	0.6	
Gila Polychrome	1320	1450	1	0.3	Breternitz 1966; Montgomery and Reid 1990
Subtotal, Roosevelt Red Ware			16	4.7	
Salado Red Ware					
Salado White-on-red	1200	1450	15	4.4	Wood 1987
Tusayan White Ware					
Kana'a Black-on-white	850	1050	5	1.5	Downum 1988; Goetze and Mills 1993
Black Mesa Black-on-white	950	1160	1	0.3	Downum 1988; Goetze and Mills 1993
Black Mesa or Sosi Black-on-white	950	1180	1	0.3	
Sosi Black-on-white	1050	1180	1	0.3	Downum 1988; Goetze and Mills 1993
Indeterminate Patayan II black-on-white	950	1150	1	0.3	Hays-Gilpin and van Hartesveldt 1998
Subtotal, Tusayan White Ware			9	2.6	
Reserve Series					
McDonald Painted Corrugated	1200	1330	8	2.3	Breternitz 1966; Whittlesey 1994
Showlow Black-on-red, Wingate Style	1000	1200	1	0.3	Carlson 1970
Showlow Black-on-red, Holbrook Style	1000	1150	2	0.6	Carlson 1970
Showlow Black-on-red, Puerco Style	1000	1200	1	0.3	Carlson 1970
Subtotal, Reserve Series			12	3.5	
San Juan Red Ware					
Deadmans Black-on-red	800	1000	2	0.6	Hays-Gilpin and van Hartesveldt 1998
Total			341	100	

Table 6. Temporally Diagnostic Sherds from Site 41/583

Ceramic Ware and Type	Date Range (A.D.) Minimum	Date Range (A.D.) Maximum	n	Percent of Total
Hohokam Buff Ware				
Santa Cruz Red-on-buff	850	950	1	11.1
Santa Cruz or Sacaton	850	1100	3	33.3
Sacaton Red-on-buff	950	1150	2	22.2
Tusayan White Ware				
Black Mesa Black-on-white	950	1160	1	11.1
Black Mesa or Sosi	950	1180	1	11.1
Indeterminate Patayan II black-on-white	950	1150	1	11.1
Total			9	100

Table 7. Temporally Diagnostic Sherds from Site 408/2015

Ceramic Ware and Type	Date Range (A.D.) Minimum	Date Range (A.D.) Maximum	n	Percent of Total
Little Colorado White Ware				
Holbrook Black-on-white, Style B	1050	1150	1	5.3
Holbrook or Walnut	1050	1250	1	5.3
Cibola White Ware				
Red Mesa Black-on-white	950	1100	1	5.3
Hohokam Buff Ware				
Santa Cruz Red-on-buff	850	950	1	5.3
Santa Cruz or Sacaton	850	1100	5	26.3
Sacaton Red-on-buff	950	1150	8	42.1
Tusayan White Ware				
Kana'a Black-on-white	850	1050	1	5.3
San Juan Red Ware				
Deadmans Black-on-red	800	1000	1	5.3
Total			19	100

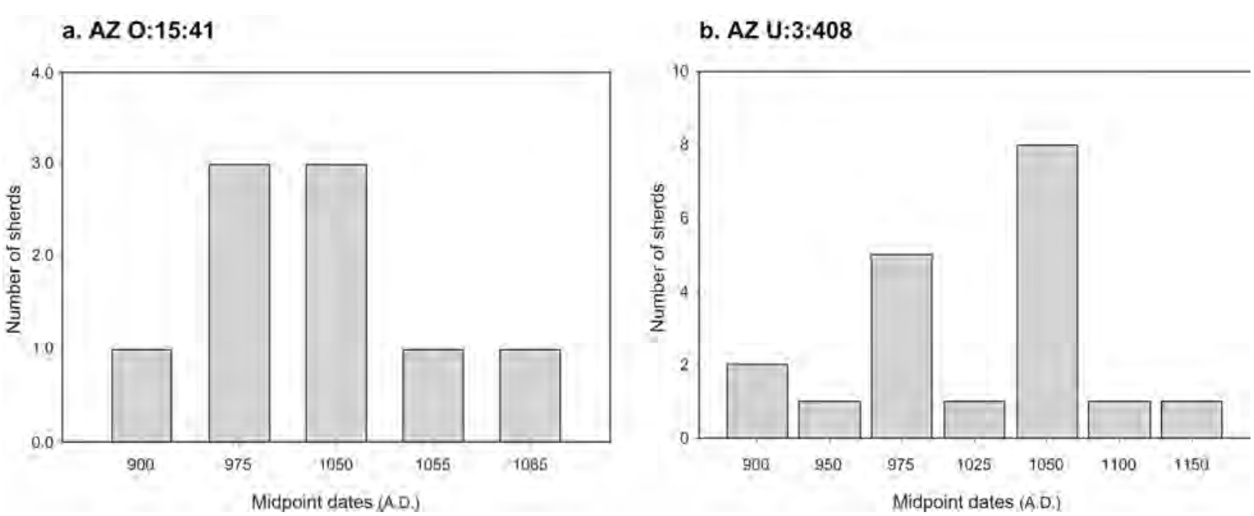

Figure 13. Grouped midpoint dates for temporally diagnostic sherds from (*a*) Site 41/583 and (*b*) Site 408/2015. Note: The x-axis represents midpoint dates if present, not a time scale.

Table 8. Temporally Diagnostic Sherds from the Rock Jaw Site (407/2014)

Ceramic Ware and Type	Date Range (A.D.)		n	Percent of Total
	Minimum	Maximum		
Little Colorado White Ware				
Holbrook Black-on-white	1050	1150	2	18.2
Holbrook Black-on-white, Style B	1050	1150	1	9.1
Holbrook or Walnut	1050	1250	4	36.4
Hohokam Buff Ware				
Santa Cruz or Sacaton	850	1100	1	9.1
Sacaton Red-on-buff	950	1150	2	18.2
Tusayan White Ware				
Sosi Black-on-white	1050	1180	1	9.1
Total			11	100

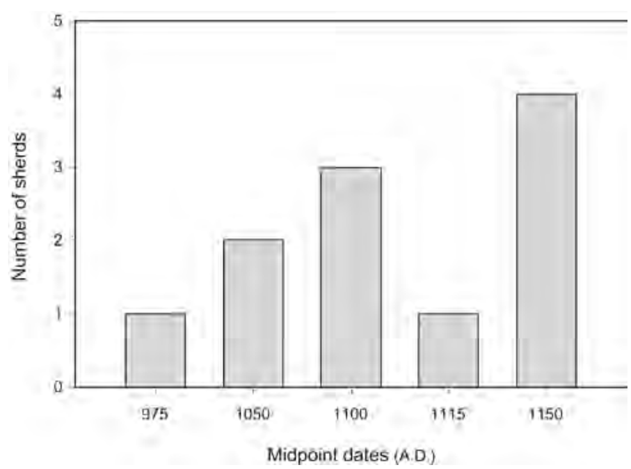

Figure 14. Grouped midpoint dates for temporally diagnostic sherds from the Rock Jaw site (407/2014). Note: The x-axis represents midpoint dates if present, not a time scale.

Table 9. Temporally Diagnostic Sherds and Vessels from the Vegas Ruin (405/2012)

Ceramic Ware and Type	Date Range (A.D.)		n	Percent of Total
	Minimum	Maximum		
Little Colorado White Ware				
St. Joseph Black-on-white	825	1150	2	0.9
Holbrook Black-on-white	1050	1150	2	0.9
Holbrook Black-on-white, Style B	1050	1150	9	3.8
Holbrook or Walnut Black-on-white	1050	1250	30	12.8
Padre Black-on-white	1100	1250	5	2.1
Walnut Black-on-white	1100	1250	34	14.5
Walnut (Style A) Black-on-white	1100	1250	17	7.2
Walnut (Style B) Black-on-white	1200	1250	3	1.3
Leupp Black-on-white	1200	1250	6	2.6
Cibola White Ware				
Red Mesa Black-on-white	950	1100	6	2.6
Red Mesa or Puerco	950	1150	1	0.4
Puerco Black-on-white	1025	1150	2	0.9
Puerco or Reserve Black-on-white	1025	1300	5	2.1
Gallup or Reserve Black-on-white	1000	1300	2	0.9
Snowflake Black-on-white	1040	1300	33	14.0
Reserve Black-on-white	1025	1300	8	3.4
Reserve or Tularosa Black-on-white	1025	1300	3	1.3
Tularosa Black-on-white	1175	1300	7	3.0
Pinedale Black-on-white	1270	1320	1	0.4
Roosevelt Black-on-white	1275	1325	24	10.2
Indeterminate Patayan II Cibola White	950	1150	1	0.4
Indeterminate Patayan III Cibola White	1150	1300	2	0.9
Hohokam Buff Ware				
Santa Cruz or Sacaton Red-on-buff	850	1100	1	0.4
Roosevelt Red Ware				
Pinto Black-on-red	1250	1350	3	1.3
Salado Red Ware				
Salado White-on-red	1200	1450	14	6.0
Tusayan White Ware				
Kana'a Black-on-white	850	1050	3	1.3
Reserve Series				
McDonald Painted Corrugated	1200	1330	6	2.6
Showlow or Roosevelt				
Showlow Black-on-red, Wingate Style	1000	1200	1	0.4
Showlow Black-on-red, Holbrook Style	1000	1150	2	0.9
Showlow Black-on-red, Puerco Style	1000	1200	1	0.4
San Juan Red Ware				
Deadmans Black-on-red	800	1000	1	0.4
Total			235	100

Table 10. Temporally Diagnostic Sherds from the Crane Site (410/2017)

Ceramic Ware and Type	Date Range (A.D.)		n	Percent of Total
	Minimum	Maximum		
Little Colorado White Ware				
St. Joseph Black-on-white	825	1150	1	1.5
Holbrook Black-on-white, Style A	1050	1150	2	3.0
Holbrook or Walnut Black-on-white	1050	1250	7	10.4
Padre Black-on-white	1100	1250	1	1.5
Walnut Black-on-white	1100	1250	3	4.5
Walnut (Style B) Black-on-white	1200	1250	2	3.0
Cibola White Ware				
Red Mesa Black-on-white	950	1100	1	1.5
Puerco Black-on-white	1025	1150	1	1.5
Snowflake Black-on-white	1040	1300	11	16.4
Reserve Black-on-white	1025	1300	2	3.0
Tularosa Black-on-white	1175	1300	1	1.5
Tularosa or Pinedale	1175	1300	1	1.5
Pinedale Black-on-white	1270	1320	1	1.5
Roosevelt Black-on-white	1275	1325	13	19.4
Hohokam Buff Ware				
Sacaton Red-on-buff	950	1150	2	3.0
Casa Grande Red-on-buff	1150	1300	1	1.5
Roosevelt Red Ware				
Pinto Black-on-red	1250	1350	4	6.0
Pinto Polychrome	1270	1350	3	4.5
Pinto Polychrome, salmon variety	1270	1350	3	4.5
Pinto or Gila Polychrome	1270	1350	2	3.0
Gila Polychrome	1320	1450	1	1.5
Salado Red Ware				
Salado White-on-red	1200	1450	1	1.5
Tusayan White Ware				
Kana'a Black-on-white	850	1050	1	1.5
Reserve Series				
McDonald Painted Corrugated	1200	1330	2	3.0
Total			67	100

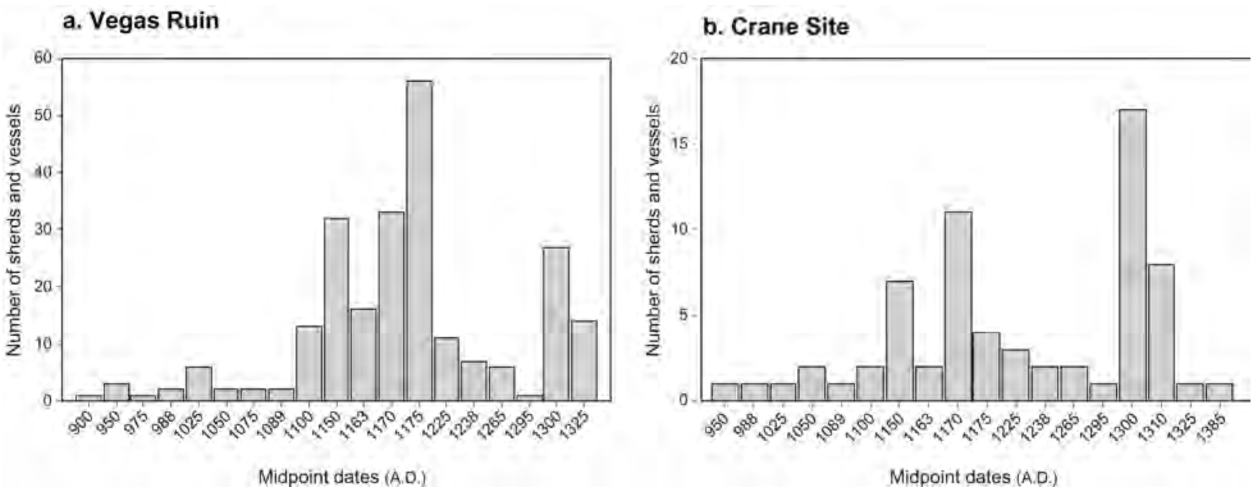

Figure 15. Grouped midpoint dates for temporally diagnostic sherds and vessels from (*a*) the Vegas Ruin (405/2012) and (*b*) the Crane site (410/2017). Note: The x-axis represents midpoint dates if present, not a time scale.

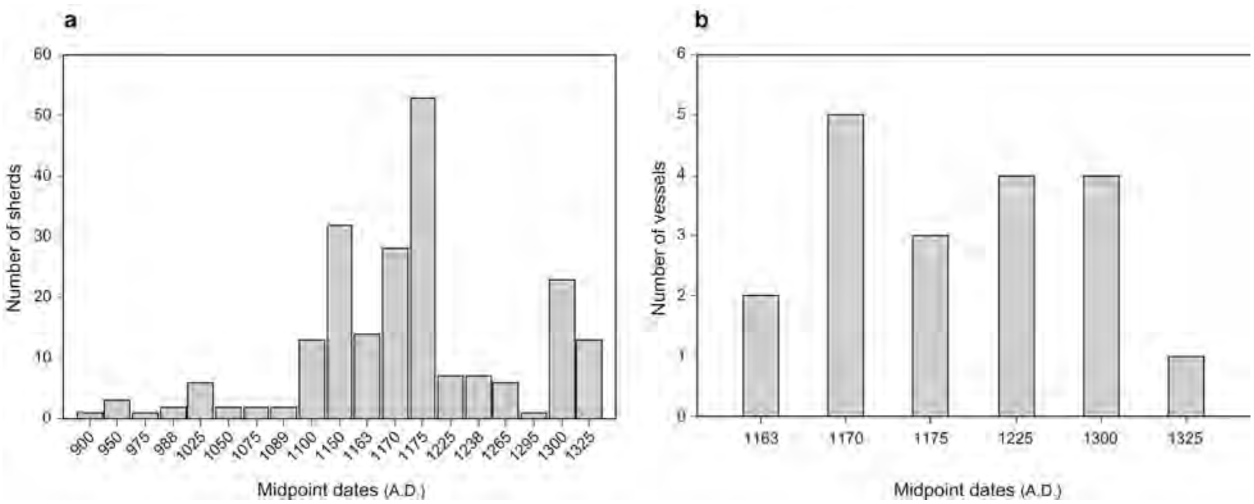

Figure 16. Grouped midpoint dates comparing temporally diagnostic ceramics from the Vegas Ruin (405/2012): (*a*) sherds and (*b*) vessels. Note: The x-axis represents midpoint dates if present, not a time scale.

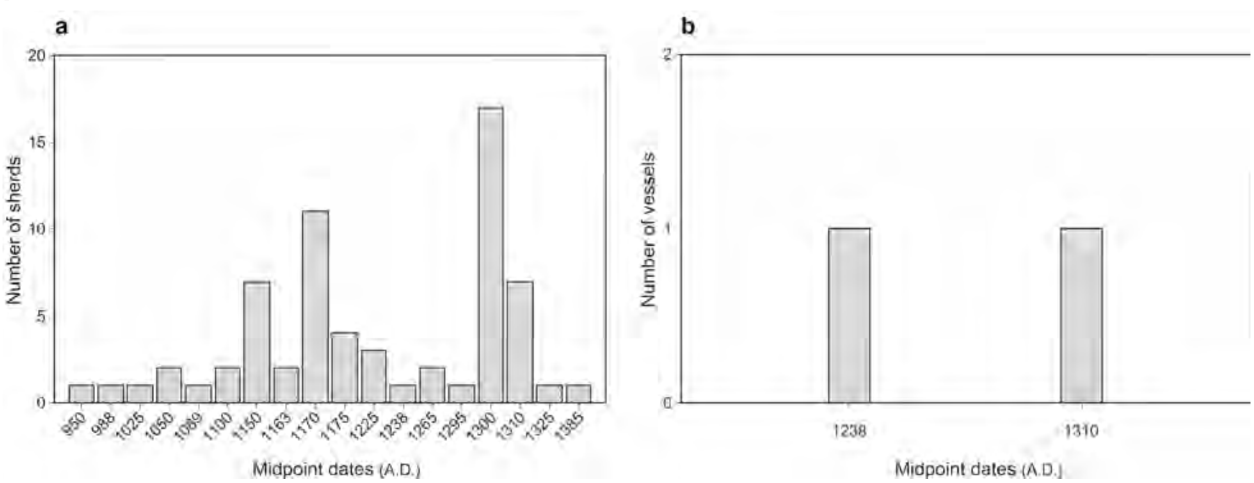

Figure 17. Grouped midpoint dates comparing temporally diagnostic ceramics from the Crane site (410/2017): (*a*) sherds and (*b*) vessels. Note: The x-axis represents midpoint dates if present, not a time scale.

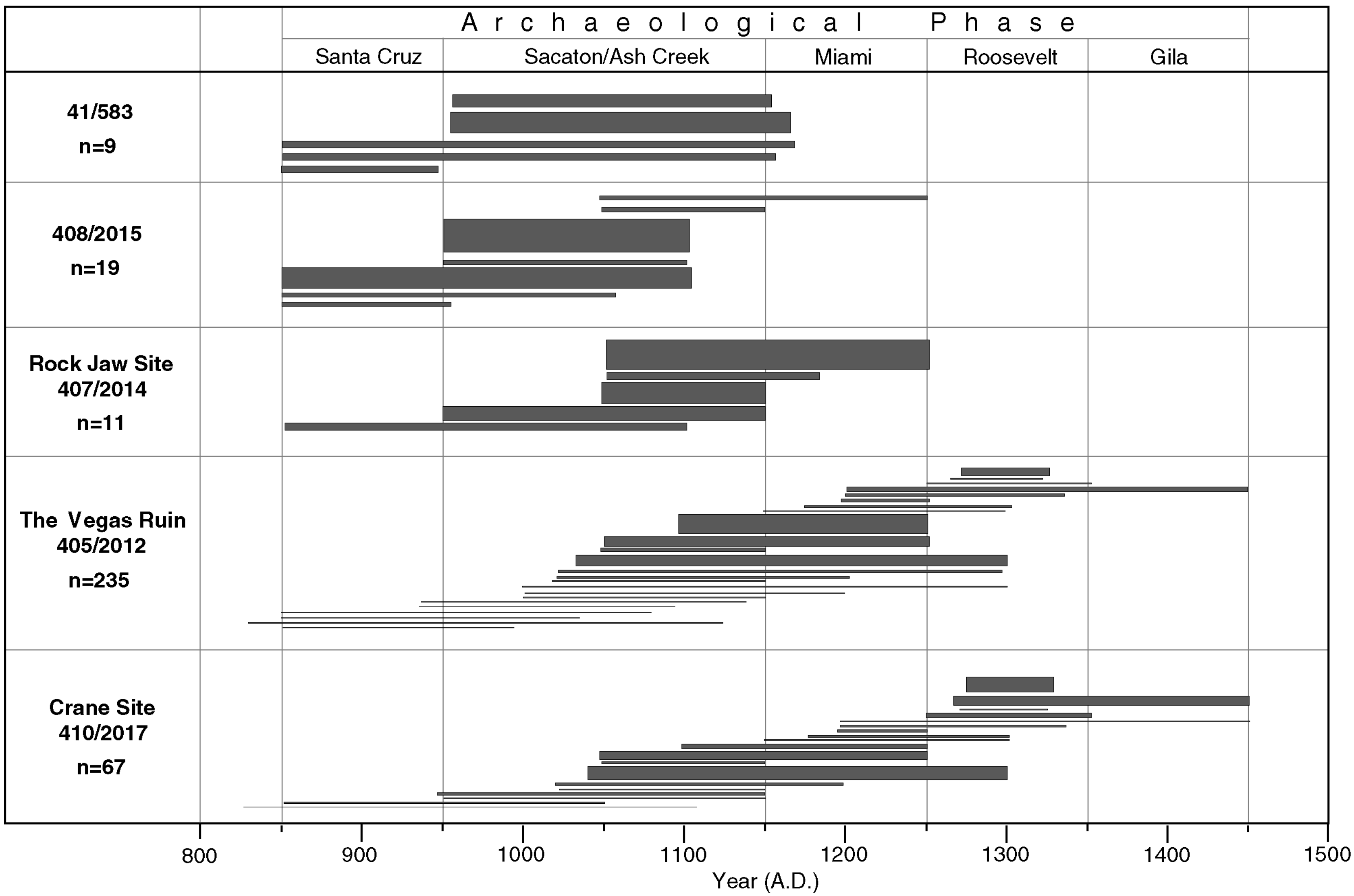

Figure 18. Temporally diagnostic painted sherds and vessels grouped by date ranges from the five CCP sites. Note: Bar widths equal percent by site.

CHAPTER 3

A Chronometric Framework for Evaluating Culture Change in Tonto Basin

William Deaver and Stacey Lengyel

For well over a century, archaeologists have been interested in identifying, defining, and explaining the variability in archaeological cultures that has been observed in Tonto Basin and adjoining areas (e.g., Bandelier 1892; Doyel 1978; Haury 1932; Hohmann and Kelley 1988; Lange and Germick 1992; Pilles 1976). Throughout this time, archaeologists have evoked concepts such as population movement and social identity to explain much of this variability (e.g., Doyel 1978; Gladwin and Gladwin 1935; Rice 1998a; Stark et al. 1998; Whittlesey 1994). However, they continue to debate the way in which these concepts articulate with the archaeological record to explain the larger sociocultural processes that shaped Tonto Basin prehistory. Much of this debate surrounds the timing and nature of regional changes in archaeological cultures that occurred between ca. A.D. 1000 and 1400 and the extent to which these changes reflected shifting cultural affiliations, changes in exchange networks, and/or admixing of diverse cultural groups (e.g., Ciolek-Torrello 1987c; Clark 2001; Rice, ed. 1998; Stark et al. 1998; Whittlesey and Reid 1982). In particular, the "transitional" period between A.D. 1100 and 1250 has remained stubbornly difficult to define in terms of the social processes that were operating in Tonto Basin populations (Clark and Vint, eds. 2000b:22; Elson 1996:134–136; Mitchell 2001:144–146; Rice 1998b:16–18).

In this chapter, we provide a chronometrically based time line of changes in specific cultural practices in Tonto Basin and the Globe Highlands region between roughly A.D. 1000 and 1400, with a focus on the period of transition between the pre-Classic (A.D. 750–1150) and Classic (A.D. 1150–1400) periods. To examine these changes within a robust regional framework, we incorporated data from 15 projects conducted in this region over the past two decades (Table 11). Our study area encompasses five physiographic areas within the Tonto Basin region: (1) Salt River arm of the eastern Tonto Basin, located between Pinal Creek to the east and Tonto Creek to the west; (2) the Tonto Creek arm of the Lower Tonto Basin, located between Gun Creek to the north and its confluence with the Salt River to the south; (3) the Upper Tonto Basin, including Rye Creek and the portion of Tonto Creek located between Hells Gate to the north and Hardt Creek to the south; (4) the mountainous zone surrounding Roosevelt Lake, including the eastern slopes of the Mazatzal Mountains and southern and western slopes of the Sierra Ancha; and (5) the Globe Highlands, defined as the mountainous zone surrounding Globe-Miami, including the Pinal Mountains and eastern foothills of the Superstition Mountains, and extending north along Pinal Creek to its confluence with the Salt River (see Figure 2).

Our goal is to use chronometric data, specifically archaeomagnetic data, to explore the timing of the widespread cultural changes that mark the pre-Classic–Classic period transition (ca. A.D. 1100–1250) in this region. We focused on this period because many of the features from the CCP date to this time and can provide additional insight into this poorly understood period. In particular, we were concerned with elucidating the regional trends in architectural style and ceramic types during this time in an effort to explore the timing and relevance of the Ash Creek and Miami phases, which encompass this transitional period. We are not unique in this endeavor, as several other studies undertaken in the past two decades have also focused on these trends to delineate the larger patterns of cultural change in this region (e.g., Clark 1995a, 2001; Elson, Gregory, et al. 1995; Mitchell 2001; Stark et al. 1995, 1998). In this analysis, however, we exploited the direct relationship between archaeomagnetic data and archaeological events to examine the temporal patterning exhibited by these archaeological materials. This study differs from previous attempts to use archaeomagnetism to delineate cultural patterns (e.g., Clark 1995a), because we examined the patterning of archaeomagnetic data from within

Table 11. Archaeological Projects Included in this Study

Project Name	Institution
AZ U:8:628	Archaeological Consulting Services
Ash Creek	Arizona State University
Carlota Data Recovery	SWCA
Cholla-Saguaro	Arizona State Museum
Mazatzal Rest Area	Archaeological Resource Services
Roosevelt Community Development	Desert Archaeology, Inc.
Roosevelt Platform Mound	Arizona State University
Roosevelt Rural Sites	Statistical Research, Inc.
SR188–Cottonwood Creek	Statistical Research, Inc.
SR87–Mazatzal Piedmont	Museum of Northern Arizona
SR87–Pine Creek	Archaeological Consulting Services
SR87–Rye Creek	Desert Archaeology, Inc.
SR87–Sycamore Creek	Statistical Research, Inc.
Tonto Creek Archaeological Project	Desert Archaeology, Inc.
Wheatfields	Archaeological Consulting Services

the rubric of archaeological knowledge. This allowed us to integrate knowledge about the archaeomagnetic technique with knowledge about Tonto Basin archaeological cultures to generate an alternative interpretation of regional prehistory.

Tonto Basin Phase Systematics Revisited

As many researchers have noted, the phase systematics currently used in Tonto Basin have been shaped, in part, by early ideas on the culture history of the region (Clark and Vint, eds. 2000b; Elson 1996; Klucas et al. 2009; Rice 1998b; Wood 2005). Although archaeological interest in Tonto Basin dates back to the late nineteenth century (e.g., Bandelier 1892), the first extensive surveys and excavations in the region were conducted by Gila Pueblo archaeologists in the 1930s (e.g., Gladwin and Gladwin 1930, 1934, 1935; Haury 1932). This research led to formal definitions of the Hohokam and Salado cultures and produced one of the most influential culture-history models for Tonto Basin (Gladwin and Gladwin 1935). Based on their findings in the region, the Gladwins proposed a culture-history sequence in which Tonto Basin and surrounding areas were settled initially by Hohokam groups from the Salt and Gila Basins during the Colonial period (ca. A.D. 750). These groups brought with them house-in-pit architecture, buff ware ceramics, and cremation mortuary practices and remained in the region through the end of the Colonial period (ca. A.D. 950). In the Gladwins' model, the region was abandoned after the Colonial period and lay vacant until roughly A.D. 1100, at which point a different cultural group, which they named the Salado, immigrated from the north and east. This later population brought black-on-white ceramics, masonry architecture, and extended-burial mortuary practices with them. The Gladwins' model of Tonto Basin culture history dominated archaeological research in the region until the 1970s and determined the structure of the ensuing phase systematics. Because they believed that the region was initially settled by Hohokam groups, they assumed that local phase systematics should follow the Phoenix Basin sequence. The sequences diverge at the inception of the Hohokam Classic period, at which point Salado phases were used in the Tonto Basin sequence.

Archaeological work in the 1970s called much of the Gladwins' model into question. In particular, Doyel's (1978) work in the Miami Wash area led him to identify archaeological components that spanned much of the occupational hiatus in the Gladwins' model. This included documentation of Sedentary period archaeological remains and indications of a mixed cultural pattern that he believed linked the later, platform-mound developments with earlier Hohokam-derived populations. Doyel termed this transitional manifestation the Miami phase and suggested that it reflected a continuous cultural development for Tonto Basin. Wood et al. (1981) defined a similar transitional phase for the Upper Tonto Basin that they called the Hardt phase. These and other researchers argued for cultural continuity throughout the region and viewed the Salado tradition as an indigenous development with influence from groups to the north (e.g., Doyel 1978:211–213; Hohmann and Kelley 1988:155).

The phase sequence was further modified in the 1990s as the result of numerous large-scale cultural resource management (CRM) projects conducted throughout the region.

The current sequence has been synthesized by Elson (Elson 1996; Elson and Gregory 1995) and reflects agreements reached in 1994 by active researchers from several CRM firms and government agencies (Elson 1996:120). The revised sequence includes the addition of the Early Ceramic and Pioneer periods to the beginning of the sequence, the insertion of the newly devised Ash Creek phase in the later half of the Sedentary period, and the reformulation of the Miami/Hardt phase as the beginning of the Classic period. For the purposes of this study, we are interested primarily in the Ash Creek and Miami/Hardt phases, which encompass the period of cultural transition from the pre-Classic to the Classic period.

As it is currently formulated, the Ash Creek phase is defined almost entirely by a noticeable drop in the frequency of Hohokam Buff Ware ceramics and an increase in the frequency of Cibola and Little Colorado White Ware ceramics at late pre-Classic period sites (Elson 1996). The phase was envisioned as reflecting regional cultural changes leading into the Classic period and therefore was inserted into the latter half of the Sedentary period, thereby truncating the Sacaton phase at roughly A.D. 1050 (but see Wood 2005 for a different treatment of the Sacaton and Ash Creek phases). Interpretations of the activities underlying the observed changes range from a local shift in the direction of trade from the south to the north to more drastic changes in the affinity of local populations from participation in the Hohokam regional system toward affiliation to and interaction with northern puebloan groups (Elson, Gregory, et al. 1995; Wood 2005). Overall, this phase is thought to encompass the changes that demarcated the end of the pre-Classic period in Tonto Basin at A.D. 1150.

With the addition of the Ash Creek phase to the sequence, the Miami phase was redefined to represent the second stage of the cultural transition from a Hohokam-oriented pattern to a newly emerging local pattern that blended elements from the Hohokam and from northern puebloan groups. Therefore, this phase marked the beginning of the Classic period in Tonto Basin, and it was characterized by significant changes in architecture, among other things. Surface structures appear during this time, along with mixed adobe and cobble wall construction (Elson 1996:134–137). For the most part, structures from this phase were constructed as adobe-walled pit rooms with or without cobble foundations in an architectural style with roots in the preceding period (Ciolek-Torrello 1998; Clark and Vint 2000; Elson and Craig 1992c).

The Fusion of Archaeomagnetic and Archaeological Knowledge

Over the last two decades, researchers have become increasingly interested in identifying evidence for social identity and population movement within the archaeological record of Tonto Basin in order to study larger sociocultural processes of change (e.g., Ciolek-Torrello, Whittlesey, and Welch 1994; Clark 2001; Reid 1998; Rice, ed. 1998; Whittlesey and Reid 1982, 2001; Whittlesey et al. 2000). To address these theoretical interests, however, researchers must be able to tie them to some aspect of the archaeological record. In recent years, this has involved an assessment of change within specific material-culture categories, such as architecture and ceramics (e.g., Clark 1995a, 2001; Mitchell 2001; Rice, ed. 1998; Stark et al. 1998). Thus, it would be helpful to have an accurate understanding of how the variability in these categories fluctuates through time. In this study, we will address this problem from the vantage of archaeomagnetic data. Our goal is to provide unique insights into the pattern of cultural change between the pre-Classic and Classic periods in Tonto Basin. To do this, we will use archaeomagnetic data to examine the temporal patterning of architecture and ceramics. (See Appendix A for a glossary of archaeomagnetic terms.)

We have selected the archaeomagnetic technique as our chronometric method of choice for several reasons. First and most importantly, there is a direct link between the archaeomagnetic event we date and the archaeological event that we wish to date (Dean 1978). The archaeomagnetic technique gives us the location of the magnetic field at the time that a particular archaeological feature was heated and cooled. Because we are dating the use of the feature, there is a direct association of the resulting date to the archaeological event of interest. Second, because the object being dated is the feature itself, rather than associated artifacts, the randomizing effects of many postdepositional formation processes have less of an impact. Finally, by focusing exclusively on archaeomagnetism, we can ensure that we are dating the same type of event—abandonment—throughout the Tonto Basin sequence, rather than several different types of events that would then need to be assimilated into a coherent picture of prehistoric change.

This analysis is guided by two specific sets of prior knowledge: archaeomagnetic and archaeological knowledge. First, we use our current understanding of the behavior of geomagnetic secular variation to identify potential analytical problems that could arise from our reliance on archaeomagnetic data. For instance, we know from more than 30 years of archaeomagnetic research in the Southwest that the path of geomagnetic secular variation tends to curve and loop back on itself (Figure 19). By chance, two of the loops in secular variation occurred during important cultural transitions in the Southwest. The first took place between ca. A.D. 700 and 900, which correlates with the first half of the pre-Classic period. During this time, the path of secular variation reached a latitudinal minimum at ca. A.D. 840, and it was characterized by an easterly trend prior to this point and a westerly trend after it. The second loop in secular variation occurred between A.D. 1050 and 1200, encompassing the transition between

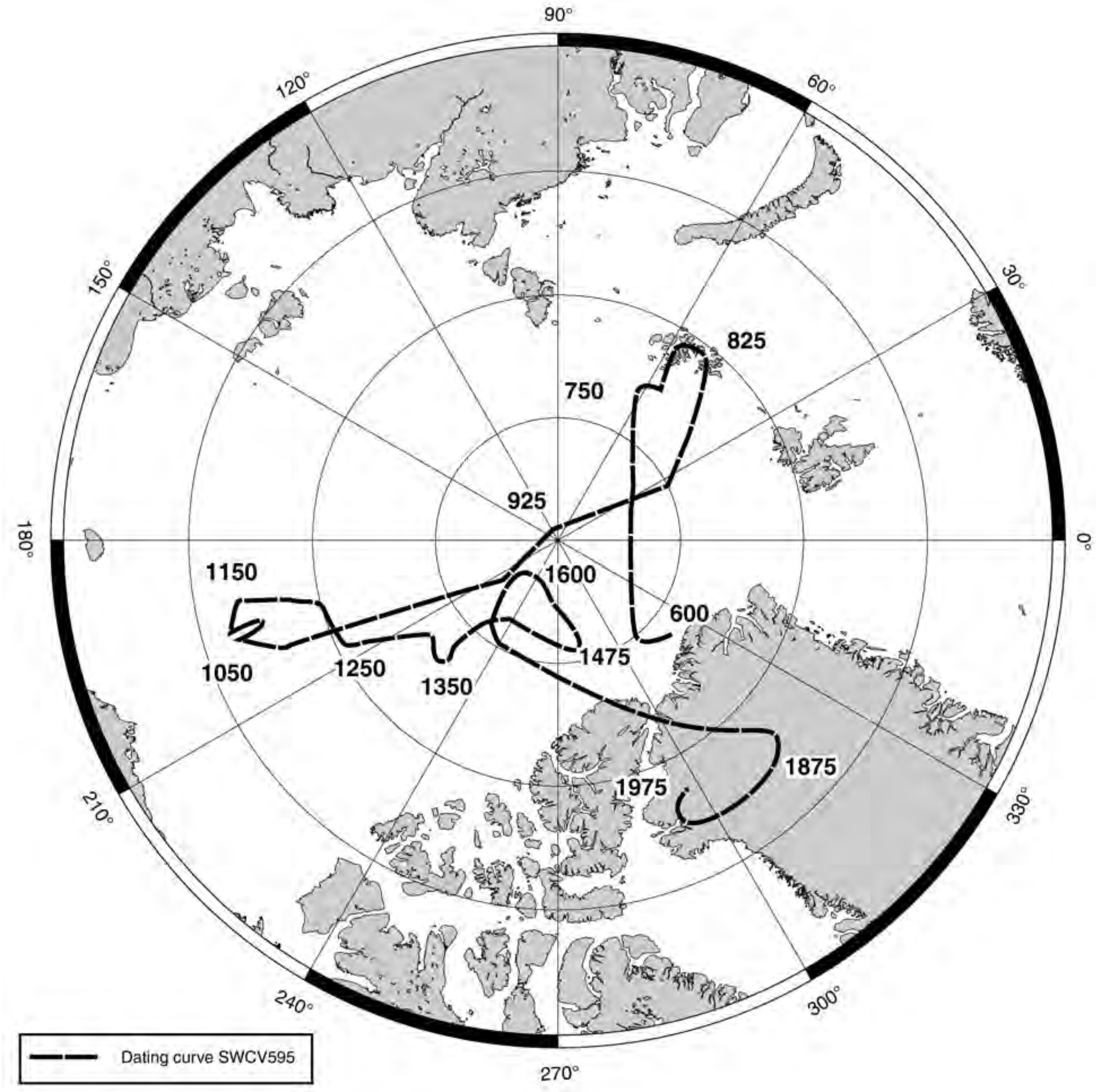

Figure 19. The dating curve SWCV595.

the pre-Classic and Classic periods. During this time, the path of secular variation reached a latitudinal minimum at approximately A.D. 1100, and it was characterized by a westerly trend prior to this point and an easterly trend after it. This second loop has been particularly problematic for Tonto Basin archaeologists, because it coincides with one of the most poorly dated periods in Tonto Basin prehistory. The transition between the pre-Classic and Classic periods in Tonto Basin has been tentatively placed at A.D. 1150 (Elson 1996), and archaeologists working in this region would like to discern whether specific contexts date before or after this point (e.g., Clark and Vint, eds. 2000b:25–32; Elson 1995; Rice 1998b:19). However, the tightness of the secular variation loop during this time typically results in ambiguous date ranges that make this distinction difficult.

We can resolve this temporal ambiguity by using our present understanding of trends in Tonto Basin architecture and ceramics to structure the archaeomagnetic analysis. For instance, it is well accepted that aboveground masonry structures are characteristic of the Classic period and that they typically, if not always, postdate pit structures (Clark 1995a). Likewise, significant changes in ceramics have been documented between the pre-Classic and Classic periods, such as a decrease in buff ware ceramics, an increase in white ware ceramics, and the local manufacture of corrugated ceramics (Clark 2001; Whittlesey 1994). Because these changes in material culture roughly coincide with the documented change in secular variation from a westerly to easterly direction, we can use the archaeological patterns to divide the archaeomagnetic data set into pre– and post–A.D. 1100 subsets. For example, the pre-Classic period corresponds temporally with the pre–A.D. 1100 pattern of westerly secular variation, and therefore, we would expect changes in the pre-Classic period material culture to correlate with changes in the location of the magnetic pole from east to west. Conversely, the Classic period coincides with the post–A.D. 1100 pattern of easterly secular variation pattern, and so changes in material culture should correlate with changes in the magnetic pole location from west to east. Although the pre-Classic period data set may actually extend to A.D. 1150, the locations of the A.D. 1100 and A.D. 1150 magnetic poles are close enough to each other that this should not affect our expectations.

This analysis differs from conventional archaeomagnetic studies in two important ways. First, we use the spatial distribution of archaeomagnetic data to characterize the temporal patterning of material culture, rather than relying on the calendar dates that are produced by comparing the archaeomagnetic data to a calibration curve. Second, we make the archaeological knowledge a prior expectation of the data in order to alleviate the problems introduced by the cyclical nature of secular variation. Conventionally, this archaeological knowledge is applied after the fact to select a pre– or post–A.D. 1100 date for the archaeological events in question. These are important distinctions that are revisited throughout this chapter in order to stress the fact that we have used archaeomagnetic data to resolve chronological patterns within larger archaeological constructs and not specifically as an independent dating method. Circularity is avoided, because we use archaeological evidence to divide the data set into the pre-Classic and Classic period subsets and then use the archaeomagnetic data to evaluate architectural and ceramic trends within the subsets. Archaeomagnetic data are not used to test the validity of the subsets; the analysis is conducted under the assumption that the division is correct (for a similar approach, see Deaver and Whittlesey 2004).

Archaeomagnetic Methods

Archaeomagnetism is the application of paleomagnetic methods and theory to archaeological problems (Tarling 1983). The principles of archaeomagnetism and its use in the Southwest have been well documented (DuBois 1975; Eighmy et al. 1980; Sternberg 1990; Sternberg and McGuire 1990) and need not be elaborated here; however, this discussion benefits from the review of some basic tenets. Briefly, archaeomagnetism depends on two related phenomena. First, the earth's magnetic field changes in direction and strength through time, which is known as secular variation. Secular variation is usually conceptualized as changes in the position of the north magnetic pole. Second, soils and sediments contain magnetic particles that can record the direction of the magnetic field under certain circumstances and, thus, provide records of past directions of the geomagnetic field. In the Southwest, we are primarily interested in the magnetic signals acquired by archaeological materials during heating. When these materials are heated above several hundred degrees centigrade, the ferromagnetic minerals become remagnetized parallel with the extant magnetic field. After cooling, this realignment is locked into place, unless and until the feature is reheated. Thus, the direction of magnetic remanence that is measured in the lab is related to the last time that the feature was heated to sufficiently high temperatures. This is usually conceptualized as the last use of the feature.

Archaeomagnetic dating is an interpretive process that uses archaeomagnetic data to address and clarify the temporal dimension of the archaeological record (Deaver 1988). This technique involves two interrelated, yet distinct, endeavors. The first involves determining the archaeomagnetic signal that is present in archaeological materials and then relating that to the geomagnetic field. This is accomplished by using collection procedures for paleomagnetic data and invoking a series of well-established geophysical principles (Irving 1964; Sternberg 1990; Tarling 1983). The data that are measured in archaeological materials reflect the strength and direction of the prevailing magnetic field that magnetized the materials. By convention, we represent this field as the location of its virtual geomagnetic north pole (VGP).

The second endeavor consists of applying the measured archaeomagnetic signal toward the resolution of archaeological dating issues. Each archaeomagnetic determination we obtain has an implicit temporal signature, in that it reflects the strength and direction of the prevailing magnetic field at the time that the magnetic signal was acquired. The goal of archaeomagnetic dating is to ascertain when this event occurred with respect to some measure of time. Usually, this consists of linking the acquisition event to the Christian calendar via a calibrated reference curve of secular variation. Alternatively, the event can be sequentially related to similar archaeological events by comparing its associated magnetic direction to other directions to assess contemporaneity.

Archaeomagnetic Calendrical Dating

Archaeomagnetic calendrical dates are determined by comparing archaeomagnetic-sample data of unknown age to calibrated reconstructions of secular variation. In the

Southwest, calendrical dates are usually produced through the visual or statistical methods (Sternberg and McGuire 1990). In the visual method, the sample VGP and associated oval of confidence are plotted against the reference curve to estimate the best-fit date range(s) for the sample. In the statistical approach, the undated sample VGP is statistically compared to each of the curve mean VGPs to test the null hypothesis that they are the same. The date range is then derived from those mean VGPs that are not statistically different from the sample VGP at the 5 percent significance level (Sternberg and McGuire 1990:126–127). The statistical method is usually preferred over the visual method, because it is objective and replicable; however, it can only be used to date samples against a statistically derived reference curve, such as SWCV595 (LaBelle and Eighmy 1997).

A third method has recently been proposed that combines aspects of both the statistical and visual methods (Deaver and Whittlesey 2004). This is a modified graphical-dating method that can be used to derive objectively replicable dates for curves such as WB2000 that lack some of the statistical parameters necessary for mathematical dating. This technique involves projecting each mean VGP orthogonally to the curve to determine the closest dated point on the curve. The date of the closest curve point is then assigned to the mean VGP as its graphical mean date. Finally, the uncertainty surrounding each graphical mean date is estimated by dividing the oval of confidence (α_{95}) of the mean VGP by the average annular rate of secular variation for the curve, which is 0.12°/year (Deaver and Whittlesey 2004:121). This technique is guided by the criteria that the distance between the mean VGP and the curve cannot exceed the sum of the uncertainty in the curve (about 1.8°) and the inherent uncertainty in the mean VGP (indicated by the α_{95} of the mean). Mean VGPs that exceed this distance are considered undatable through this method. Among the drawbacks of this method is that it fails to account for the imprecision in the dating curve or in the independent dates used to calibrate the curve, and it assumes a uniform rate of secular variation, which contradicts the documented secular variation record (e.g., Labelle and Eighmy 1997; Lengyel and Eighmy 2002).

Each of these three dating methods requires the use of a regional secular variation curve from which to derive the calendrical dates. The curve that is used most often in the Southwest is the dating curve SWCV595 (see Figure 19) (LaBelle and Eighmy 1997). Several researchers have identified problems that are inherent in portions of this curve, however, including the paucity of data used to construct certain segments and the compression of loop amplitude (Cox and Blinman 1999; Deaver and Whittlesey 2004; Eighmy et al. 1986; Lengyel et al. 1999; Lengyel and Eighmy 2002). Furthermore, although we are confident that SWCV595 has captured the overall pattern of secular variation in the Southwest for the past 1,400 years, we do not agree with some of the details of the curve. For instance, we do not believe that it accurately portrays the latitudinal minima for the ninth and twelfth centuries. We also are skeptical of the southward dip in secular variation exhibited at A.D. 1350. For these reasons, we have chosen to use two alternative curve segments that encompass the pre-Classic and Classic periods, respectively.

For the pre-Classic period contexts included in this analysis, we rely on the high-precision dating curve WB2000 (Figure 20) that Deaver developed for his analysis of the West Branch archaeomagnetic assemblage (Deaver and Whittlesey 2004). Because this curve ends at A.D. 1100, however, it cannot be used to date archaeomagnetic VGPs from Classic period features. For the purposes of this study, we have developed a tree-ring-calibrated curve segment for the period between A.D. 1125 and 1425 that can be used to date the Classic period features more accurately. This curve was constructed through the moving-window technique and is based on 43 tree-ring-dated VGPs with α_{95} values of less than 5.0° (Appendix B, Table B.1), found in existing archaeomagnetic databases from sites throughout the Southwest. Applying the principles of running averages, the moving-window technique mathematically generates a secular-variation curve from a set of data points. This technique leads naturally to a mathematical method for deriving archaeomagnetic dates (Sternberg and McGuire 1990:116-129). A 50-year averaging window moved at 50-year intervals was used to smooth this data set into a series of seven mean VGPs (Table 12; Figure 21).

We have chosen to use these secular variation curves to calibrate our analyses, rather than SWCV595, because we believe that they more accurately capture the pattern of secular variation during the time that is the focus of our analysis. Although the Classic period curve is based on a relatively small data set (n = 43), all of these VGPs have been independently dated through associated tree-ring samples. Comparatively, the A.D. 1100–1400 sections of SWCV595 are based on 60 VGPs that have been independently dated through associated tree-ring samples (n = 32), radiocarbon assays (n = 1), and ceramics or other associated archaeological information (n = 27). The biggest difference in shape between our tree-ring-dated curve and the two published curves occurs between A.D. 1325 and 1375. The SWCV595 data set indicates that secular variation dipped sharply to the south at A.D. 1350. However, this mean VGP is calculated from only seven data points (LaBelle and Eighmy 1995), two of which are statistically different from each of the other six data points included in this mean. The two aberrant data points were dated through cultural materials and plot closer to the A.D. 1250 mean VGP of SWCV595 than the other five data points. This suggests, subjectively, that the two samples may have been misdated, in which case they should not be included in the calculation of the A.D. 1350 mean VGP of SWCV595. If these two data points are excluded, the A.D. 1350 mean VGP would have a location of 83.8°N, 227.9°E, effectively removing the sharp southward dip in the curve and bringing it more into line with the shape of the tree-ring derived curve.

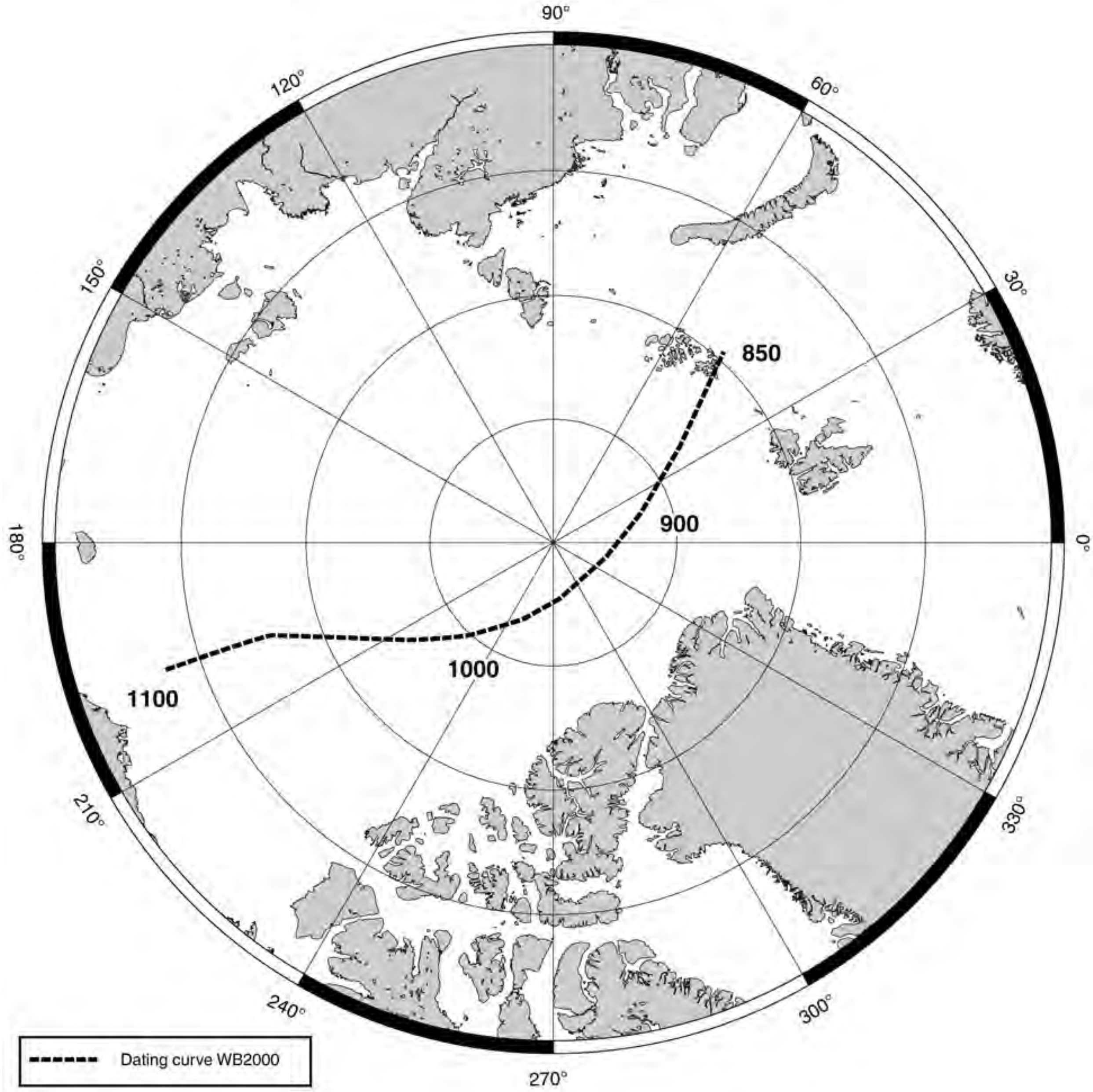

Figure 20. The dating curve WB2000.

Table 12. Mean VGP Data for the Tree-Ring Calibrated Dating Curve

Midpoint (A.D.)	Time 1 (A.D.)	Time 2 (A.D.)	Plat	Plong	k	α_{95}	n
1125	1100	1150	76.40	193.99	813.25	1.40	14
1175	1150	1200	78.20	192.96	316.85	3.77	6
1225	1200	1250	80.86	207.94	928.73	1.69	9
1275	1250	1300	81.84	203.88	433.66	1.46	23
1325	1300	1350	82.84	200.19	845.92	1.09	21
1375	1350	1400	84.29	206.90	1181.54	1.76	7
1425	1400	1450	85.16	210.59	2610.15	4.89	2

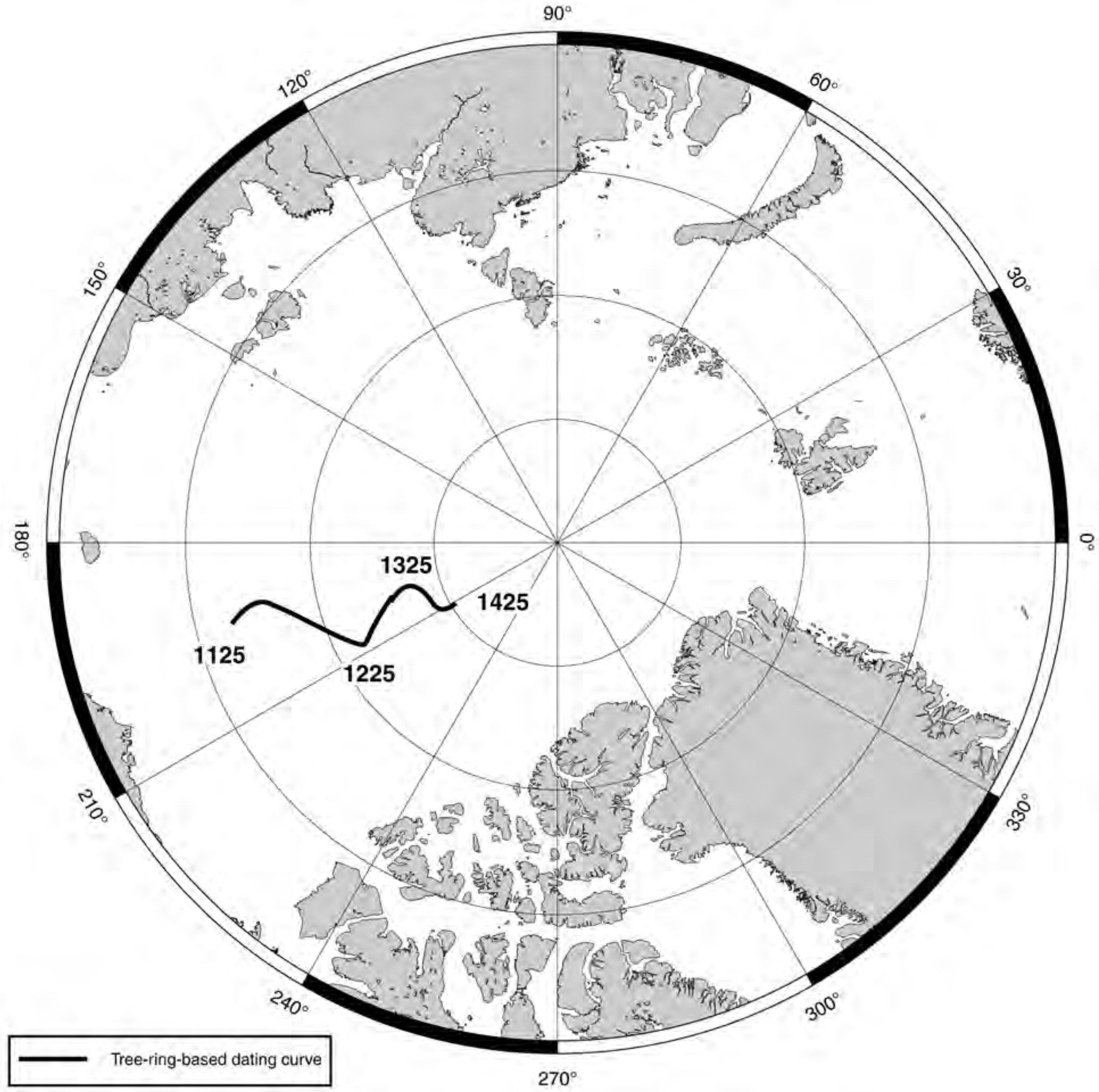

Figure 21. The tree-ring-calibrated dating curve.

Archaeomagnetic Contemporaneity

In this study, the spatial distribution of archaeomagnetic VGPs is used as a proxy for the temporal distribution of certain material-culture traits. This is based on the expectation that materials that were magnetized at the same time will have the same magnetic direction. Conversely, we expect that materials magnetized at different times will have dissimilar magnetic directions. Thus, comparison of the archaeomagnetic data from two archaeological features should allow us to deduce the relative age of the two contexts. This comparison is conducted through an analysis of archaeomagnetic contemporaneity (Deaver 1998; Deaver and Ciolek-Torrello 1995; Deaver and Murphy 1999; Lengyel 2004).

The technique that is used to assess archaeomagnetic contemporaneity (McFadden and Lowes 1981) is the same that is used to compare a sample VGP with the archaeomagnetic-dating curve (Sternberg and McGuire 1990). It involves a series of statistical tests that are used to evaluate the similarity between two archaeomagnetically determined VGPs. These calculations test the null hypothesis, at the 5 percent significance level, that the two VGPs are the same. If the probability of the F-statistic, F(p), is calculated to be less than .05, the null hypothesis is rejected, and the two samples are interpreted as noncontemporaneous. If, on the other hand, the computed probability is greater than or equal to .05, the null hypothesis cannot be rejected, and it is concluded that the directions may have been contemporary.

It should be noted that the cyclical nature of secular variation makes it possible for two temporally discrete samples to have similarly located VGPs. Thus, it is necessary to use other lines of archaeological data to determine a priori whether a contemporaneity test between two VGPs is appropriate. In this study, we rely on previous knowledge of Tonto Basin prehistory to establish guidelines for defining groups of VGPs that are not likely to produce false positives. In other words, we use archaeological material culture to separate pre-Classic period VGPs from similarly located Classic period VGPs (e.g., located near the A.D. 1250 crossover in secular variation) to avoid drawing an erroneous conclusion of contemporaneity. This is a crucial underpinning to this analysis, because we rely heavily on contemporaneity studies to identify groups of similarly located VGPs.

In theory, sets of sequential VGPs should delineate the path of secular variation. In practice, however, the directional scatter in VGP data sets makes it difficult to identify the secular variation signal immediately. This scatter can be segregated into the variability that parallels the path of secular variation and the variability that is perpendicular to this path. The former is attributable to secular variation and represents the pattern that we want to isolate. Much of the latter variability represents random noise that results from the ability of the archaeological material to record the magnetic signal and our capacity to measure that signal. Therefore, to compress this scatter and bring the outlying data closer to the path of secular variation, we used a data-reduction technique to calculate spatially pooled means from arrays of similarly located VGPs. Because our study focused on identifying chronological patterns within archaeological constructs, we were less concerned with the behavior of individual VGPs and conducted much of our analysis on the distribution of these pooled means.

To obtain the pooled means, we first subdivided the VGP data set into archaeologically defined subsets (e.g., based on specific material-culture attributes). Then, we used the pairwise tests of significance (McFadden and Lowes 1981:Equations 23 and 25) to develop a contemporaneity matrix for each subset by comparing each sample VGP to every other VGP in the subset. The resulting F(p) values provided us with a proxy measure for the relative distance between every possible VGP pairing in the subset. We then used these values to determine the array of potentially contemporary VGPs for each sample VGP in the subset. That is, we identified all of the VGPs that had a F(p) value of greater than or equal to .05 with respect to the same VGP. It should be noted that an individual sample VGP could, and often did, belong to multiple VGP arrays. Next, we weighted each VGP in an array by its respective precision estimate (k) and number of observations (n) and by its F(p) value within that array. Finally, we calculated a weighted, pooled mean (Sternberg and McGuire 1990:119–120) for each sample VGP from its array of contemporary VGPs. In a sense, this technique is similar to the methods used by Sternberg and McGuire (1990:119–120) for temporally smoothing sets of VGPs; however, we have modified the technique to fit our data set by replacing the temporal windows with spatial windows.

The pooled VGPs were temporally calibrated by averaging the independent dates associated with the VGPs in the respective arrays and then calculating the error associated with that average. To do this, we used the modified graphical dating technique (Deaver and Whittlesey 2004) described above to date each of the sample VGPs against the appropriate dating curve (i.e., WB2000 or the Classic period curve). Then, we used the method described by Ward and Wilson (1978) to calculate a pooled mean date for each VGP array. Finally, we estimated the standard error for each pooled date by calculating the 2σ standard deviation in the dates of the array's VGPs. From the range of dates encompassed by the various VGP arrays, we were able to estimate that each pre-Classic period array represents between 3 and 71 years of prehistory, with an average spread of 25 years, and each Classic period array represents between 4 and 165 years of prehistory, with an average spread of 87 years. These estimates were based on the range in mean dates that are represented by any one array without reference to the associated standard error. The difference between the pre-Classic and Classic period ranges stems from the faster rate of secular variation prior to A.D. 1100.

Temporal Trends in Architectural Data

The Tonto Basin archaeological record exhibits dramatic changes in domestic architectural styles between the pre-Classic and Classic periods. Typically, this change is conceptually juxtaposed between pre-Classic period subterranean structures and Classic period surface structures, with a third category of "transitional" structures that are thought to bridge this dichotomy. Although a number of different attributes have been used to track this transition (e.g., Ciolek-Torrello 1994b; Hohmann and Kelley 1988; Rice et al. 1998), we believe that the most-effective analyses have focused on changes in wall-construction materials and techniques (e.g., Clark 1995a, 2001; Shelley and Ciolek-Torrello 1994).

In a recent study, Clark (2001:58) used temporal data from a multitude of sources, including archaeomagnetic and tree-ring dates, stratigraphy, patterns of wall bonding and abutment (Riggs 2001), and diagnostic ceramics to seriate several different construction styles. He found that although there was considerable overlap in architectural styles, the normative use of distinct wall-construction techniques followed a temporally identifiable sequence. In this model (Clark 2001:60, Figure 4.17), post-reinforced adobe replaced packed earth, brush-and-pole wall construction sometime after A.D. 1100. Upright cobbles were added at intervals to the footers of post-reinforced adobe-walled structures in the early thirteenth century, and this became the normative type by the mid-thirteenth century. Finally, wall footers composed of several courses of unshaped cobbles within an adobe matrix (cobble-adobe-foundation walls) were widely adopted by the mid-thirteenth century and coexisted with cobble-footed post-reinforced adobe architecture through the end of the thirteenth century. During the early fourteenth century, cobble-adobe-foundation walls continued to be widely used in smaller settlements. At this time, cobble-reinforced-adobe walls became common in larger settlements, whereas true coursed masonry architecture was used in some settlements. These various architectural styles possibly remained in use into the fifteenth century, by which point the region essentially was abandoned (Rice 1998b).

Although Clark's model provides a good organizational framework within which to examine the temporal and spatial patterning of architectural changes in the study area, we believe it can be strengthened through a more robust chronometric analysis. For this study, we characterized the architectural data according to the four construction techniques identified by Clark (2001:60). Then we evaluated the validity of Clark's sequence through stratigraphic studies of domestic architecture and finally examined the archaeomagnetic VGP distributions within the construction type subsets.

Architectural Data

In order to generate a more complete picture of architectural patterning throughout the study area, we created a database that incorporated domestic architectural data from 15 projects undertaken within the Tonto Basin region (Table B.2). The database was limited to these 15 projects, because they represent the bulk of work undertaken in the region over the past 20 years, and we were able to access the archaeomagnetic VGP data they produced. Because our analysis focused on stratigraphic and archaeomagnetic data, we included three groups of structures in our data set. First, we included architectural data for all domestic structures excavated within the study area that had associated archaeomagnetic data. Next, we determined whether these structures were stratigraphically related to other structures that were not archaeomagnetically tested through superpositioning or intrusion, and added any of these structures to the database. Finally, we identified any other pairs of stratigraphically related structures, again through superpositioning or intrusion, and added those structures to the database.

Following the organizational framework outlined above, we have grouped the domestic architecture data into four categories: (1) pit structures, (2) post-reinforced adobe-walled structures, (3) cobble-footed, adobe-walled structures, and (4) coursed-masonry structures. For this study, we have defined pit structures as subterranean or semi-subterranean residential structures that have earthen and/or pole-and-brush walls and that lack any form of cobble construction. We included subterranean and semi-subterranean "true" pit houses and houses-in-pits in this category. True pit houses are those in which the house walls are constructed of packed native soil with some type of brush and mud superstructure. Houses-in-pits are those in which a freestanding pole-and-brush structure is constructed within a shallow, sloped pit.

The second category includes semi-subterranean structures built with post-reinforced puddled-adobe walls. These structures most often have an oval to subrectangular floor plan and are nearly identical to the pre-Classic period pit structures, except that puddled adobe replaces mud-covered brush and thatch as the primary wall-construction material. As with pit structures, this category includes freestanding structures built within shallow pits and structures that incorporate the pit walls as the base of the house walls. In the latter, the pit walls are typically lined with puddled adobe and the wall posts are located along the outside edge of the pit (e.g., Craig and Clark 1994:33). In some cases, the pit edge may also be surrounded by a single course of stone that may have served as a foundation for the upper walls (e.g., Craig 1992b:274–279).

The third category consists of subsurface and surface structures with rock-reinforced adobe walls. This is essentially Clark's (2001:60) cobble-footed adobe construction type, in which upright cobbles were placed at regular intervals around the base of the structure to help anchor the adobe wall footer. In most cases, wooden posts were placed between the cobbles to reinforce the adobe walls further. These structures may have had additional vertically oriented cobbles incorporated into upper parts of the walls to help stabilize sequential courses of adobe (Rice 1990b:10), although some preserved wall segments indicate that these upper cobbles were randomly placed (e.g., Craig and Clark 1994:150; Shelley and Ciolek-Torrello 1994:243–248). It should be noted that the main difference between this and the final category is that puddled adobe constitutes the primary building material used to construct category three walls.

Finally, the coursed-masonry structure category is used here to describe oval to rectangular subsurface and surface structures with stacked cobble walls. The stone used to build these walls were typically unmodified river cobbles, although flat tabular stones were also used (e.g., Ensor et al. 2003). In general, the walls were constructed by laying cobbles side by side or end to end to form horizontal courses and then setting those courses with a puddled adobe or clay mortar. Additionally, the walls may have had an adobe or clay plaster facing. In most cases in this sample, the coursed masonry was restricted to the lower part of the wall and consisted of at most 3–4 courses. These served as a footer or foundation for the upper portions, which were constructed of perishable materials, such as coursed adobe or adobe-plastered brush walls. In addition, this category includes walls constructed completely of stacked cobbles or tabular stone, as well as coursed-adobe walls that incorporate cobbles. Because we are focusing on wall-construction materials and techniques, we have chosen to include oval, semi-subterranean structures with stacked cobble foundation walls (i.e., masonry pit rooms) in this category (e.g., Clark et al. 2000:597–602; Craig and Clark 1994:120–126).

The architectural database contained data from a total of 241 domestic structures in the study area that could be classified as one of the four architectural categories. This database included 124 pit structures, 14 post-reinforced adobe walled structures, 23 cobble-footed adobe structures, and 80 coursed-masonry structures. Only 185 of these structures, however, dated to either the pre-Classic or Classic period and had at least one associated archaeomagnetic VGP with an α_{95} value of less than 5.0°. These included 94 pit structures, 13 post-reinforced adobe-walled structures, 17 cobble-footed adobe structures, and 61 coursed-masonry structures. The remaining 56 structures in the database were included, because they were stratigraphically paired with another structure and could provide information relevant to the wall -construction sequence, even though they did not contribute to the larger archaeomagnetic study.

Stratigraphic Assessment of the Construction Sequence

Our assessment of the prevalent wall-construction sequence used in Tonto Basin prehistory was based on 31 pairs of structures that were directly related through intrusive or superimposed stratigraphy (Tables 13 and B.3). Because of the focus on wall-construction sequence, all but 3 of these pairs are between structures that exhibit different wall-construction techniques (e.g., brush-and-pole pit structures overlain by coursed-masonry structures), restricting the data set to only a fraction of the paired structures that have been documented in the study area. We are confident, however, that most, if not all, of the documented pairings between different construction techniques have been included. Finally, 3 pairs of similarly constructed structures were included in this data set, because they are between sets of structures with associated VGPs. Two of these 3 pairs are between sets of pit structures, and the third is between a set of post-reinforced adobe structures.

The stratigraphic evidence we collected from sites in Tonto Basin tends to support Clark's wall -construction sequence. Given their ubiquity, it is not surprising that pit structures (Group 1) occurred in 25 of the 31 pairs included in this data set. In each of these cases, the earlier structure of the pairing was a pit structure, and, not unexpectedly, we identified no cases of pit structures overlying or intruding into structures with hypothetically later construction techniques. This is not surprising given that the construction of a pit structure would likely eradicate evidence of earlier structures. Likewise, there were no identifiable cases of coursed-masonry structures (Group 4) stratigraphically predating structures from other groups, which again could be fairly difficult to identify in the field. Finally, this sequence is directly supported by a series of three intrusive pit structures from the Rocky Point Site (AZ V:9:365/02-908; Berg, Ensor, et al. 2003:264–268) that exhibited the wall-construction sequence of post-reinforced adobe walls (Feature 52), followed by cobble-footed adobe walls (Feature 62), and finally, coursed-masonry walls (Feature 48).

Spatial and Temporal Patterning of Associated Archaeomagnetic VGPs

After confirming that the general sequence of wall-construction technique was supported by stratigraphic evidence from throughout the study area, we focused this analysis on the subset of structures with associated archaeomagnetic data. More specifically, we focused on the spatial patterning of the associated VGPs to assess whether the distribution of architectural types along the path of secular variation matched the hypothesized sequence supported through stratigraphy. Our expectations were that VGPs from structures in each architectural category would group together spatially and that these groups would form a continuous sequence that followed the known path of secular variation. It should be noted that the initial stages of this analysis focused specifically on the spatial patterning of the VGPs with only limited reference to calibrated time. Finally, after isolating and characterizing the architectural patterns of interest, we quantified the duration and overlap of these patterns within calibrated time.

Our analysis only included VGPs that had an α_{95} value of less than 5.0°. Therefore, the data set for this stage of the analysis consisted of 201 VGPs associated with 185 structures in the study area (Table B.4). The discrepancy between the number of VGPs and the number of structures reflects the occurrence of multiple VGPs for individual structures. Because we assumed that each VGP represented a specific event in that structure's use life (e.g., remodeling episodes), however, we decided to incorporate all of them, regardless of how they related to the abandonment of the structure.

Table 13. Matrix of Stratified Pairs of Structures by Wall-Construction Group

Construction Group	Construction Group				Total
	1	2	3	4	
1	2	1	9	13	25
2	—	1	1	—	2
3	—	—	—	4	4
4	—	—	—	—	—
Total	2	2	10	17	31

Note: Rows represent the stratigraphically earlier structures, columns represent the stratigraphically later structures in the pairs. Group 1 = pit structures; Group 2 = post-reinforced adobe-walled structures; Group 3 = cobble-footed, adobe-walled structures; and Group 4 = coursed-masonry structures.

When the locations of these 201 mean VGPs are plotted against the known path of secular variation (Figure 22), it can be seen that they reflect the overall pattern of secular variation fairly well. Furthermore, when these mean VGPs are categorized by architectural type, it can be seen that, as expected, VGPs from the same category tend to plot in the same general locations along the path of secular variation. The noise in the data set makes it difficult to isolate the patterns of architectural change that we are interested in, however. Therefore, we subdivided the data set into the four architectural categories and then compressed and pooled the VGPs within each category to accentuate the temporal patterning of these groups.

We plotted the pooled VGPs for each category against the appropriate dating curve to examine the shape of the distribution within that category. Although we focused primarily on assessing the distribution of transitional structures (i.e., Groups 2–4), we provide a plot for Group 1 structures against both WB2000 and the tree-ring calibrated curve for comparison (Figure 23). We assumed that, in general, pit-structure construction persisted as the dominant style in the region up to A.D. 1100 but did not extend much past this date. Clearly, there are cases of pit structures that were used and abandoned in this region after A.D. 1100, as indicated by ceramic and even archaeomagnetic data (see below), but under our hypothesis that the style itself was no longer the norm after this time. It should be noted that we recovered archaeomagnetic evidence from two pit structures at the Rock Jaw site (AZ U:3:407/2014) as part of the Cottonwood project. The VGPs associated with this pair of superimposed pit structures (Features 1 and 3) from the site were statistically different at the 5 percent significance level, and the VGP associated with the earlier structure (Feature 1) was located very close to the A.D. 1100 longitudinal minimum of secular variation. The VGP associated with the upper structure, however, was located to the north and east of the earlier VGP, indicating that the later structure was occupied during a period of easterly magnetic drift. Thus, archaeomagnetic evidence suggests that these structures were occupied right at the pre-Classic–Classic period boundary, which is slightly later than the radiocarbon and other archaeological evidence indicated.

As shown in Figure 24a, Group 2 (post-reinforced adobe structures) exhibits a linear distribution that agrees remarkably well with the shape of the tree-ring curve and follows the path of that curve up to the middle of the Classic period. Based on archaeological information, our expectations for this group were that this construction type would be limited to the beginning of the Classic period and would occur over a brief span of time. The distribution of associated VGPs appears to support these expectations, in that these structures cluster along the western half of the curve and do not extend much past the middle of the curve. For comparison, this distribution is plotted against WB2000 (see Figure 24b). As we have stressed throughout this chapter, our goal for this analysis was to capture the general trends of these architectural categories, and thus, we are less concerned with the dating of individual structures. Although this method of wall construction may have actually developed prior to A.D. 1100, the nature of our analysis does not allow us to resolve this issue. The central tendency of this group occurs between the late twelfth and early thirteenth centuries, however, suggesting that it was indeed a Classic period technology. This assumption is at least partially supported by stratigraphic evidence from a pair of structures at the Vegas Ruin (AZ U:3:405/2012), both post-reinforced adobe structures (Features 19 and 99) from which archaeomagnetic samples were collected. The two structures were stratigraphically juxtaposed, with Feature 19 overlying Feature 99. The VGPs associated with Features 19 and 99 were statistically distinct at the 5 percent probability level, and the direction between them indicated an easterly magnetic drift. Finally, the VGP associated with the earlier structure plotted very close to the A.D. 1100 longitudinal minimum. Therefore, these structures were clearly occupied during the Classic period, as we have defined it for after A.D. 1100.

Group 3 (cobble-footed adobe structures) also seems to agree with the shape of the tree-ring curve, although comparison with WB2000 suggests that one of these structures may have been used at the end of the pre-Classic period (Figure 25). Based on archaeological information, our expectations for this group were that they would appear

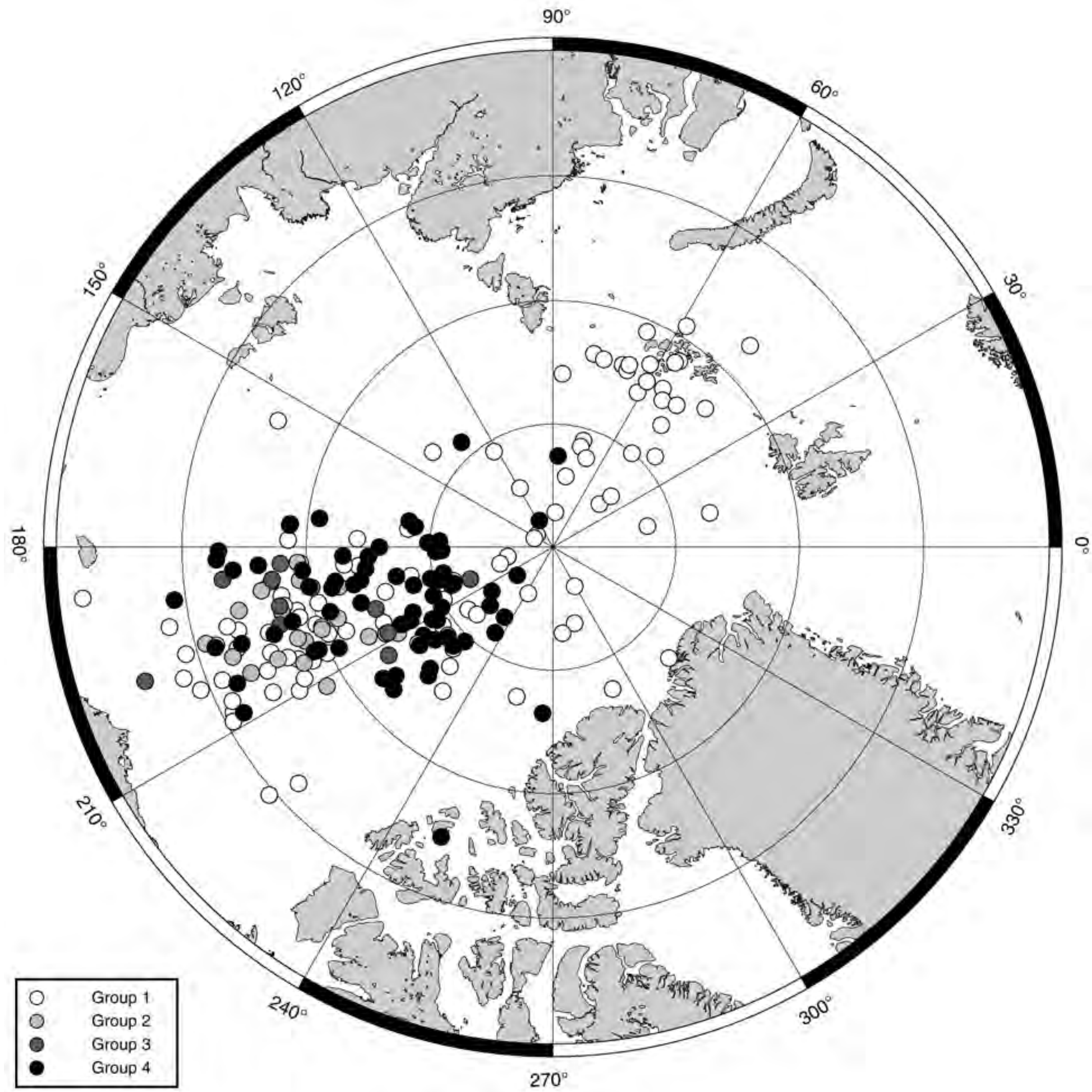

Figure 22. The locations of the 201 VGPs included in this analysis, coded by architectural category.

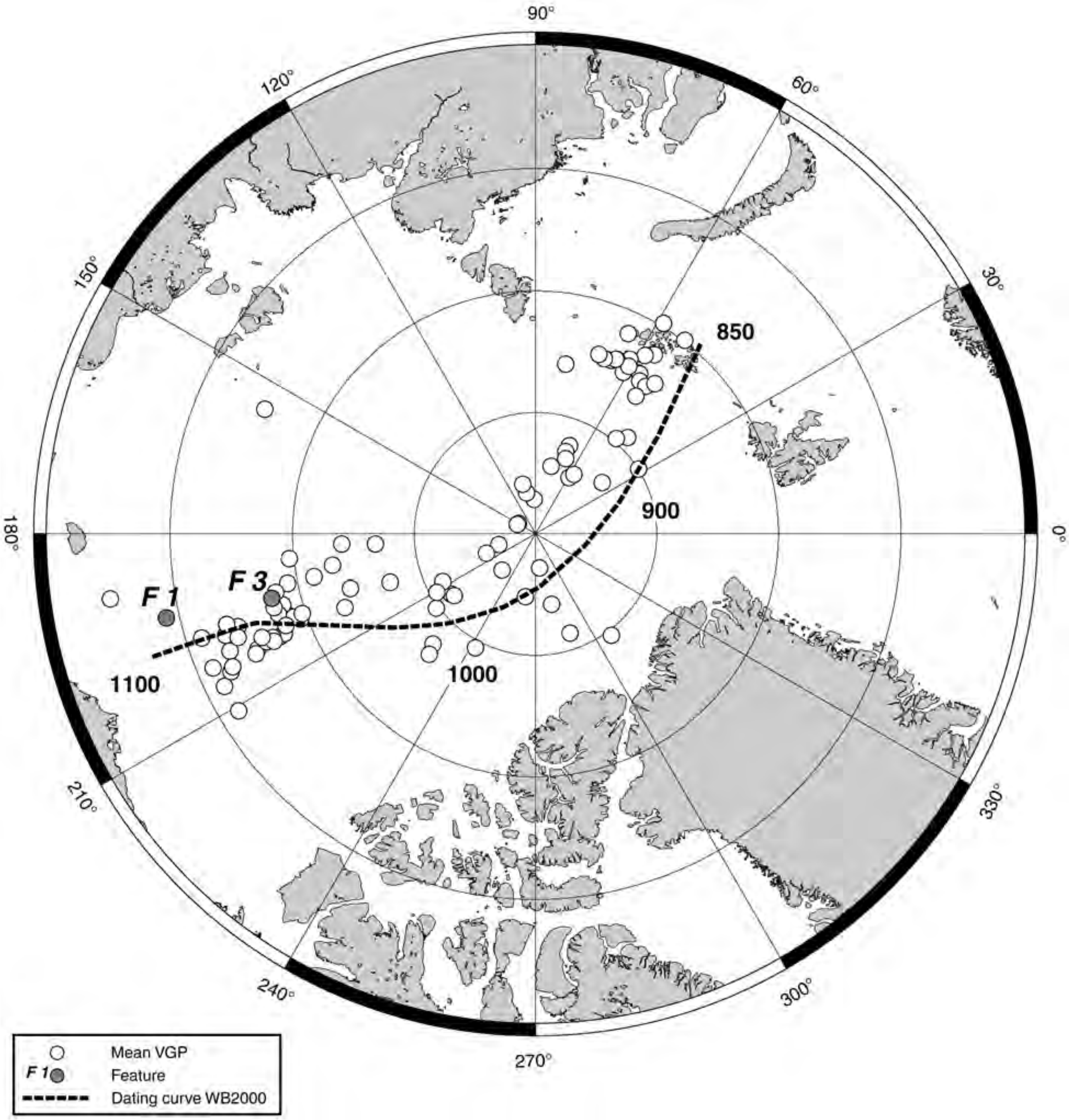

Figure 23. The pooled mean VGPs for Group 1 (pit structures) plotted against the pre-Classic dating curve WB2000 and the tree-ring calibrated dating curve. The features shown are the stratigraphically related pit structures from the Rock Jaw site (407/2014) (see text for explanation).

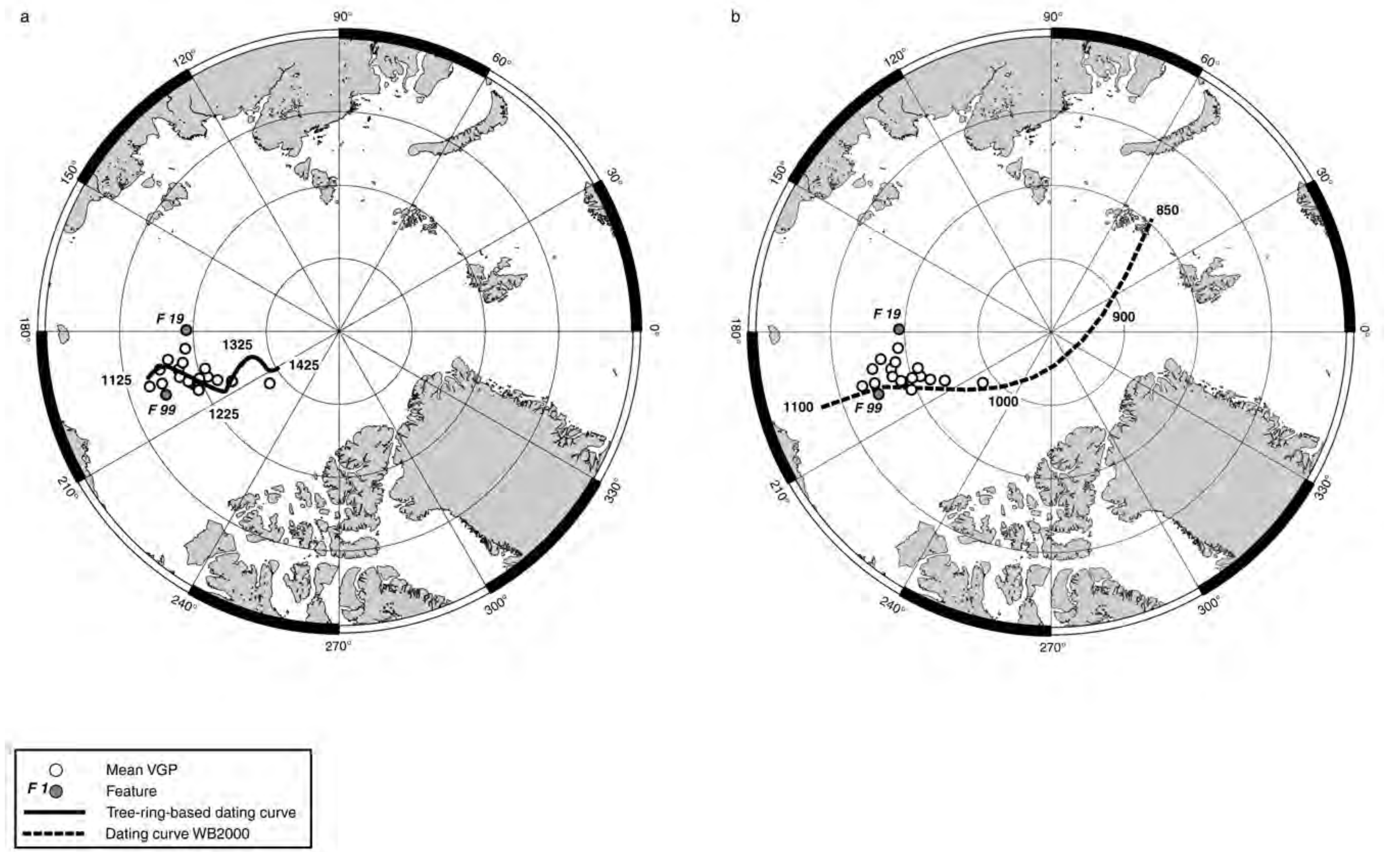

Figure 24. The pooled mean VGPs for Group 2 (post-reinforced adobe-walled structures) plotted against the tree-ring calibrated dating curve (*a*) and against WB2000 (*b*) for comparison. The features shown are the stratigraphically related pit structures from the Vegas Ruin (405/2012).

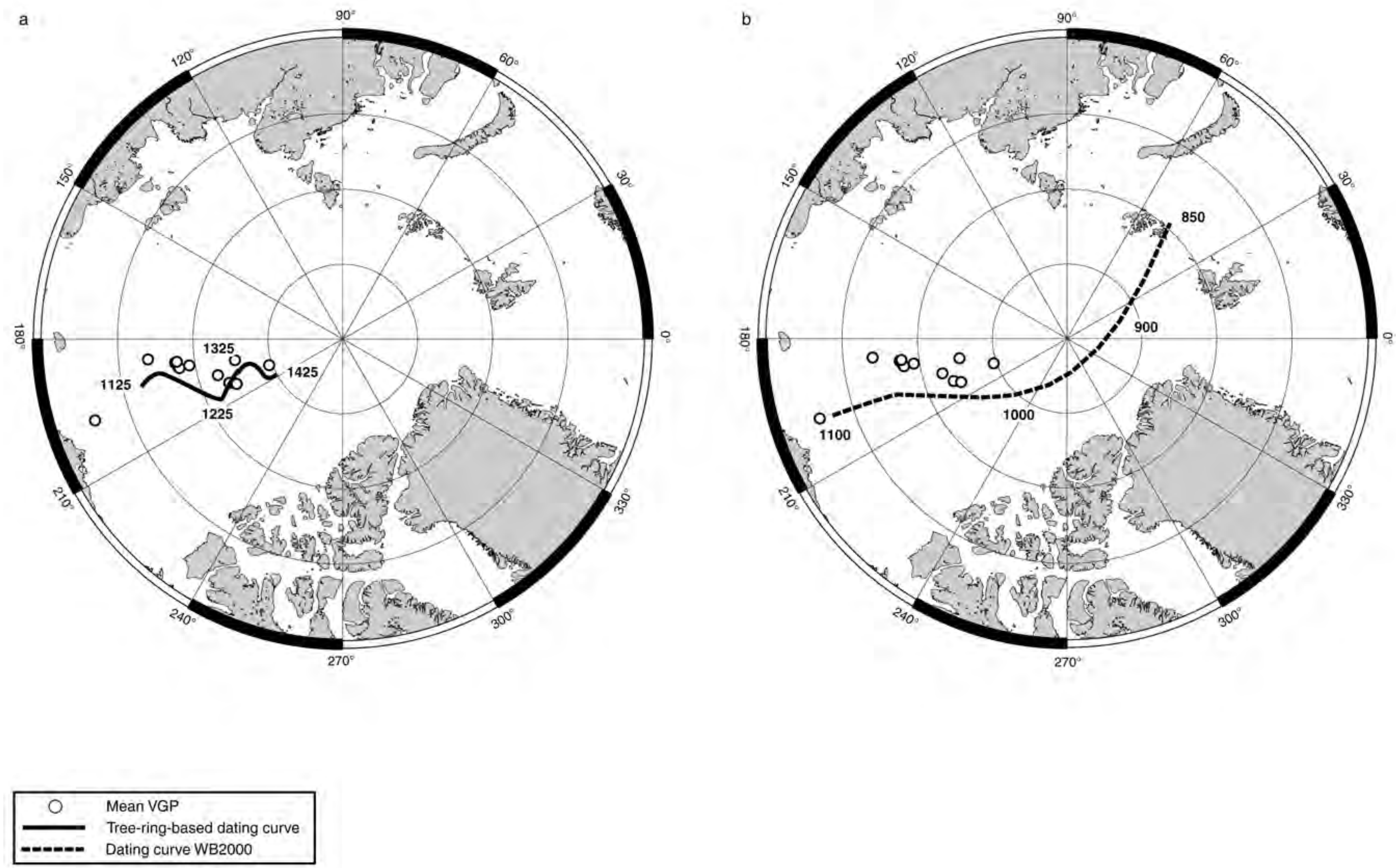

Figure 25. The pooled mean VGPs for Group 3 (cobble-footed, adobe-walled structures) plotted against the tree-ring calibrated dating curve (*a*) and against WB2000 (*b*) for comparison.

sometime after the beginning of the Classic period, peak in use toward the middle of the period, and persist into the latter half of the period. It also was expected that this group would temporally overlap with structures in Groups 2 and 4. Despite the small number of samples in this group, the spatial patterning of the associated VGPs appears to support these expectations. They form a linear distribution that follows the secular variation curve and persist throughout the Classic period. The paucity of data in this group makes it difficult to make firm statements, but our data set appears to support a late twelfth century start date for this building technology.

Group 4 (coursed-masonry structures) is the best represented of the Classic period architectural groups and exhibited much more variability than was anticipated (Figure 26). Archaeologically, we expected that this construction technology would appear initially toward the middle of the Classic period and primarily would cluster in the second half of this period (ca. A.D. 1300–1450). We found that although the majority (54 percent) of structures does cluster in the second half, there are smaller clusters that extend back toward the beginning of the period. We checked whether these earlier structures could be pit rooms and thus represent functional differences or if they reflected geographical differences. We found, however, that there were no systematic differences that could explain this discrepancy (Table 14). All of the nine early VGPs came from aboveground masonry structures and were collected from eight different sites. Two were located in the Upper Tonto Basin, and the other six were located in the Lower Tonto Basin. Finally, one of these potentially early structures (ARN 1297; Room 316 at AZ U:8:24 [ASM]) was associated with a radiocarbon date of cal A.D. 1220–1410 (Beta-46563; Lindauer 1996).

After assessing the agreement between the spatial distribution of the VGPs in Groups 2–4 with the archaeological expectations for these groups, we examined the temporal patterning of these groups in calendar time. To do this, we determined the best-fit date for each pooled VGP using the modified graphical method (Deaver and Whittlesey 2004) to date them against the tree-ring-based curve segment (Table 15). Again, we were interested primarily in assessing the temporal trends, rather than dating individual structures, so these best-fit dates are estimates for the pooled arrays. We then compared these best-fit dates to the archaeological phases and associated date ranges (Elson 1996) reported for each structure (Table 16). As seen in Table 16, the archaeological age assignments were wrong almost 39 percent of the time, and the only contexts that were consistently correct were those strictly assigned to the Miami phase. More than 18 percent of the contexts that were assigned to the Miami-Roosevelt phase transition actually postdated the end of the Roosevelt phase by a minimum of 100 years, which would place them in the conventionally dated Gila phase. Likewise, almost 19 percent of the contexts assigned to the Gila phase actually predated the start of that phase by an average of 150 years, placing them squarely within the Miami phase. All five of the structures assigned to the Ash Creek phase were archaeomagnetically dated a minimum of 15–75 years after the A.D. 1150 end date for that phase. Finally, the Roosevelt phase appeared to be exceedingly difficult to place considering that 62 percent of the contexts assigned to this phase were off by an average of 48 years too early or too late.

We then looked at how the temporal agreement broke down by architectural group in order to determine whether one of the groups had proven more difficult to place than others (Table 17). We found that, overall, structures with coursed-masonry walls were most likely to be assigned to the wrong phase. Therefore, we suggest that this construction technique is the least temporally sensitive of the three Classic period techniques we examined. On the other hand, post-reinforced adobe structures were assigned to the correct phase 75 percent of the time. This construction type also seems to be prevalent during the late twelfth and early thirteenth centuries, as predicted by Clark's model. Finally, rock-and-post-reinforced adobe structures were correctly placed two-thirds of the time, and as expected, the date ranges assigned to structures in this category overlap with those of structures in Groups 2 and 4.

Finally, we examined whether geographical biases could have affected the agreement between the archaeological and archaeomagnetic dates (Table 18). This study included data from a diverse range of cultural and physiological settings, and it is possible that differences in building styles reflect geographic differences in access to resources or even personal preference rather than temporal differences. We found, however, that the structures from Upper Tonto Basin sites (Region 3) were most likely to be assigned to the correct time period, and the one incorrectly dated structure was archaeologically dated too early. Conversely, structures located at sites in the mountainous region surrounding Tonto Basin had the highest likelihood of being assigned to the incorrect time period. In this case, the incorrectly dated structures were all coursed-masonry structures that predated the Roosevelt age assessment, and thus might represent geographic bias. The majority of incorrectly dated structures came from the Lower Tonto Basin, specifically from the Salt arm of this area, and primarily involved masonry structures that were incorrectly dated to the Roosevelt period.

Overall, we believe that these findings support Clark's model of wall-construction technique, and specifically, the sequence of post-reinforced-adobe, cobble-footed-adobe, and cobble-adobe-foundation construction technology. Furthermore, this analysis supports the hypothesis that cobble-adobe foundation became the normative wall-construction technique by the late thirteenth century. However, these findings also indicate that this technology was used in this region as early as the mid-twelfth century.

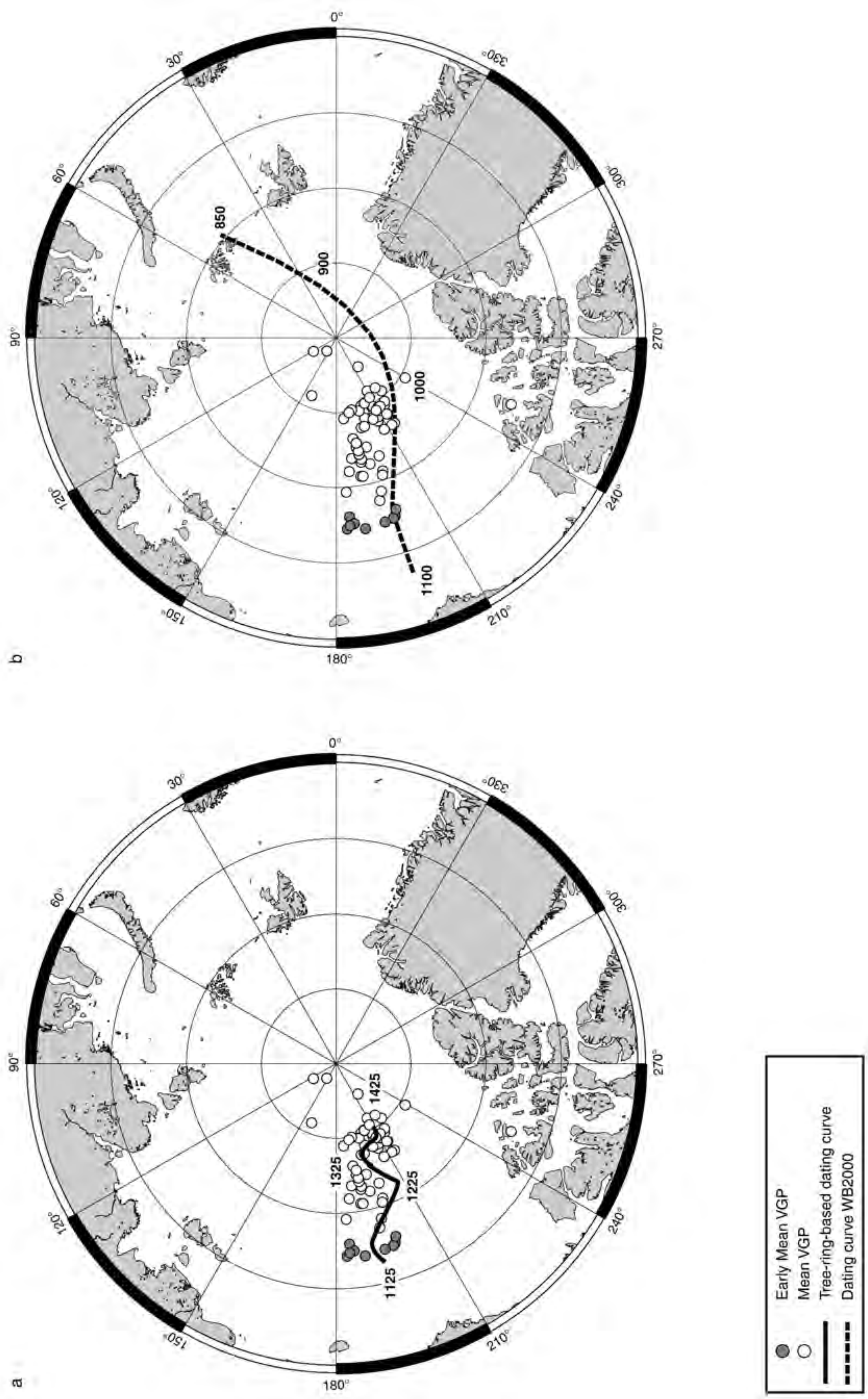

Figure 26. The pooled mean VGPs for Group 4 (coursed-masonry structures) plotted against the tree-ring calibrated dating curve (*a*) and against WB2000 (*b*) for comparison. The early VGPs shown are those referred to in the text.

Table 14. Site Number and Region for VGPs from Sites with Cobble-Adobe Structures

ARN	Site No.	Region
430	NA16,486	Upper Tonto Basin
433	NA16,929	Upper Tonto Basin
1252	AZ U:3:50 (ASU)	Lower Tonto Basin
1297	AZ U:8:24 (ASM)	Lower Tonto Basin
1762	AZ V:5:123 (ASM)	Lower Tonto Basin
1789	AZ V:5:90 (ASM)	Lower Tonto Basin
1800	AZ V:5:90 (ASM)	Lower Tonto Basin
1804	AZ V:9:105 (ASM)	Lower Tonto Basin
2055	AZ U:3:300 (ASM)	Lower Tonto Basin

Note: All structures were aboveground. Provenience information can be found in Appendix B, Table B.2.
Key: ARN = archaeomagnetic sample number.

Table 15. Mean Dates and 2σ Standard Deviations for the Pooled Mean VGPs in Groups 2, 3, and 4

ARN	Mean Date[a]	Standard Deviation	Assigned Phase	Construction Group
429	1170	69	Roosevelt	4
430	1170	33	Roosevelt	4
433	1137	94	Roosevelt	4
551	1409	53	Miami-Roosevelt	4
552	1223	96	Miami-Roosevelt	2
553	1254	126	Miami-Roosevelt	2
554	1305	117	Roosevelt	4
555	1211	94	Miami	2
556	1286	147	Miami-Roosevelt	4
1239	1323	140	Miami-Roosevelt	4
1242	1212	126	Miami-Roosevelt	4
1243	1421	22	Miami-Roosevelt	4
1245	1350	103	Miami-Roosevelt	4
1247	1371	135	Gila	4
1252	1142	75	Gila	4
1285	1245	127	Roosevelt	4
1292	1395	102	Roosevelt	4
1293	1391	97	Gila	4
1294	1186	87	Gila	4
1295	1403	62	Gila	4
1297	1156	46	Gila	4
1299	1382	109	Gila	4
1301	1327	123	Gila	4
1303	1369	79	Gila	4
1739	1329	155	Roosevelt	4
1740	1367	129	Roosevelt	4
1742	1319	166	Roosevelt	4
1743	1275	25	Ash Creek	3
1759	1349	131	Roosevelt	4
1760	1246	129	Roosevelt	4

continued on next page

ARN	Mean Date[a]	Standard Deviation	Assigned Phase	Construction Group
1761	1193	23	Roosevelt	4
1762	1162	47	Miami	4
1765	1373	115	Roosevelt	3
1769	1291	135	Roosevelt	4
1770	1297	118	Roosevelt	4
1771	1199	86	Roosevelt	3
1772	1179	78	Roosevelt	3
1774	1332	140	Roosevelt	3
1775	1295	151	Miami-Roosevelt	3
1776	1403	57	Miami-Roosevelt	4
1777	1404	62	Roosevelt	4
1778	1181	62	Miami-Roosevelt	2
1779	1197	42	Miami-Roosevelt	2
1780	1174	31	Miami-Roosevelt	2
1781	1115	62	Miami-Roosevelt	2
1785	1247	153	Roosevelt	4
1786	1425	25	Roosevelt	4
1787	1419	33	Roosevelt	4
1788	1425	25	Roosevelt	4
1789	1135	43	Roosevelt	4
1791	1378	133	Roosevelt	4
1792	1272	127	Roosevelt	4
1793	1387	82	Roosevelt	4
1794	1385	126	Roosevelt	4
1795	1387	122	Roosevelt	4
1796	1381	86	Roosevelt	4
1800	1156	50	Roosevelt	4
1801	1223	120	Roosevelt	4
1802	1389	123	Roosevelt	4
1804	1132	70	Roosevelt	4
1954	1219	115	Miami-Roosevelt	4
1956	1365	131	Miami-Roosevelt	4
1957	1392	105	Miami-Roosevelt	2
1958	1404	49	Miami-Roosevelt	4
1961	1146	39	Ash Creek-Miami	3
1968	1181	29	Ash Creek-Miami	3
1969	1174	31	Ash Creek-Miami	3
2044	1329	131	Miami or Roosevelt	2
2055	1144	96	Miami-Roosevelt	4
2056	1425	25	Gila	4
2057	1302	115	Miami-Roosevelt	4
2059	1410	55	Roosevelt	3
2071	1190	73	Miami-Roosevelt	2
2072	1168	77	Miami-Roosevelt	2
2073	1144	82	Miami-Roosevelt	2
2074	1185	73	Miami-Roosevelt	2
2078	1208	70	Miami-Roosevelt	2
2081	1193	24	Miami-Roosevelt	2
2703	1152	61	Miami	2

ARN	Mean Date[a]	Standard Deviation	Assigned Phase	Construction Group
3417	1309	145	Roosevelt	4
3418	1206	70	Roosevelt	4
3419	1388	80	Roosevelt	4
3447	1365	132	Gila	4
3448	1425	25	Gila	4
3449	1391	107	Gila	4
3450	1390	77	Gila	4
3451	1424	7	Gila	4
3453	1407	58	Gila	4
3455	1180	74	Miami	3
3469	1175	25	Ash Creek	2
3471	1275	25	Ash Creek	2
3472	1225	25	Ash Creek	2
3473	1175	25	Ash Creek	2
3478	1200	71	Roosevelt	4
3479	1410	53	Roosevelt or Gila	4

Note: Provenience information can be found in Appendix B, Table B.2.
Key: ARN = archaeomagnetic sample number.
[a] Dates were calculated against the tree-ring based curve segment.

Table 16. Percent of Archaeological Contexts Correctly Dated, by Phase

Assigned Phase	Correct (%)	Incorrect (%)	Total (n)
Ash Creek	—	100.00	5
Ash Creek-Miami	100.00	—	3
Miami	100.00	—	4
Miami-Roosevelt	82.48	18.52	27
Roosevelt	38.46	61.54	39
Roosevelt or Gila	100.00	—	1
Gila	81.25	18.75	16
Total	61.05	38.95	95

Table 17. Percent of Archaeological Contexts Correctly Dated, by Construction Group

Dating Accuracy	Group 2	Group 3	Group 4
Correct (%)	75.00	63.64	56.25
Incorrect (%)	25.00	36.36	43.75

Table 18. Percent of Archaeological Contexts Correctly Dated, by Region

Dating Accuracy	Region 1	Region 2	Region 3	Region 4	Region 5
Correct (%)	54.05	72.73	80.00	25.00	56.25
Incorrect (%)	45.95	27.27	20.00	75.00	43.75
Total structures (n)	37	33	5	4	16

Note: Region 1 is the Salt arm of the Lower Tonto Basin; Region 2 is the Tonto Creek arm of the Lower Tonto Basin; Region 3 is the Upper Tonto Basin; Region 4 is the mountainous zone surrounding Tonto Basin; Region 5 is the Globe Highlands.

Ceramic Trends Through the Pre-Classic and Classic Periods

Archaeologists in the Southwest have a long history of using ceramics to evaluate cultural identity, patterns of regional exchange and interaction, and the chronological sequence of cultural developments. Patterns in the frequency of various ceramic wares and types are the primary qualities of the archaeological record indicating the shift in the direction of regional interaction that distinguish the pre-Classic and Classic periods. The objective in this section is to look at the distribution of particular ceramic wares in Tonto Basin relative to time, where time is measured independently of the ceramic phenomena. Because ceramic type distributions play a crucial role in the classification of archaeological contexts to archaeological periods or phases, to then use the archaeological period and phases as independent temporal categories to discern patterns and trends in the ceramic wares becomes a tautological exercise. Instead, we rely on the archaeomagnetic method to date archaeological features with the caveat that we must first rely on gross categories of archaeological data to separate the contexts that we suspect predate A.D. 1100 from those that we suspect postdate A.D. 1100. Before we delve into the data, methods, and findings, we review the structure of this study to explain this seemingly contradictory logic.

The Logical Structure of this Ceramic Study

Two critical pieces of prior knowledge are used to structure this study. First, there are specific changes in material culture that distinguish the pre-Classic and Classic periods in Tonto Basin. These changes are well known to archaeologists familiar with the region, and the shift between the pre-Classic and Classic period cultural patterns is placed at A.D. 1150 (Elson 1996). Second, secular variation of the regional geomagnetic field shifted from a westerly trend to an easterly trend at roughly A.D. 1100, resulting in a loop in the polar wander path between A.D. 1050 and 1200 (see Figure 19). These changes in cultural patterns and in geomagnetic secular variation are not exactly coincident, but the timing of each is sufficiently close that we can divide our archaeomagnetic data set into pre– and post–A.D. 1100 subsets based on the archaeological patterns. The pre-Classic and Classic period cultural patterns roughly equate with the periods before and after A.D. 1100, respectively.

Although we accept the assignment of the archaeological contexts to the gross cultural-historical categories of pre-Classic and Classic, we do not take these classifications as absolutely accurate. Rather, we accept these classifications as assumptions that must be tested. The preceding evaluation of architectural styles reaffirms our general expectations for the succession of building methods from the pre-Classic to Classic periods. The scant stratigraphic information available from archaeomagnetically dated pit structures, cobble-adobe-foundation structures, and potentially transitional categories supports the supposition that the transitional architectural styles replaced pit structures as the normative building style by ca. A.D. 1100. We emphasize that the evidence is supportive but not conclusive. If correct, however, the evidence provides a crucial key to this study, because it means that we can rely on architectural style primarily to assign pit structures to the period before A.D. 1100 and the transitional and cobble-adobe-foundation styles to the period after A.D. 1100 (Table 19). Assessments of ceramic wares and types become a secondary level of information that we use to identify a few cases in which pit structures appear to have been constructed and used in the Classic period (see Table 19).

Other contexts from which both archaeomagnetic data and ceramics were recovered can be assigned to either the pre-Classic or Classic period on the basis of the associated ceramics only; these include *hornos*, crematoria, and thermal pits. Here again, we are not concerned with accurately placing these into conventional archaeological phases but simply separating them into groups that we hypothesize predate and postdate A.D. 1100. Because we must rely to some extent on ceramic categories to assign these contexts to either the pre-Classic or Classic period subset, it is prudent that we identify the key changes in ceramic wares

Table 19. Summary of Construction Group, by Period and Phase, for the Tonto Basin Regional Archaeomagnetic Data Set

Phase by Period	Construction Group				Total
	1	2	3	4	
Classic					
Gila	1	—	—	16	17
Roosevelt	—	—	10	34	44
Miami	3	2	1	1	7
unplaced	1	15	1	18	35
Sedentary					
Ash Creek	8	—	1	—	9
Sacaton	49	—	—	—	49
unplaced	1	—	—	—	1
Colonial					
Santa Cruz	7	—	—	—	7
Gila Butte	17	—	—	—	17
unplaced	8	—	—	—	8
Total	95	17	13	69	194

and technologies that we accept as indicators of these two cultural-historical periods.

Previous archaeological studies have demonstrated what appear, based on the prevalence of information, to be significant differences between the pottery traditions of the pre-Classic and Classic periods (McCartney et al. 1994; Vint 2000a; Whittlesey 1994). We focus on three primary ceramic signatures. First, the distinction between these two periods is based on the recovery of relatively higher frequencies of Hohokam Buff Ware in the painted ceramic assemblages of pre-Classic period contexts compared to relatively higher frequencies of northern Mogollon and Ancestral Pueblo wares in Classic period painted ceramic assemblages, notably Little Colorado White Ware, Cibola White Ware, Showlow Red Ware, White Mountain Red Ware, painted and corrugated Mogollon Brown Ware, and Roosevelt Red Ware. The latter ware, particularly, is a key diagnostic of the Classic period in Tonto Basin. Some white wares also occur in the pre-Classic period. A second key ceramic characteristic in the Classic period is an increase in red-slipped pottery. The final key ceramic characteristic is the appearance of and increase in textured wares at the expense of the smooth-finished wares of the preceding period. This is true for both the brown domestic pottery and much of the red-slipped pottery.

Using these archaeological characteristics to divide the contexts between the pre-Classic and Classic period subsets, we then rely on the distribution of the VGPs to represent a measure of time within the respective period. Through the method of statistical comparisons and pooling described above, we are able to correlate the ceramic collections of spatially discrete contexts across the Tonto Basin study area. We can identify groups of features that were potentially coeval at a level of precision that depends primarily on the precision of the measured archaeomagnetic data. Thus, we can maximize the temporal resolution of the data (see Deaver 1988:114). Essentially, each archaeomagnetically sampled context included in this data set represents a unique window to the past. For each context, we are able to identify a subset of other contexts with which it is statistically indistinguishable. We do not expect all contexts within a subset to be absolutely contemporary, but we do expect these subsets to be arrayed normally. Thus, the pooled VGP should be a fair approximation for the actual geomagnetic pole location at the date the materials were fired, and the pooled ceramic frequencies for the group should be a fair approximation of the character of the ceramic assemblage at that date. Mean VGPs that exceed this distance are considered undatable through this method. It should be noted, however, that this method does not account for the imprecision in the dating curve or in the independent dates used to calibrate this curve, which may lead to overly precise, and possibly inaccurate, date ranges. Furthermore, it assumes a uniform rate of secular variation, contrary to the documented secular variation record (e.g., Labelle and Eighmy 1997; Lengyel and Eighmy 2002), and thus may produce overly precise date ranges for some time periods and imprecise date ranges for others.

By dividing our data set into pre-Classic and Classic period subsets, we can ascertain whether the resulting subdivision of the ceramic data corresponds with our expectations of how ceramic technology changed between the two periods. Furthermore, we can use the subdivided archaeomagnetic data to model how rapidly new technologies and forms came to dominate the ceramic assemblage; this would provide some indication of the strength and nature of the cultural influences that presumably underlie these changes.

Tonto Basin Regional Ceramic Data

We gathered ceramic data for archaeomagnetically dated contexts for the 15 targeted archaeological projects in Tonto Basin (see Table 11). For most of these projects, tables in the reports provided summaries of the ceramic collections by ceramic wares, types, individual contexts, and depositional units (e.g., fill, near-floor fill, and floor). We were not, however, able to incorporate the ceramic data from the Ash Creek Project, because the ceramic counts are presented only at the site level. The ceramic database is presented in Table B.5 and summarized in Table 20.

Given the number of projects, it is not surprising that several different typological naming conventions were applied to similar ceramic categories. For the purposes of this analysis, we applied a set of standardized names to specific types of unpainted pottery that we believe changed in important ways over time. We identified four basic wares that probably represent the typical, day-to-day prehistoric pottery. These are brown plain, brown corrugated, red plain, and red corrugated. These four groups represent a two-dimensional paradigm based on a brown or red-slipped surface color and a smoothed or corrugated surface finish. We focused on differences in manufacturing and surface finish to group these wares, rather than pastes and tempers, in order to create a uniform database. Because these data were produced by several different analysts, not all of whom looked at paste and temper petrographically, we do not believe that distinctions in these attributes would have been made consistently across the projects. As noted above, red ware and corrugation are considered hallmarks of the Classic period ceramic craft. All of the other painted and intrusive wares were classified according to defined regional ceramic ware traditions.

A variety of indeterminate categories are found among the ceramic tabulations. To simplify this study, we absorbed the indeterminate categories into the more inclusive categories. For example, indeterminate red ware or plain ware (i.e., brown ware) was a common category, and in this study, we included it with the brown plain category. Also, if at any time it was unclear whether a category was smooth-finished or corrugated, that category was included with the smooth finish. Finally, we assumed that the category "plain ware" represented brown plain, because the dominant indigenous pottery in Tonto Basin was a brown ware.

Our final note concerns the linkage between the archaeomagnetic data and the ceramic counts. In our tabulations, we included all ceramics attributed to a particular recovery context regardless of stratigraphic position in that context. Thus, there was no direct link between the dated event—the abandonment of the structure—and the event that we wish to date—the use of particular ceramic wares in Tonto Basin. Overall, we assume that the ceramics recovered from each context relate to events associated with that context or to the accumulation of trash from events postdating that context. Thus, the ceramic trends are either coeval with or later than the context that is dated. It is evident, however, in the ceramic collections that there is a persistent admixture of pre-Classic and Classic period wares in many contexts because of the multicomponent nature of many archaeological sites.

Pre-Classic Period: Evaluating the Ash Creek Phase

As discussed above, the pre-Classic period in Tonto Basin was dominated by interaction with the Hohokam cultural homeland to the south. In the prevailing chronology for this region (Elson 1996), this period is divided into five sequential phases: Snaketown (A.D. 650–750), Gila Butte (A.D. 750–850), Santa Cruz (A.D. 850–950, Sacaton (A.D. 950–1050), and Ash Creek (A.D. 1050–1150). The first four phases are direct analogues with the Hohokam cultural phase sequence based on the occurrence of the phase-diagnostic pottery types at sites in Tonto Basin. The last phase, Ash Creek, is unique to Tonto Basin and, as postulated, represents a decline in trade with the Hohokam culture to the south and an increase in trade with the Mogollon and Ancestral Pueblo cultures to the north (Elson 1996). As thus formulated, the patterns of cultural interaction that distinguish the pre-Classic and Classic periods were put in motion during the Ash Creek phase.

The Ash Creek phase (A.D. 1050–1150) occupies a place in prehistory between the Sacaton phase (A.D. 950–1050) and the Miami phase (A.D. 1150–1250). Although the Ash Creek phase is associated with changes in architectural style, the phase is defined primarily by a shift in the dominant ceramic assemblage from Hohokam Buff Ware to white ware at around A.D. 1025 (Elson 1996:134). When couched within the conventional chronological framework for Tonto Basin (Elson 1996), the Ash Creek phase represents the end of the Sedentary period.

Initially, our skepticism on the dating of the Ash Creek phase derived from archaeomagnetic data that suggested that contexts assigned to the Sacaton phase persisted until at least A.D. 1100 and, thus, were coeval with the Ash Creek phase. Therefore, we evaluate in this study whether the Ash Creek phase represents a discrete interval of time subsequent to the Sacaton phase, as postulated, or a coeval interval of time, as indicated by the archaeomagnetic data.

Table 20. Summary of Ceramic Types and Frequencies for Tonto Basin

Ceramic Type, by Ware	Total
Brown corrugated	
Brown corrugated	12,558
Brown corrugated (clapboard)	7
Brown corrugated (fine)	22
Brown corrugated (flattened)	5
Brown corrugated (indented)	22
Brown corrugated (indented flattened)	44
Brown corrugated (indented obliterated)	1,087
Brown corrugated (obliterated)	67
Brown corrugated (patterned)	3
Tonto Corrugated	1,679
Brown plain	
Brown plain	49,094
Brown plain (intrusive)	3
Brown plain (knobbed)	2
Brown plain (smudged)	5,281
Flying V Plain	13
Gila Plain	5,211
Gila Plain (smudged)	5
Tonto Plain	4,345
Tonto Plain, Polles	489
Tonto Plain, Tonto and Pinal	3,608
Tonto Plain, Verde	412
Wingfield Plain	3,655
Cibola White Ware	
Escavada Black-on-white	8
Gallup Black-on-white	2
Indeterminate	1,650
Indeterminate (Kayenta Style)	3
Indeterminate black-on-white	43
Kiatuthlanna Black-on-white	4
Kiatuthlanna or Red Mesa Black-on-white	4
Pinedale Black-on-white	348
Pinedale or Tularosa Black-on-white	1
Puerco Black-on-white	37
Puerco or Reserve Black-on-white	5
Puerco, Escavada, Snowflake, Gallup, or Reserve Black-on-white	5
Red Mesa Black-on-white	33
Red Mesa, Puerco, Escavada, Snowflake, or Gallup Black-on-white	5
Reserve Black-on-white	41
Reserve or Tularosa Black-on-white	91
Reserve or Tularosa or Pinedale Black-on-white	11
Roosevelt Black-on-white	16
Snowflake Black-on-white	128
Snowflake or Escavada Black-on-white	4
Snowflake or Pinedale Black-on-white	17
Tularosa Black-on-white	43

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Ceramic Type, by Ware	Total
Tularosa or Pinedale Black-on-white	62
Wepo Black-on-white	3
Gray corrugated	
Gray corrugated	9
Gray plain	
Gray plain	42
Hohokam Buff Ware	
Casa Grande Red-on-buff	17
Gila Butte or Santa Cruz Red-on-buff	290
Gila Butte Red-on-buff	363
Gila Butte Red-on-buff (incised)	27
Indeterminate buff	988
Indeterminate buff (brown)	117
Indeterminate red-on-brown	19
Indeterminate red-on-buff	1,207
Indeterminate red-on-buff (brown)	41
Sacaton Buff	6
Sacaton or Casa Grande Red-on-buff	5
Sacaton Red-on-buff	397
Santa Cruz or Sacaton Red-on-buff	250
Santa Cruz Red-on-buff	452
Snaketown or Gila Butte Red-on-buff	27
Snaketown Red-on-buff	18
Sweetwater Red-on-gray or Snaketown Red-on-buff	1
Tanque Verde Red-on-brown	45
Hopi	
Bidahoci Black-on-white	1
Bidahoci Polychrome	1
Black-on-orange	4
Chavez Black-on-red	1
Hom'ol'ovi Polychrome	3
Indeterminate Jeddito Yellow Ware	1
Indeterminate orange ware	1
Indeterminate yellow ware	8
Jeddito Black-on-yellow	4
Tuwiuca Black-on-orange	3
Indeterminate	
Indeterminate	153
Indeterminate (white slipped)	1
Indeterminate black-on-red	8
Indeterminate painted	86
Indeterminate polychrome	4
Indeterminate red-on-black	72
Indeterminate red-on-brown	81
Indeterminate Showlow or Roosevelt Red Ware	2
Indeterminate white ware	
Indeterminate	58
Indeterminate black-on-white	100
Little Colorado White Ware	

Ceramic Type, by Ware	Total
Holbrook Black-on-white	1
Holbrook Black-on-white (Style A or B)	13
Holbrook Black-on-white (Style A)	6
Holbrook Black-on-white (Style B)	20
Holbrook or Walnut Black-on-white	23
Indeterminate	116
Indeterminate black-on-white	30
Leupp Black-on-white	7
Padre Black-on-white	12
St. Josephs Black-on-white	2
Walnut Black-on-white	12
Walnut (Style A or B) Black-on-white	22
Walnut (Style A) Black-on-white	21
Walnut (Style B) Black-on-white	9
Walnut, Padre, or Leupp Black-on-white	1
Lower Colorado Buff Ware	
Indeterminate Lower Colorado Buff Ware (painted)	1
Mogollon Brown Ware	
Cibecue Polychrome	3
Encinas Red-on-brown	6
Forestdale Smudged	26
Heber Corrugated	2
Indeterminate corrugated	5
Indeterminate red-on-brown (Tanque Verde Style)	1
Linden Corrugated	29
Maverick Mountain Polychrome	2
Maverick Mountain-like polychrome	3
McDonald Indented Corrugated	2
McDonald Clapboard Corrugated	2
McDonald Corrugated	150
McDonald Indented Corrugated	12
McDonald or Reserve Clapboard Corrugated	5
McDonald or Reserve Flattened Corrugated	2
McDonald or Reserve Indented Corrugated	4
McDonald or Reserve Indented Flattened Corrugated	20
McDonald Painted Corrugated	97
McDonald Red Corrugated	1
Reserve Smudged Indented Corrugated	1
Reserve Smudged Indented Corrugated (painted)	1
San Carlos Red-on-brown	66
Tucson Polychrome	1
Red corrugated	
Salado Red Corrugated	7,073
Red plain	
Gila or Salt Red	414
Gila Red	311
Red plain	8,314
Red plain (smudged)	2,263

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Ceramic Type, by Ware	Total
Sacaton Red	71
Salado Red Plain	1,359
Salt Red	2
Salt Red (smudged)	1
Tonto Red	148
Tonto Red, Salt	2
Wingfield Red	42
Roosevelt Red Ware	
Gila Black-on-red	54
Gila or Tonto Polychrome	231
Gila Polychrome	2,617
Indeterminate	5
Indeterminate black-on-red	27
Indeterminate polychrome	13
Indeterminate red-on-brown	1
Indeterminate red-on-brown (Tonto Basin?)	1
Pinto Black-on-red	66
Pinto Black-on-red (corrugated)	3
Pinto Black-on-red, salmon variety	1
Pinto Black-on-red or Polychrome	1
Pinto or Gila Black-on-red	115
Pinto or Gila Polychrome	129
Pinto Polychrome	95
Pinto Polychrome, salmon variety	13
Tonto Polychrome	761
Salado Red Ware	
Salado White-on-red	49
Salado White-on-red (corrugated)	188
Salado White-on-red (noncorrugated)	1
San Juan Red Ware	
Deadmans Black-on-red	1
Showlow Red Ware	
Showlow Black-on-red	8
Showlow Black-on-red (corrugated)	1
Showlow Black-on-red (Holbrook Style)	2
Showlow Black-on-red (Puerco Style)	1
Showlow Black-on-red (Wingate Style)	1
Tusayan White Ware	
Black Mesa Black-on-white	18
Black Mesa or Sosi Black-on-white	30
Gray corrugated	1
Indeterminate	27
Indeterminate black-on-white	82
Indeterminate corrugated	3
Kana'a Black-on-white	33
Kana'a or Black Mesa Black-on-white	7
Lino Gray	1
Lino Gray, Fugitive Red	5
Sosi Black-on-white	1

Ceramic Type, by Ware	Total
White Mountain Red Ware	
Cedar Creek or Fourmile Polychrome	7
Cedar Creek Polychrome	24
Fourmile Polychrome	343
Indeterminate	164
Indeterminate black-on-red	124
Indeterminate polychrome	37
Pinedale Black-on-red	36
Pinedale or Cedar Creek Polychrome	11
Pinedale or Fourmile Polychrome	1
Pinedale Polychrome	17
Puerco Black-on-red	1
Showlow Polychrome	9
Springerville Polychrome	1
St. John’s Black-on-red	24
St. John’s Polychrome	104
Wingate Black-on-red	8
Wingate Polychrome	1
Total	121,331

The objective in this section is to evaluate the temporal position of the Ash Creek phase relying on a detailed evaluation of the available archaeomagnetic data.

Ash Creek Phase: Archaeological and Archaeomagnetic Expectations

Presently, the Ash Creek phase is conceptualized as the terminal aspect of the pre-Classic period and is dated at ca. A.D. 1050–1150. This proposition establishes a hypothesis that is clearly testable with the available archaeomagnetic data. As we noted above, we know that the pattern of secular variation during the pre-Classic period arcs from east to west between A.D. 850 and 1100. In the current study, we are concerned only with the pattern of secular variation up until A.D. 1150, which is the expected end of the Ash Creek phase. After A.D. 1100, secular variation shifts from a westerly trend to an easterly trend. As stated previously, the estimated location of the regional magnetic north pole at A.D. 1150 sits above and slightly to the east of the A.D. 1100 pole (see Figure 19), and the difference between the two poles is too slight to have any impact on the expectations we formulate here.

Given the postulated dating of the Ash Creek phase, what we know about secular variation for that time, and what we know about secular variation for the time preceding the Ash Creek phase, we have formulated two expectations regarding the manifestation of the Ash Creek phase among the pre-Classic period archaeomagnetic data set. Our first expectation concerns where VGPs from contexts assigned to the Ash Creek phase should plot relative to the remainder of the pre-Classic period data. The phase assignments encapsulate archaeologists’ understandings and perceptions of the Ash Creek phase as it is represented in the archaeological record. We know that secular variation moved westerly between two latitudinal minima at ca. A.D. 850 and A.D. 1100. Thus, archaeological contexts attributed to the Colonial period (A.D. 850–950) should be located along the eastern segment of the arc, and archaeological contexts attributed to the Sedentary period (A.D. 950–1150) should be located along the western segment of the arc. As the terminal aspect of the Sedentary period, the Ash Creek phase data should group at the extreme westerly end of the arc and, specifically, west of the Sacaton phase data. In this evaluation, we are not concerned directly with the relationship of the conventional Gila Butte and Santa Cruz phase, and so these two phases will be treated here inclusively as the Colonial period.

Our second expectation focuses specifically on the diagnostic ceramic signature of the Ash Creek phase. This phase is defined primarily by changes in the relative proportion of Hohokam Buff Ware to northern white wares. If the Ash Creek phase represents a shift in trade from the south to the north as expected, we should see a correlating decrease in the frequency of Hohokam Buff Ware ceramics and increase in the frequency of northern white ware ceramics over the course of the pre-Classic period.

Evaluating the Ash Creek Phase in the Chronological Sequence

Our first expectation is evaluated graphically. The VGPs from contexts attributed to the Ash Creek phase are plotted relative to the pooled VGPs attributed to the Colonial period and Sacaton phase (Figure 27). This graphical evaluation initially confirms our expectations about how the Colonial period and Sacaton phase contexts should distribute relative to each other but fails to confirm our expectation concerning the relationship of Ash Creek phase contexts relative to Sacaton phase contexts.

The Colonial period data plot along the eastern end of the arc as expected. The Colonial period and the Sacaton phase data overlap between A.D. 900 and 950. The Ash Creek phase data cluster along the dating curve between A.D. 1025 and 1100. Initially, this seems to lend credence to the postulated dating of this phase. The most important characteristic of this distribution, in our opinion, is that the contexts assigned to the Ash Creek phase scatter among many other contexts assigned to the Sacaton phase. Therefore, our final expectation that the Ash Creek phase data should represent the terminal aspect of the pre-Classic period and plot west of the Sacaton phase data does not hold true. An examination of the scatter of Sacaton and Ash Creek phase VGPs suggests that these two sets of data represent the same period of time. This supposition is borne out in the array of associated ceramics.

Table 21 presents the inventory of ceramic types that are associated with the Ash Creek phase contexts included in this study. This inventory is contrasted with inventories derived from Sacaton phase and Classic period contexts that have archaeomagnetic VGPs indistinguishable from the Ash Creek phase VGPs at 5 percent significance. The Sacaton phase data set represents contexts that we expect to be contemporary with the Ash Creek phase based on our archaeological expectations and the archaeomagnetic data. The Classic period data set should postdate the Ash Creek phase data, but they are included here, because the archaeomagnetic comparisons confirm that they are archaeomagnetically similar points. This enables us to contrast the ceramic signatures of the Ash Creek phase contexts and the Classic period contexts.

The proportions of different ceramic types vary among the three data sets, but it is clear that the composite Ash Creek phase assemblage more closely resembles that of the Sacaton phase contexts than of the Classic period contexts (see Table 21). In particular, the Classic period contexts differ in the frequencies of brown corrugated, brown plain, Cibola White Ware, red corrugated, red plain, Roosevelt Red Ware, and White Mountain Red Ware ceramics. This seems to confirm that the contexts that have been assigned to the Ash Creek phase do, in fact, belong to the pre-Classic period. The Ash Creek phase contexts have a somewhat reduced frequency of Hohokam Buff Ware ceramics compared to Sacaton phase contexts, but the overall percentage of white ware ceramics (Tusayan, Cibola, Little Colorado, and indeterminate) is similar for the two phases (1.14 percent for Sacaton and 0.84 percent for Ash Creek). Furthermore, the decrease in Hohokam Buff Ware ceramics within Ash Creek phase contexts is not offset by an increase in white ware ceramics, as has been defined for the phase (Elson 1996:132). For reference, the total white ware for the Classic period data set is 4.30 percent.

Although the Ash Creek phase contexts more closely resemble Sacaton phase contexts than Classic period contexts, the proportions of specific ceramic types differ between these two groups. These differences show up in the increased frequencies of Hohokam Buff Ware ceramics and red plain (Sacaton Red) ceramics among the Sacaton phase contexts. Given that the Ash Creek and Sacaton phase VGPs display nearly identical distributions, it is likely that these differences are not related to change over time but rather to differences in preference for and/or access to these goods among contemporary households and sites or to random noise inherent in these ceramic samples.

Ash Creek Phase as a Ceramic Signature in the Pre-Classic Period

The Ash Creek phase is a relatively recent chronological construct (Elson 1996; Wood 1992), and therefore, projects conducted in Tonto Basin prior to the definition of this phase likely would have classified contexts between A.D. 1050 and 1150 as Sacaton phase, regardless of differences in material culture. Because this would affect the results summarized above, the apparent contemporaneity of Ash Creek and Sacaton phase contexts may not be a fair test. Here we look at the Ash Creek phase as a particular ceramic signature during the pre-Classic period. If the Ash Creek phase is a viable chronological construct as postulated and dated, then we should see the expected ceramic signature among the pre-Classic period contexts that date after A.D. 1025. The key ceramic signature is a change from a predominantly buff ware assemblage to a predominantly white ware assemblage (Elson 1996:134).

A summary of the ceramic wares recovered from pre-Classic period contexts is presented in Table 22. Before discussing these data, we wish to review how these numbers were generated. Our primary concern is to define the trends in the ceramic assemblages over time. We relied on the statistically defined archaeomagnetic clusters to provide us with a set of contexts within the pre-Classic period data set that should be roughly contemporaneous. Four reasons guided this decision. First, we are interested in

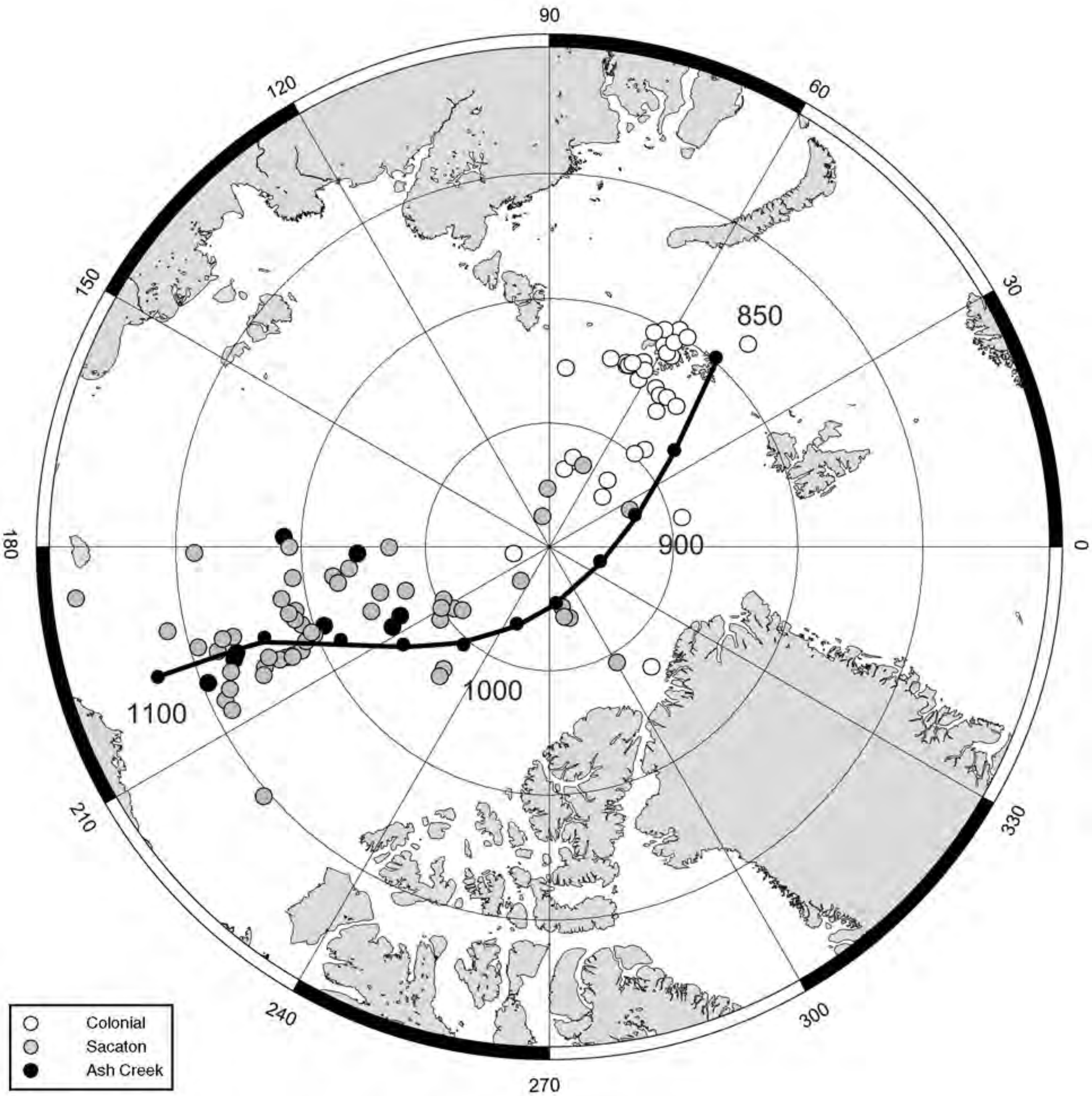

Figure 27. Distribution of Ash Creek VGP data relative to Colonial period and Sacaton phase VGPs.

Table 21. Archaeomagnetic Comparison of Ash Creek Phase, Sacaton Phase, and Classic Period Ceramic Signatures

Ceramic Ware	Sacaton Phase		Ash Creek Phase		Classic Period	
	n	%	n	%	n	%
White Mountain Red Ware	6	0.04	2	0.03	669	1.60
Tusayan White Ware	71	0.44	3	0.05	4	0.01
Showlow Red Ware	—	—	—	—	5	0.01
San Juan Red Ware	1	0.01	—	—	—	—
Salado Red Ware	—	—	—	—	197	0.47
Roosevelt Red Ware	12	0.07	2	0.03	2,294	5.50
Red plain	1,130	6.95	52	0.86	6,693	16.04
Red corrugated	24	0.15	12	0.20	2,271	5.44
Mogollon Brown Ware	31	0.19	—	—	274	0.66
Little Colorado White Ware	23	0.14	6	0.10	97	0.23
Indeterminate white ware	14	0.09	6	0.10	64	0.15
Indeterminate	207	1.27	3	0.05	12	0.03
Hopi	—	—	—	—	12	0.03
Hohokam Buff Ware	1,107	6.81	105	1.73	385	0.92
Gray plain	4	0.02	—	—	15	0.04
Gray corrugated	1	0.01	—	—	4	0.01
Cibola White Ware	76	0.47	36	0.59	1,632	3.91
Brown plain	13,473	82.89	5,824	96.11	18,253	43.75
Brown corrugated	74	0.46	9	0.15	8,840	21.19
Total	16,254	100	6,060	100	41,721	100

identifying the typical ceramic signature for Tonto Basin at particular increments of time across the pre-Classic period. Second, the frequencies of key ceramic categories occur in low numbers in any individual context, and we cannot obtain reliably large sample counts without grouping contexts. Third, we suspect that the ceramic frequencies for any particular set of contemporary contexts are subject to some amount of variability and averaging a set of contemporary contexts is the only mechanism for determining the typical ceramic signature. Fourth and finally, we need some chronometric method independent of ceramics and phases to measure time and define contemporary groups for averaging.

For each context in the pre-Classic period data set, we identified an array of other contexts that were archaeomagnetically indistinguishable at the 5 percent significance level. These contexts were potentially contemporary on the basis of archaeological and archaeomagnetic evidence, and ceramics had been recovered and tabulated from most of them. As discussed above, calendrical dates were obtained for each array by pooling the archaeomagnetic dates of the individual contexts included in the array. We then tabulated the pooled ceramic counts for each individual year between A.D. 848 and 1100. We want to point out that although each array is potentially unique, it is possible, and even likely, that it shares one or more contexts with other arrays in the data set. Furthermore, the ceramic counts of any particular feature will contribute to the totals for each array in which it is included, and it is likely that a single feature's ceramic counts will contribute to the totals for multiple arrays.

Because the arrays varied in the number of included contexts and in the frequency of ceramics, we chose to smooth the ceramic data through a running average. To do this, we modeled the ceramic trends using a running average with a 20-year interval moved at 1-year increments. We calculated the running averages from A.D. 848–1100, despite the fact that the data sets are truncated at A.D. 848 and 1100. Because of these truncations, the running averages for the intervals A.D. 848–858 and A.D. 1091–1100 are based on progressively decreasing number of years.

Table 22. Estimated Frequencies of Ceramic Wares from Pre-Classic Contexts in Tonto Basin, A.D. 850–1100

Date (A.D.)	Pre-Classic Period Wares (%)			Classic Period Wares (%)										
	Brown Plain	Red Plain	Hohokam Buff Ware	Cibola White Ware	Tusayan White Ware	Little Colorado White Ware	Indeterminate White Ware	Brown Corrugated	Red Corrugated	Gray Corrugated	Gray Plain	Roosevelt Red Ware	White Mountain Red Ware	Mogollon Brown Ware
1100	76.34	4.58	3.82	1.53	4.58	1.53	—	6.87	0.76	—	—	—	—	—
1075	85.26	5.53	5.82	0.60	0.50	0.18	0.13	0.74	0.10	0.02	0.03	0.05	0.03	0.27
1050	89.17	3.58	5.18	0.39	0.06	0.02	0.09	0.13	0.02	—	—	0.06	0.02	0.17
1025	88.57	3.94	5.62	0.32	—	—	0.06	0.39	0.06	—	—	0.06	—	0.06
1000	86.77	4.63	6.58	0.29	0.14	—	—	0.58	0.07	—	—	0.07	—	—
975	89.23	1.54	9.23	—	—	—	—	—	—	—	—	—	—	—
950	87.52	3.17	8.01	0.19	0.19	—	0.19	0.37	—	—	0.19	0.19	—	—
925	85.71	—	14.29	—	—	—	—	—	—	—	—	—	—	—
900	79.63	1.04	18.50	0.21	0.21	—	—	—	0.42	—	—	—	—	—
875	78.19	7.02	13.86	0.18	—	—	0.18	0.55	—	—	—	—	—	—
850	88.25	1.04	8.73	0.47	0.52	0.05	0.14	0.28	0.19	—	—	—	—	0.33

Note: Percentages based on running averages with a 20-year interval moved at 1-year increments from A.D. 848 to 1100. Trace amounts of San Juan Red Ware and Hopi wares are not shown in this summary. Percentages for indeterminate wares not shown.

Thus, smoothing is not as efficient for the early and late ends of the period. Finally, to control for variation in the ceramic totals calculated for each year, we calculated the relative percentage of the ceramic wares relative to the total ceramic count for that year.

Table 22 provides the estimated ceramic frequencies at 25-year intervals for the period between A.D. 850 and 1100; we see no need to present the results at finer intervals than this. To explore temporal trends in the distribution of these wares, we evaluated the correlation between the frequency of each ware and time. The Pearson Product Moment (*r*) scores and the coefficients of determination (r^2) of each ceramic ware are presented in Table 23. These scores were computed from the distribution of the smoothed ceramic scores for each 1-year interval from A.D. 850 to 1100 and not strictly on the interval values presented in Table 22. The scores in Table 23 are presented in descending order. A positive correlation indicates that the frequency increases over time and a negative correlation indicates that the frequency decreases over time. It is notable that Hohokam Buff Ware produced a highly negative correlation, indicating a significant decrease in frequency by the end of the period.

Because the Ash Creek phase currently is defined by a decrease in the frequency of Hohokam Buff Ware ceramics and an increase in the frequency of northern white ware ceramics, we calculated the ratios of Hohokam Buff Ware to various white wares over the period between A.D. 850 and 1100 (Table 24). We also explored the ratio of painted wares attributed to the pre-Classic period (buff ware and white wares) relative to brown plain through time. Finally, we assessed the ratio of brown corrugated ceramics to brown plain ceramics as an indicator for the intrusion of Classic period wares into these pre-Classic period deposits. This last index provides an estimate of the occurrence of other Classic period wares (e.g., red corrugated, Roosevelt Red Ware, Mogollon Brown Ware, and White Mountain Red Ware) that occur variously in pre-Classic period contexts (see Table 22). Many of these dated contexts occurred at multicomponent sites, and therefore, few, if any, should be considered pristine (see Whittlesey 1994:392).

The ratios of buff and white ware ceramics confirm our previous conclusion that the ceramic data do not support the current definition of the Ash Creek phase. The Hohokam Buff Ware ceramics decline over time as expected (see Table 22), but white ware ceramics do not dominate over buff ware ceramics until A.D. 1100. The value presented for A.D. 1100 is actually the average for the last decade of the eleventh century, A.D. 1091–1100. Because the archaeomagnetic data set is artificially truncated at about that time, we should not take the ratios for A.D. 1100 too literally; yet they suggest that the shift in trade direction and/or affiliation that the Ash Creek phase is intended to represent did not occur until about A.D. 1100.

Discussion

These two tests of the Ash Creek phase data suggest that this phase does not represent a discrete and definitive period in Tonto Basin prehistory. The test based on the phase assignments indicates that contexts assigned to the Ash Creek phase were contemporary with contexts assigned to the Sacaton phase. The only possible way that Ash Creek phase contexts would date later than the Sacaton phase is if they were part of the Classic period. This latter proposition is discounted by the differences in the Ash Creek and Classic period ceramic assemblages. The second test looking for the specific ceramic signature of the Ash Creek phase in the pre-Classic period data set also failed to substantiate the phase as it is currently defined and dated. We did identify a shift from a predominantly buff ware assemblage to a predominantly white ware ceramic assemblage as expected, but this shift occurred only at A.D. 1100, or perhaps in the last decade of the eleventh century, at the earliest. Based on these two evaluations, we must conclude that the Ash Creek phase is entirely subsumed within the temporal distribution of the Sacaton phase.

The Classic Period

The Classic period phase sequence is dependent in large part on ceramics and particularly the presence or absence of Roosevelt Red Ware ceramics (Whittlesey 1994:392). In many cases, ceramic indicators for this period are ambiguous, because many Tonto Basin sites have multiple temporal components, and the ceramic collections from these sites reflect mixed time periods (Whittlesey 1994:392). Because of the overlaying and intermingling of the debris from these different components, it is difficult to tease out the ceramic indicators of the various phases based on context alone, and researchers most often rely on the production dates of the various pottery types to attribute them to phases (Vint 2000a; Whittlesey 1994). In this section, we look at the ceramic collections from Classic period contexts to identify patterns and trends in the ceramic data.

Ceramic Trends

The estimated percentages of the various ceramic wares from Classic period contexts are summarized in Table 25 at 25-year intervals from A.D. 1100 to 1425. These frequencies were calculated in the same manner described above for the pre-Classic period wares; that is, we calculated running averages for 20-year intervals at 1-year increments through the pooled ceramic counts for the archaeomagnetic groupings. Likewise, we evaluated the correlation between the frequency of each ceramic ware and time in order to evaluate

Table 23. Correlation of Percentages of Ceramic Wares with Time from Pre-Classic Contexts in Tonto Basin, A.D. 850–1100

Ceramic Ware	r[a]	r^2
Cibola White Ware	0.58	0.34
White Mountain Red Ware	0.51	0.26
Little Colorado White Ware	0.49	0.24
All white ware	0.48	0.23
Brown Corrugated	0.47	0.22
Roosevelt Red Ware	0.46	0.21
All corrugated ware	0.45	0.20
Tusayan White Ware	0.38	0.14
Mogollon Brown Ware	0.36	0.13
Salado Red Corrugated	0.31	0.09
Gray Corrugated	0.31	0.09
Red plain	0.24	0.06
Indeterminate white ware	0.24	0.06
Gray plain	0.21	0.04
Brown plain	0.04	—
Hohokam Buff Ware	−0.73	0.54

Note: Data presented in descending order by *r*.
[a] *r* = Pearson's Product Moment Score.

Table 24. Selected Ratios of Ceramic Wares for the Pre-Classic Period

Date (A.D.)	Painted/ Brown Plain	Buff/ Brown Plain	Cibola/ Buff	Tusayan/ Buff	Little Colorado/ Buff	White Ware/ Buff	Corrugated/ Brown Plain
1100	0.15	0.05	0.40	1.20	0.40	2.00	0.0900
1075	0.08	0.07	0.10	0.09	0.03	0.24	0.0087
1050	0.06	0.06	0.07	0.01	—	0.11	0.0015
1025	0.07	0.06	0.06	—	—	0.07	0.0044
1000	0.08	0.08	0.04	0.02	—	0.07	0.0067
975	0.10	0.10	—	—	—	—	—
950	0.10	0.09	0.02	0.02	—	0.07	0.0043
925	0.17	0.17	—	—	—	—	—
900	0.24	0.23	0.01	0.01	—	0.02	—
875	0.18	0.18	0.01	—	—	0.03	0.0071
850	0.11	0.10	0.05	0.06	0.01	0.14	0.0032

the distribution trends of these wares. As with the pre-Classic period analysis, we calculated the Pearson Product Moment (r) scores and the coefficients of determination (r^2) of each ceramic ware (Table 26) from the distribution of the smoothed ceramic scores for each 1-year interval from A.D. 1100 to 1425. The scores in Table 26 are presented in descending order. A positive correlation indicates that the frequency increases over time and a negative correlation indicates that the frequency decreases over time.

The purpose of this analysis is to explore patterns in the data, rather than attempting to date archaeological deposits through these data. With this in mind, the data suggest that five wares have a fairly strong positive correlation with time. These are Roosevelt Red Ware, White Mountain Red Ware, brown corrugated, gray corrugated, and Hopi Yellow Ware. The composite frequency of Classic period painted wares is also fairly strong. This latter correlation is driven primarily by the frequency of Roosevelt Red Ware. As a group, these wares seem to be the primary indicators of the later part of the Classic period.

Conversely, there are two wares that have a moderate to fairly strong negative correlation with time. These are

Table 25. Estimated Percentages of Ceramic Wares from Classic Contexts in Tonto Basin, A.D. 1100–1425

Ware Type	Mean Date (A.D.)													
	1100	1125	1150	1175	1200	1225	1250	1275	1300	1325	1350	1375	1400	1425
Brown corrugated	20.08	14.77	12.6	12.41	13.76	15.45	23.5	24.19	25.27	22.26	22.56	22.94	22.68	17.95
Brown plain	34.82	47.4	43.57	52.13	47.34	49.83	44.43	32.84	44.08	42.71	40.5	41.5	41.85	52.32
Cibola White Ware	0.78	4.66	6.56	3.77	3.86	4.36	4.54	3.41	3.24	3.5	3.14	2.85	2.53	3.2
Gray corrugated	—	—	—	—	—	—	—	—	0.03	0.02	0.01	0.01	0.02	0.06
Gray plain	—	0.17	—	0.02	0.02	0.02	0.03	0.01	0.02	0.04	0.05	0.04	0.05	0.13
Hohokam Buff Ware	0.97	1.17	1.12	1.42	1.42	1.58	1.75	0.98	1	0.96	0.99	0.92	0.93	1.67
Hopi Ware	—	—	—	—	—	—	—	0.06	0.04	0.03	0.04	0.04	0.04	0.06
Little Colorado White Ware	0.58	0.58	0.91	0.84	0.97	1.04	0.35	0.22	0.18	0.12	0.08	0.08	0.06	0.06
Mogollon Brown Ware	1.65	1.96	2.34	0.77	0.66	1.06	1.05	1.01	0.7	0.72	0.63	0.56	0.46	0.78
Red plain	35.31	16.56	16.76	14.57	16.96	12.48	12.47	18.16	13.29	15.68	16.92	15.96	16.29	12.4
Roosevelt Red Ware	0.1	0.96	1.12	0.97	1.14	1.41	1.66	9.56	4.15	6.41	9.2	9.36	9.78	3.7
Salado Red Ware	—	3.58	2.04	0.27	0.31	0.71	0.8	0.83	0.65	0.81	0.65	0.63	0.48	0.93
Salado Red Corrugated	1.55	6.58	11.59	12.11	12.95	11.21	8.23	7.46	6.06	5.1	3.32	3.23	2.9	4.4
Showlow Red Ware	—	—	0.07	0.04	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Tusayan White Ware	—	0.04	—	0.02	0.03	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.03
White Mountain Red Ware	1.07	1.08	1.12	0.5	0.4	0.55	0.85	1.11	1.1	1.41	1.76	1.74	1.8	2.14
Indeterminate white ware	2.81	0.37	0.09	0.15	0.12	0.19	0.28	0.09	0.15	0.16	0.11	0.09	0.1	0.13
Indeterminate	0.29	0.12	0.09	0.02	0.03	0.04	0.01	0.03	0.02	0.03	0.02	0.03	0.02	0.04

Table 26. Correlation of Percentages of Ceramic Wares with Time during the Classic Period, A.D. 1100–1425

Ceramic Ware	r[a]	r^2
Roosevelt Red Ware	0.87	0.76
White Mountain Red Ware	0.80	0.64
All Classic period painted ware	0.76	0.58
Brown corrugated	0.76	0.58
Gray corrugated	0.73	0.53
Hopi Ware	0.72	0.52
Gray plain	−0.05	0.00
Salado Red	−0.22	0.05
Cibola White Ware	−0.31	0.10
Tusayan White Ware	−0.31	0.10
Red plain	−0.33	0.11
Hohokam Buff Ware	−0.35	0.12
Indeterminate white ware	−0.37	0.14
Brown plain	−0.45	0.20
Showlow Red Ware	−0.48	0.23
Mogollon Brown Ware	−0.57	0.32
All white wares	−0.63	0.40
Salado Red Corrugated	−0.75	0.56
Little Colorado White Ware	−0.85	0.72
All red ware	−0.86	0.74

Note: Data presented in descending order by *r*.

[a] r = Pearson's Product Moment Score.

Little Colorado White Ware and red corrugated ceramics. The composite frequencies of all white wares and all red wares also have fairly strong negative correlations with time. This group would seem to be the key ceramic indicators of the early part of the Classic period. In addition to these four ceramic indicators, other ceramic wares have a weaker negative correlation with time and are thus secondary ceramic indicators of the early part of the Classic period. We mention Salado Red (Salado White-on-red), Showlow Red Ware, and Mogollon Brown Ware (McDonald Painted Corrugated and San Carlos Red-on-brown) specifically, because these are conventionally recognized as ceramic indicators of the early part of the Classic period. The trends shown here support this common inference but also indicate that these latter wares are not robust indicators.

The frequency distribution of all Classic period painted wares, Roosevelt Red Ware, White Mountain Red Ware, and the sum of all white wares are illustrated graphically in Figure 28. This figure scales the trends summarized in Table 26 relative to one another. We projected the polynomial trend lines through these data that we believe best represent the trends. When viewed together, the ceramic data suggest that we could divide the Classic period into two intervals, with the breakpoint somewhere between A.D. 1250 and 1300. The trend in the composite Classic period painted wares indicates the possibility of two modes. It is clear that the "early" mode, at about A.D. 1150, is based on the frequency of white wares in Tonto Basin. There is also a slight peak in the percentage of White Mountain Red Ware at about A.D. 1150. It is also clear that the "late" mode is determined by the distribution of Roosevelt Red Ware ceramics and secondarily by the occurrence of White Mountain Red Ware ceramics.

Conventionally, the earliest part of the Classic period (i.e., Miami phase) is defined primarily by the absence of Roosevelt Red Ware but secondarily by a suite of white wares, red wares, and painted corrugated wares (Doyel 1976b; Elson 1996; Whittlesey 1994). The ceramic signature consisting of the dominance of white wares (primarily Little Colorado White Ware) and red wares that we observe for the early part of the Classic period corresponds to the ceramic signature that Ciolek-Torrello, Whittlesey, and Deaver (1994:600, 620) have associated with the Miami phase. The predominance of the white ware ceramics over the preceding buff ware ceramics is a signature that appeared just at the end of the pre-Classic period. A review of the dates associated with this signature would suggest that white ware emerged as the predominant ceramic ware by roughly A.D. 1100 and remained so until about A.D. 1275. Eventually the white wares were replaced by the rise of Roosevelt Red Ware and White Mountain Red Ware as the dominant decorated types. These two wares are the core of the ceramic signature of the later part of the Classic period. Other wares, such as the Hopi wares, are an infrequent but key component to this signature. Correspondence of this signature with the archaeomagnetic dates would indicate that it existed from about A.D. 1250 to at least A.D. 1425.

Radiocarbon Assessment of the Timing of the Pre-Classic–Classic Period Transition

The final part of this study used radiocarbon data to assess the timing of the transition between the pre-Classic and Classic periods. Throughout this study, we have relied on the assumption that the transition between these two periods occurred at roughly A.D. 1150, and this assumption played a key role in structuring the archaeomagnetic data set. As a test of the validity of this assumption and an attempt to clarify when the transition between these two periods occurred, we constructed a model of the transition in OxCal (v. 3.10; Bronk Ramsey 1995, 1998, 2001) that used the ceramic analysis subsets discussed above to divide the radiocarbon data set into pre-Classic and Classic groups.

In all, 52 radiocarbon determinations from 26 sites in Tonto Basin were included in this study (Table 27). Each of these determinations was associated with a feature that was included in the ceramic analysis discussed in the previous section. We limited our radiocarbon data set to these features so that we had an independent means of subdividing the data set into pre-Classic and Classic period subsets. In a few cases, multiple determinations were obtained for a single feature, and the internal consistency of these determinations was assessed through chi-squared tests performed in OxCal. Features with statistically different radiocarbon determinations at the five-percent significance level were excluded from the remainder of this analysis. Statistically indistinguishable determinations, on the other hand, were pooled using OxCal's Combine function. This method for combining calibrated radiocarbon dates is preferred over other pooling methods, because it satisfies Ward and Wilson's (1978) Type II requirement of accounting for the variability in the calibration curve. Rather than treating the calibrated date ranges to be combined as flat or normal probability distributions, the actual calibration probability distributions associated with each are combined, thereby amplifying shared peaks in probability and minimizing background noise associated with the calibration curve. All determinations were calibrated in OxCal using the IntCal04 (Reimer et al. 2004) data set.

The pre-Classic and Classic period subsets were loaded into a Bayesian model in OxCal, and the boundary between

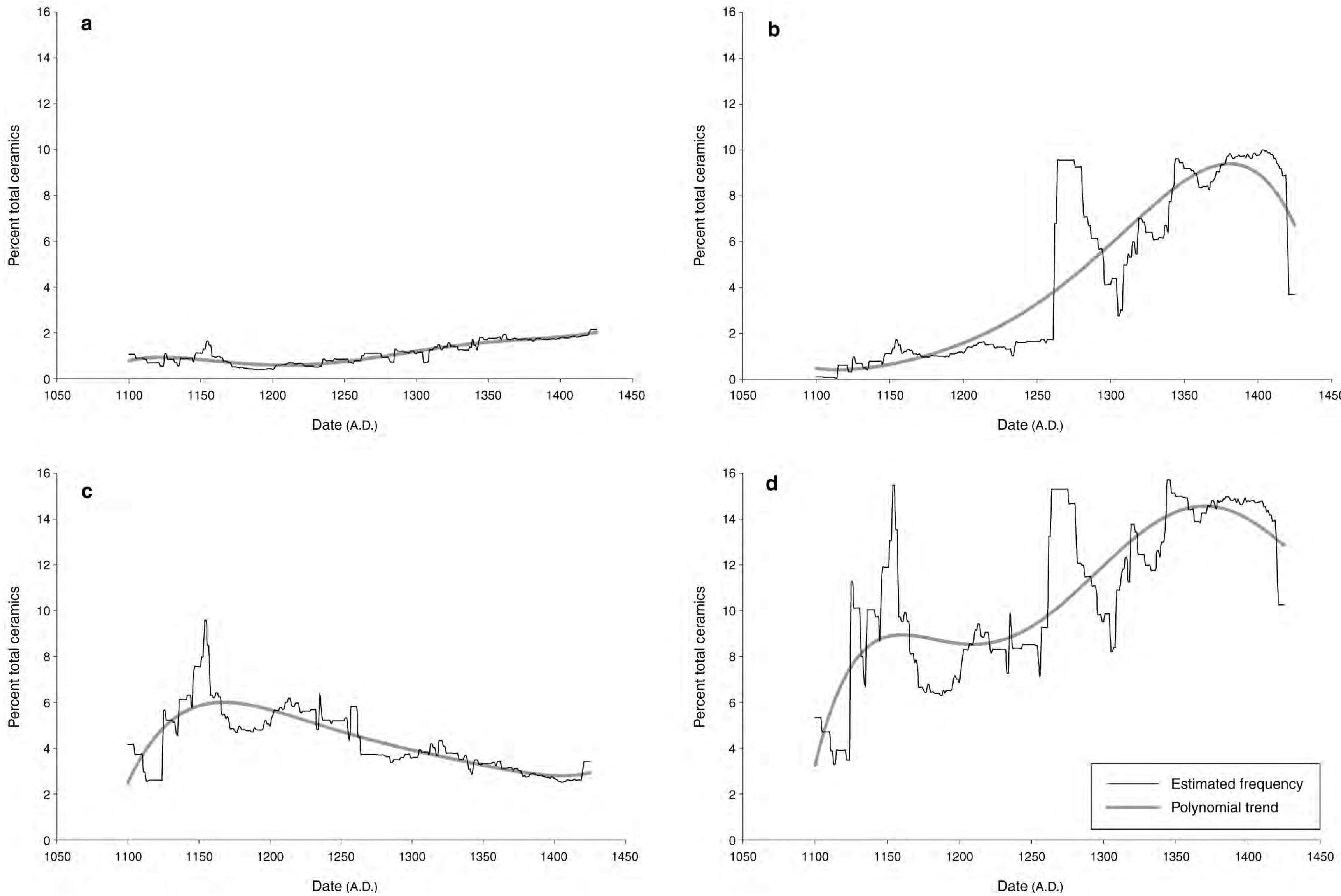

Figure 28. Time trends for selected Classic period wares: (*a*) White Mountain Red Ware, (*b*) Roosevelt Red Ware, (*c*) all white wares combined, and (*d*) all painted pottery combined.

Table 27. Radiocarbon Data Used in the OxCal Model, by Project

Site No.	Feature No.	Period	Sample No.	Corrected ^{14}C Age	Reference
			Mazatzal Rest Area		
AZ O:15:111 (ASM)	Pit structure F 14	Classic	UCR-3393/ CAMS-24108	520 ± 50	Bilsbarrow 1997a
			Carlota Data Recovery		
AZ U:12:69 (ASM)	Room F 9	Classic	Beta-103636	550 ± 60	Mitchell et al. 2001
AZ V:9:233 (ASM)	Pit structure F 4	pre-Classic	Beta-103640	990 ± 80	Mitchell et al. 2001
AZ V:9:237 (ASM)	Pit structure F 38	pre-Classic	Beta-101038	870 ± 60	Mitchell et al. 2001
	Pit structure F 8	pre-Classic	Beta-101037[a]	770 ± 70	Mitchell et al. 2001
	Pit structure F 9	pre-Classic	Beta-103642	940 ± 60	Mitchell et al. 2001
	Pit structure F 9	pre-Classic	Beta-103643	870 ± 50	Mitchell et al. 2001
	Pit structure F 9	pre-Classic	Beta-70592[a]	1030 ± 50	Mitchell et al. 2001
AZ V:9:244 (ASM)	Pit structure F 10	pre-Classic	Beta-101683	850 ± 60	Mitchell et al. 2001
			Tonto Creek Archaeological Project		
AZ U:3:286 (ASM)	Pit structure F 8	pre-Classic	Beta-96313	1300 ± 60	Clark and Vint 2000
AZ U:3:294 (ASM)	Pit structure F 15	pre-Classic	Beta-100161	1100 ± 50	Clark and Vint 2000
	Pit structure F 17	pre-Classic	Beta-100163	1450 ± 50	Clark and Vint 2000
	Pit structure F 57	pre-Classic	Beta-100162	1010 ± 50	Clark and Vint 2000
AZ U:3:298 (ASM)	Pit room F 205	pre-Classic	Beta-100169	930 ± 50	Clark and Vint 2000
	Pit structure F 1	pre-Classic	Beta-100167	1030 ± 50	Clark and Vint 2000
	Pit structure F 2	pre-Classic	Beta-100166	1010 ± 50	Clark and Vint 2000
	Pit structure F 3	pre-Classic	Beta-100165	890 ± 50	Clark and Vint 2000
AZ U:3:299 (ASM)	Pit room F 25	pre-Classic	Beta-100171	910 ± 50	Clark and Vint 2000
	Pit structure F 15	pre-Classic	Beta-100170	1000 ± 50	Clark and Vint 2000
AZ U:3:352 (ASM)	Pit structure F 1	pre-Classic	Beta-100157	1180 ± 50	Clark and Vint 2000
	Pit structure F 3	pre-Classic	Beta-100156	1240 ± 50	Clark and Vint 2000
			SR 87–Sycamore Creek Project		
AZ U:3:304 (ASM)	Pit structure F 7	Classic	Beta-106179	910 ± 50	Vanderpot et al. 1999
	Pit structure F 7	Classic	UCR-3567	870 ± 50	Vanderpot et al. 1999
	Pit structure F 7	Classic	UCR-3568[a]	1000 ± 50	Vanderpot et al. 1999
AZ U:3:323 (ASM)	*Horno* F 1	pre-Classic	Beta-106181[a]	620 ± 50	Vanderpot et al. 1999
AZ U:3:333 (ASM)	*Horno* F 1	Classic	Beta-106182	760 ± 50	Vanderpot et al. 1999
AZ U:3:337 (ASM)	Pit structure F 4	pre-Classic	Beta-106183	1280 ± 90	Vanderpot et al. 1999
AZ U:3:341 (ASM)	Pit structure F 5	pre-Classic	UCR-3577	1270 ± 50	Vanderpot et al. 1999
			SR 188–Cottonwood Creek Project		
AZ U:3:405 (ASM)	Hearth F 11.2	Classic	Beta-154338	890 ± 40	Volume 1
	Pit structure F 179	Classic	Beta-154332	890 ± 40	Volume 1
AZ U:3:407 (ASM)	Pit structure F 1	Classic	Beta-154335[a]	1040 ± 40	Volume 1
	Pit structure F 3	Classic	Beta-154337[a]	1000 ± 40	Volume 1
			Ash Creek Project		
AZ U:3:51 (ASU)	Pit structure F 1	pre-Classic	AC-5	930 ± 50	Woodward et al. 1985
			SR 87–Pine Creek Project		
AZ U:3:83 (ASM)	Pit structure F 6	pre-Classic	Beta-31681	950 ± 60	Green 1990
	Pit structure F 6	pre-Classic	Beta-32582	980 ± 50	Green 1990

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Site No.	Feature No.	Period	Sample No.	Corrected ^{14}C Age	Reference
AZ U:3:87 (ASM)	Pit structure F 3	pre-Classic	Beta-31677	850 ± 130	Green 1990
			Roosevelt Rural Sites Study		
AZ U:8:221 (ASM)	Room F 7	Classic	TX-7263	720 ± 60	Ciolek-Torrello, Shelley, et al. 1994
	Room F 7	Classic	TX-7264	720 ± 60	Ciolek-Torrello, Shelley, et al. 1994
AZ U:8:224 (ASM)	Pit structure F 11	pre-Classic	TX-7271	960 ± 60	Ciolek-Torrello, Shelley, et al. 1994
AZ U:8:225 (ASM)	Pit structure F 10	pre-Classic	TX-7267	1150 ± 120	Ciolek-Torrello, Shelley, et al. 1994
	Pit structure F 8	pre-Classic	TX-7268	1200 ± 80	Ciolek-Torrello, Shelley, et al. 1994
	Pit structure F 8	pre-Classic	TX-7269	1140 ± 60	Ciolek-Torrello, Shelley, et al. 1994
			Roosevelt Platform Mound Study		
AZ U:8:24 (ASM)	Room F 117	Classic	Beta-46560[a]	960 ± 70	McCartney et al. 1994
	Room F 124	Classic	Beta-46554[a]	1160 ± 50	McCartney et al. 1994
	Room F 188	Classic	Beta-46562	910 ± 60	McCartney et al. 1994
	Room F 316	Classic	Beta-46563	680 ± 70	McCartney et al. 1994
	Room F 41	Classic	Beta-46556	550 ± 40	McCartney et al. 1994
	Room F 56	Classic	Beta-46561[a]	900 ± 50	McCartney et al. 1994
	Room F 56	Classic	Beta-46566	670 ± 50	McCartney et al. 1994
	Room F 87	Classic	Beta-46564	880 ± 60	McCartney et al. 1994
			SR 88–Wheatfields Project		
AZ V:9:325 (ASM)	Pit structure F 35	pre-Classic	Beta-122336	910 ± 30	Doyel and Hoffman 2003a
AZ V:9:365 (ASM)	Pit structure F 101	pre-Classic	Beta-122339	940 ± 40	Doyel and Hoffman 2003a

Key: F = Feature.

[a] Indicates samples that were deemed outliers in their respective subset.

the two subsets was estimated from the range and distribution of the total data set (Figure 29). Because the dates in the group are assumed to be Poisson-distributed over a discrete period of time and the data set is assumed to be representative of the time period of interest, the model is able to identify potential outliers near the group boundaries. In OxCal, this involves constraining the end of the earlier group (the pre-Classic period subset) with the beginning of the later group (the Classic period subset). Four of the Classic period subset determinations and two of the pre-Classic period determinations were deemed outliers; these outliers are designated with an asterisk in Table 27, and they were removed from the model. With the outliers removed, the model passed OxCal's internal agreement tests (Bronk Ramsey 1995:429), and the transition from the pre-Classic to Classic periods was estimated to have occurred between A.D. 1120 and 1200 (A.D. 1140–1190 at 1σ) (Figure 30), with a median age estimate of roughly A.D. 1160. These findings provide quantitative support for the conventional placement of the transition between these two periods at ca. A.D. 1150.

Discussion and Conclusions

Archaeomagnetic dating is a chronometric tool that we can use to understand the timing of ancient archaeological events. However, the cyclical nature of geomagnetic secular variation places limitations on how the technique can be applied. In this study, we have been concerned primarily with dating the material-culture patterns that signify the transition from the pre-Classic to the Classic period in Tonto Basin. Because this transition coincides with a loop in the path of secular variation, archaeomagnetism has traditionally generated ambiguous dates for this period. Fortunately, extant knowledge regarding the Tonto Basin archaeological record allows us to segregate archaeomagnetic data into subsets that relate to distinct and unique segments of the secular variation record. Thus, an important contribution of this study is the integration of archaeological knowledge to create prior expectations of the archaeomagnetic data. This allows us to view Tonto Basin prehistory from a unique perspective and to evaluate material-culture patterns at a high level of resolution.

Tonto Basin Phase Sequence Evaluated

In this final section, we examine the overall accuracy of using the existing pre-Classic and Classic period Tonto Basin phase assignments as chronological markers for placing archaeological contexts within the correct blocks of time. This evaluation included nondisputed phases that pre-and postdated the transitional period (e.g., Santa Cruz, Gila Butte, and Gila phases), in addition to the Sacaton, Ash Creek, and Miami phases, to provide a comparison with the transition phases. It should be noted that this evaluation is structured differently than the architectural analysis presented above.

The regional archaeomagnetic database includes 225 VGPs, each representing a discrete archaeological event in Tonto Basin prehistory. We evaluated the distribution of the pooled mean archaeomagnetic dates for these contexts to determine how many date within the expected range of the archaeological phase and how many date outside the expected range. We tabulated the archaeomagnetic dates in successive 50-year intervals; however, because the dates range across a period of 580 years, the first interval is actually 55 years long and the final interval lasts only 25 years. The tabulation is presented in Table 28. The summary of how many contexts dated in and out of range is presented in Table 29. We focused on the period from the Santa Cruz through Gila phases. Because the Gila Butte phase contexts were expected to date before A.D. 850 and WB2000 begins at A.D. 846, we expected our dates for Gila Butte phase contexts to be inaccurate.

This evaluation is based only on the mean dates and does not consider the standard errors; thus, it is a stringent test of the phase as a dating tool. Despite this stringency, the distribution of archaeomagnetic dates for each archaeological phase is revealing. Much of the information summarized in Tables 28 and 29 is self-evident, and we draw attention only to the Sacaton and Roosevelt phases. First, nearly 70 percent of the contexts assigned to the Sacaton phase are dated outside the range. The tabulations presented in Table 28 clearly reveal the source of this inaccuracy. More than half of the Sacaton phase contexts date to the interval A.D. 1050–1099, which is within the range of the Ash Creek phase. Thus, the cultural traits that conventionally have been assigned to the Sacaton phase continued to be practiced by Tonto Basin populations up to the end of the pre-Classic period. This finding further supports the argument against the Ash Creek phase, because, by definition, two phases cannot be contemporary within a single geographic area.

The accuracy score for the Roosevelt phase is worse. More than 80 percent of contexts assigned to the Roosevelt phase date out of range. The dates for Roosevelt phase contexts span the entire Classic period. The only tendency evident among Roosevelt phase contexts appears to be that more of them actually date to the time of the Gila phase. The fact that so many of these contexts date to the Gila phase suggests that patterns that were present in the Roosevelt phase may have continued into the Gila phase, and that Gila phase contexts may be misidentified as Roosevelt phase contexts.

Based on these and other findings presented in this study, we offer several observations about the Tonto Basin phase sequence as it is currently formulated. First, our study indicates that the Ash Creek phase does not reflect a different block of time in Tonto Basin prehistory than the Sacaton

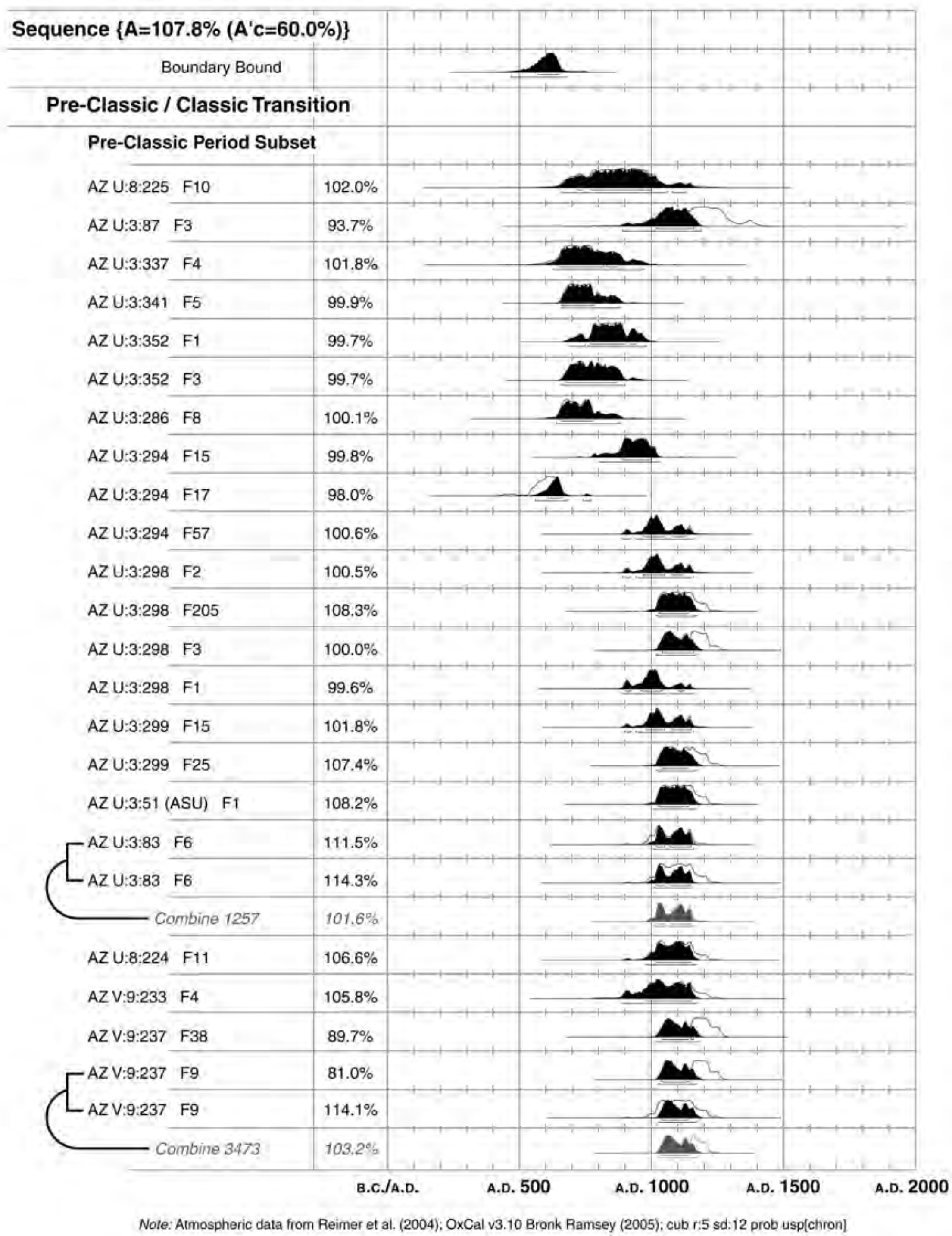


Figure 29. The OxCal model of the transition between the pre-Classic and Classic periods in Tonto Basin. The large square brackets down the left-hand side of the figure, along with the OxCal keywords (e.g., sequence, phase), define the overall model exactly. For each of the dates two probability distributions are plotted: one in outline and one solid. These distributions represent the relative probability that an event (e.g., the growth of a tree ring or seed) occurred at a particular time. The outline distribution is the result of simple calibration; the solid distribution is based on the chronological model and reflects constraints imposed by other data.

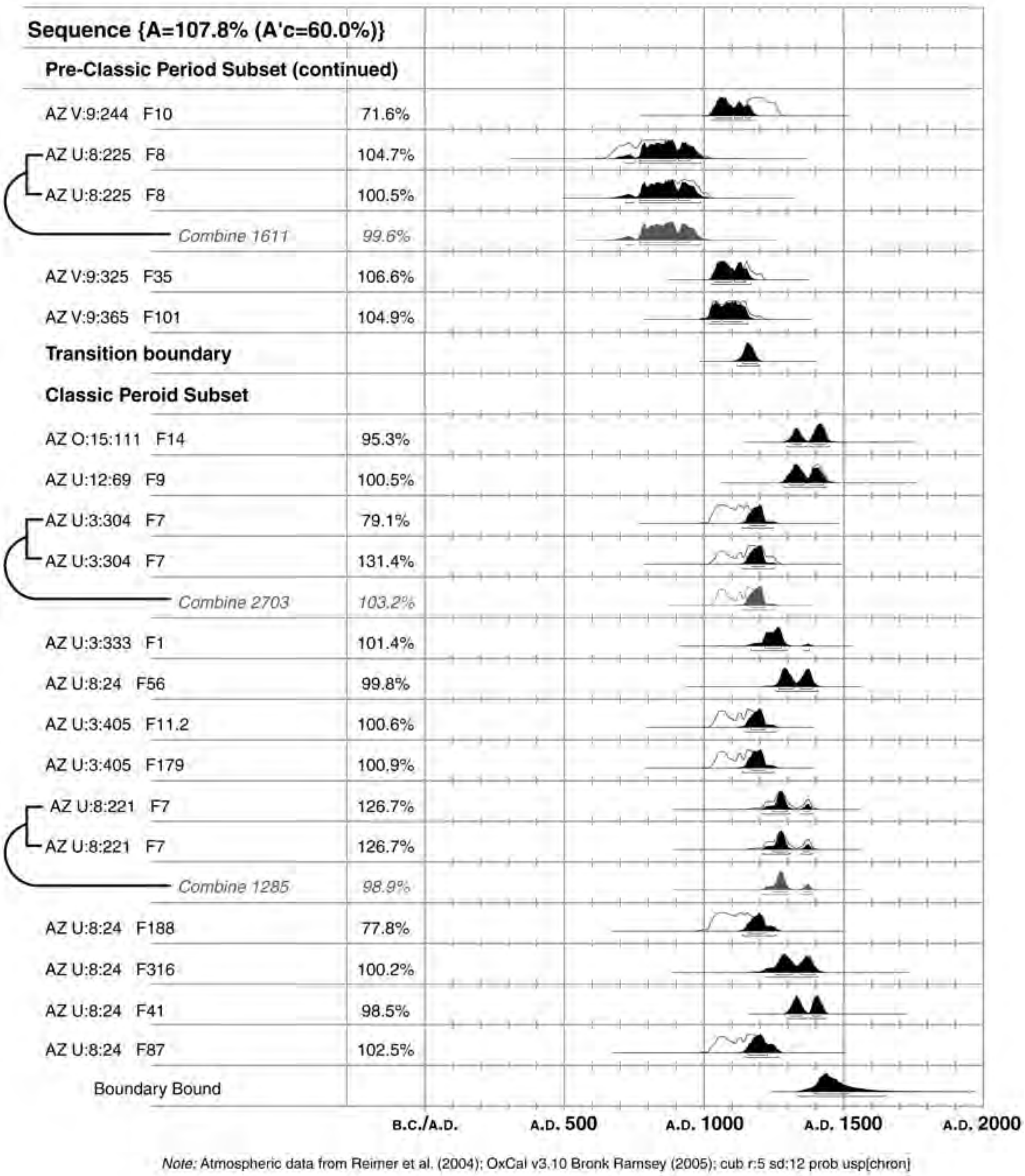


Figure 29. (*continued*).

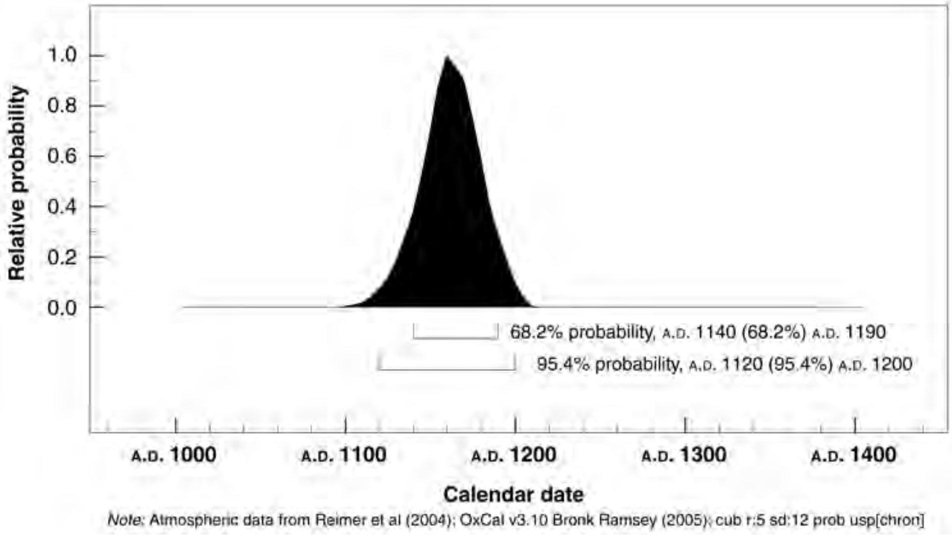


Figure 30. The calculated probability distribution for the transitional boundary between the pre-Classic and Classic periods in Tonto Basin, based on radiocarbon determinations for the combined pre-Classic and Classic period data sets.

phase but instead may reflect differences in personal preference and/or access to trade commodities. Because of this, we suggest that the Ash Creek phase should be removed from the phase sequence, and the entire period between A.D. 950 and 1150 should be ascribed to the Sacaton phase. In contrast, our analyses support the previous formulations of the Miami phase as reflecting the transitional period at the beginning of the Classic period. Likewise, this study quantitatively demonstrated that the transition between the pre-Classic and Classic periods in Tonto Basin occurred at roughly A.D. 1150, which supports the conventional placement of this transition. Finally, this study suggests that the Roosevelt and Gila phase definitions should be reevaluated, as should the timing of these two phases. The results from these analyses suggest that many Gila phase contexts have been attributed erroneously to the Roosevelt phase, possibly because hallmarks of the Gila phase were lacking. This last observation was not fully explored through the course of this study, but it holds important ramifications for interpretations of Tonto Basin prehistory during the late Classic period.

Summary

In this study, we used archaeomagnetic data to explore the timing of regional trends in architectural and ceramic styles during the pre-Classic–Classic period transition in Tonto Basin. To do this, we used well-defined regional patterns of material culture to divide the archaeological and associated archaeomagnetic data sets into the pre-Classic and Classic period subsets. We then examined the distribution of VGPs within these material and temporal subsets to delineate the temporal trends of different styles across the region. Finally, we used these chronometrically defined trends to assess the effectiveness of the accepted phase sequence for characterizing the complexity of the Tonto Basin archaeological record. We also used the material attribute patterns to structure a model that used radiocarbon data from Tonto Basin to assess quantitatively the timing of the transition between the pre-Classic and Classic periods in this region.

Our analyses resulted in four observations about the current Tonto Basin phase sequence. First, we found no support for the Ash Creek phase as a temporally distinct construct. Instead, the pattern that was used to define the Ash Creek phase appears to reflect differential preference for and/or access to trade commodities during the latter half of the Sacaton phase. Therefore, the Ash Creek phase should be removed from the Tonto Basin phase sequence. On the other hand, our analyses found support for the Miami phase construct within the ceramic and architecture data, as well as for the conceptualization of this phase as reflecting the transition into the early Classic period. Likewise, our analysis of radiocarbon data from this region supports the conventional dating of the transition between the pre-Classic and Classic periods at roughly A.D. 1150. Finally, in assessing the overall accuracy of phase assignments, we discovered that numerous potential Gila phase contexts had been attributed to the Roosevelt phase, suggesting that both phase definitions should be reevaluated. It is possible that Roosevelt phase characteristics continued for longer than previously thought and/or that key Gila phase attributes were not as widespread or common as previously thought. These possibilities have larger implications for interpretations of the Classic period in Tonto Basin, and they should be explored further in future projects.

Table 28. Summary of Archaeological Phase Assignments from A.D. 846 to 1425

Years A.D.	Colonial Period			Colonial-Sedentary Period	Sedentary Period			Sedentary-Classic Period		Classic Period						Total
	Unplaced	Gila Butte Phase	Santa Cruz Phase	Unplaced	Sacaton Phase	Sacaton or Ash Creek Phase	Ash Creek Phase	Ash Creek or Miami Phase	Unplaced	Unplaced	Miami Phase	Miami or Roosevelt Phase	Roosevelt Phase	Roosevelt or Gila Phase	Gila Phase	
1401–1425	—	—	—	—	—	—	—	—	—	—	—	6	8	1	6	21
1351–1400	—	—	—	—	—	—	—	—	—	4	—	2	11	—	8	25
1301–1350	—	—	—	—	—	—	—	—	—	2	—	4	6	—	1	13
1251–1300	—	—	—	—	—	—	—	—	—	—	1	2	3	—	—	6
1201–1250	—	—	—	—	—	—	—	—	—	2	2	5	6	—	—	15
1151–1200	—	—	—	—	—	—	—	2	—	—	5	8	8	—	2	25
1101–1150	—	—	—	—	1	—	—	1	1	—	2	3	6	—	1	15
1051–1100	1	—	2	2	27	1	6	—	—	—	—	—	—	—	—	39
1001–1050	1	—	—	1	11	—	3	—	—	—	—	—	—	—	—	16
951–1000	—	—	1	2	4	—	—	—	—	—	—	—	—	—	—	7
901–950	1	—	2	1	5	—	—	—	—	—	—	—	—	—	—	9
846–900	3	20	8	2	1	—	—	—	—	—	—	—	—	—	—	34
Total	6	20	13	8	49	1	9	3	1	8	10	30	48	1	18	225

Table 29. Number of Archaeological Contexts Dated Out of Phase

Phase	Out of Range	In Range	Estimate of Inaccuracy (%)
Gila	4	14	22.22
Roosevelt	39	9	81.25
Miami	3	7	30.00
Ash Creek	3	6	33.33
Sacaton	34	15	69.39
Santa Cruz	3	10	23.08

CHAPTER 4

Ceramic Form and Function

Robert A. Heckman

Ceramic containers are tools (Braun 1983). This presupposition is all too often lost in studies of Southwest pottery that focus on the social and ideological implications of the painted designs. In this study, I used ethnographic and ethnoarchaeological studies to derive morphological and use-alteration variables that define parameters of intended and actual vessel use. The morphological and use-alteration parameters provided a means of assigning intended vessel function to a sample of prehistoric containers. Suites of formal attributes collected from the prehistoric containers, such as profile morphology, container volume, orifice diameter, and wall thickness, allowed me to model vessel function and volume for a large sample of prehistoric rim sherds. The recorded attributes of individual vessels are presented in Volume 2, Appendix A.3. Ultimately, these data provided a means for inferring culinary activities. I also compared the functional assessments and morphology of the whole vessels to a sample of contemporaneous whole vessels from the Phoenix Basin.

Archaeological research strives to describe and explain human behavior. Material objects provide the primary focus of archaeological description. By contrast, past human behavior is not directly observable and must be inferred from material objects. The relationship between the static material-culture remains and the living sociocultural system that discarded the artifacts or left them behind by other means requires several things: (1) a clear statement of the questions asked, (2) explicit assumptions, and (3) logical links among the methods, sample, and the ultimate inferences.

Research Questions and Assumptions

The study presented here used the prehistoric ceramic material recovered from the CCP in Tonto Basin, Arizona (see Volume 2). The CCP generated a sizable sample of whole and reconstructible prehistoric vessels and numerous vessel fragments (see below). The research questions structuring the CCP guided the goals, scope, and methods of the present study. Three questions provide the research focus:

(1) For what purpose did the prehistoric people use the ceramic vessels?
(2) What do the containers tell us about the occupants' subsistence behaviors?
(3) Do use-wear patterns on the vessels and preserved botanical and pollen data independently corroborate or contradict the inferred culinary activities?

Several assumptions facilitate the research orientation and methods designed to answer these questions. First, human behavior in the past and present is patterned. The model used here recognizes a relationship of past and present human behavior with past and present material objects (Reid 1995; Reid, Schiffer, et al. 1995). Thus, the critical application of ethnographic cross-cultural and direct analogy provided powerful inferential potential and hypothetical metric parameters relating to vessel function. Also, prehistoric ceramic containers represent important tools and facilities primarily used for daily culinary activities. Finally, intended vessel function places technological and morphological constraints on vessels in most functional categories (Rice 1987:207–210, 237–242).

Ceramic containers are a single component in the subsistence system of prehistoric people. How these vessels functioned within this larger system is the objective of the current study. In any ceramic study, the most behaviorally meaningful analytical unit is the vessel. Therefore, even when dealing with sherds, the ultimate goal should be to provide inferences relating to the original container. I used an ethnographic model (see below) to infer container use (Heckman 2002). I examined through direct and proxy measurements the function and capacity of various containers. Ultimately, I provide hypothetical sets of behaviors associated with modes and techniques of food preparation, storage, and consumption.

Why are food habits important? All aspects of food behaviors are cultural phenomena. Although environmental factors impinge on a culture's foodways, the choices concerning what to grow, collect, and hunt combined with how to store, prepare, and consume food occur in a social context and are charged with cultural meaning. For example, the grains, vegetables, and meats found in a Chinese kitchen differ greatly from those found in an Italian kitchen. Further, the method of preparing, serving, and consuming the food is also different. Cushing (1920) noted that the Zuni people used meals and the manner of eating them to pass judgment on neighboring and distant peoples. Cushing's observation provides yet another example that underscores the cultural importance of food behaviors.

The Sample

The CCP resulted in the recovery of 221 whole and reconstructible vessels. Most derived from mortuary contexts and represented grave offerings interred with individuals. An *ideal* sample for addressing the proposed research questions would consist of containers recovered from floor contexts of ancient dwellings. The logic behind this assumption asserts that floor vessels were left in their context of use. Unfortunately, few archaeological situations provide researchers with such pristine and unambiguous contexts. In fact, the majority of archaeological collections consist of broken artifacts discarded by their users. The CCP is no exception; a large sample of rim sherds from general refuse deposits provided an excellent sample of used and discarded vessels directly associated with the occupations. The fragmented nature of the rim sherds and the nearly exclusive association of whole vessels with mortuary contexts provided a challenge, however. How do the mortuary vessels relate to culinary behaviors and how can vessel function and volume for the sample of rim sherds be determined?

The CCP mortuary collection appears to represent vessels that once functioned within the context of the daily activities relating to food preparation, consumption, and storage. The consistent occurrence of use wear observed on the vessels validated this assumption. The presence of such wear suggests that the vessels were not made exclusively to accompany individuals in the grave. Instead, they represent vessels removed from domestic use, and their *ultimate* context suggests a metaphysical function. Figure 31 provides an idealized "life history" of a ceramic container. Obviously, the schematic does not provide an exhaustive list of examples and scenarios of container use and reuse. The observations (e.g., use wear, presence of soot, or lack of reworking and refurbishing) made about the whole and reconstructible vessels and the rim sherds provide two plausible inferences relating to each of the sample's use-life histories. Figure 32 provides a schematic interpretation of the likely use-life history of most of the mortuary vessels. Figure 33 represents the inferred life history for the sample of rim sherds. These schematics are idealized and perhaps oversimplify the complexities of the potential cultural and natural formation processes represented by archaeological sites. Their purpose here is not to provide an interpretation of the precise mechanisms leading to the burial and ultimate preservation of the sample. Instead, the idealized schematics provide hypothetical sketches that show the differences in the two recovery contexts of vessels used in the current study.

The mortuary vessels provide a meaningful sample that reflects the range of vessel forms used by the prehistoric inhabitants for domestic purposes. As illustrated schematically in Figure 34 and discussed later in this chapter, the vast majority of the vessels recovered from mortuary contexts appear to have been used extensively within domestic contexts prior to being interred with an individual at the time of burial.

Initial comparisons of rim diameters from the mortuary vessels and the rim sherds from domestic contexts suggest that the jars represented in the mortuary collections compare favorably with the smaller vessels from domestic contexts. That is, the jars selected to be interred with individuals represent only the smaller vessels found in domestic contexts. This study and the methods used require metric and morphological observations from whole vessels. Therefore, I augmented the sample of whole vessels with examples of large jars (lacking from mortuary contexts in the CCP) from a collection of vessels recovered from nearby excavations by DAI (Clark 2000). These 14 vessels compare favorably in temporal and typological context to those collected during the CCP (Table 30). Ultimately, the collective attributes recorded for the entire sample of whole and reconstructible vessels provided the comparative foundations that facilitated the formal and functional analyses used to infer vessel form and function for rim sherds.

The Approach and Methods

Figure 35 provides a schematic flow chart showing the steps and methods used to derive functional assignments from the sample of prehistoric vessels and rims. I used the ethnographic and ethnoarchaeological model that links metric, morphological, and use-alteration variables to intended ceramic use (see below). The model provided

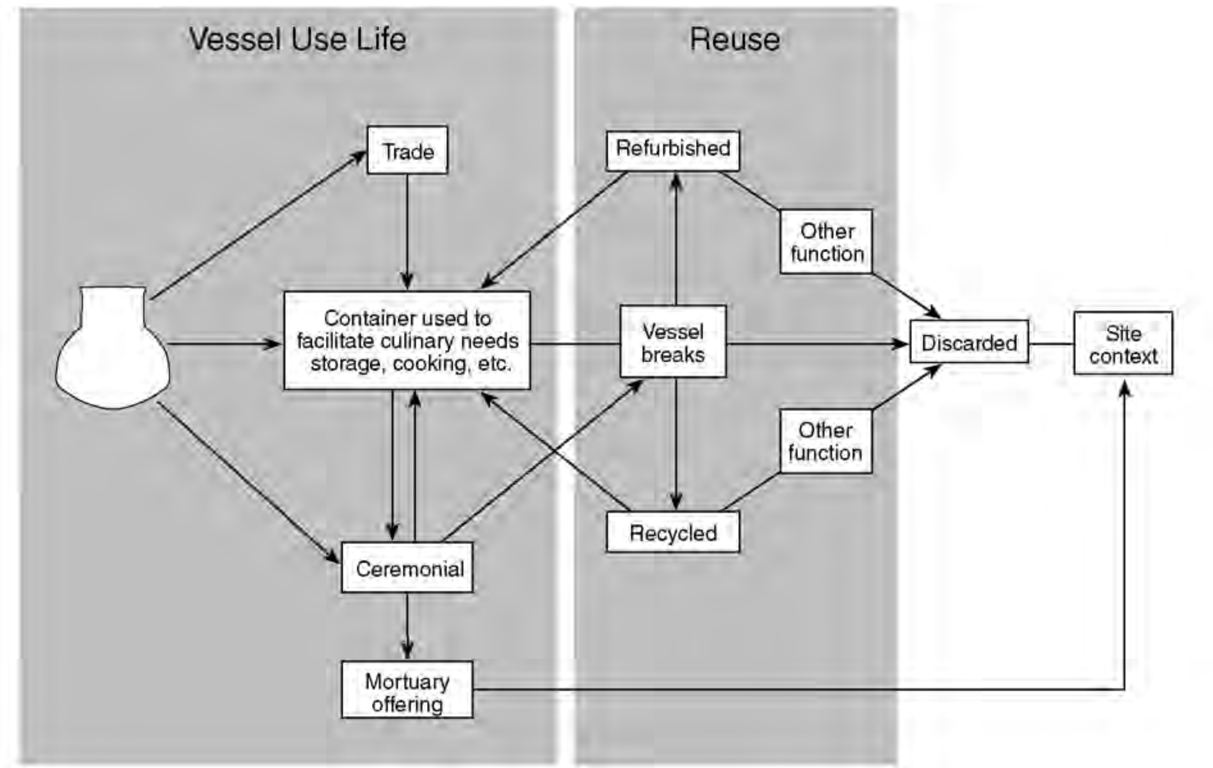


Figure 31. Idealized schematic showing vessel use life.

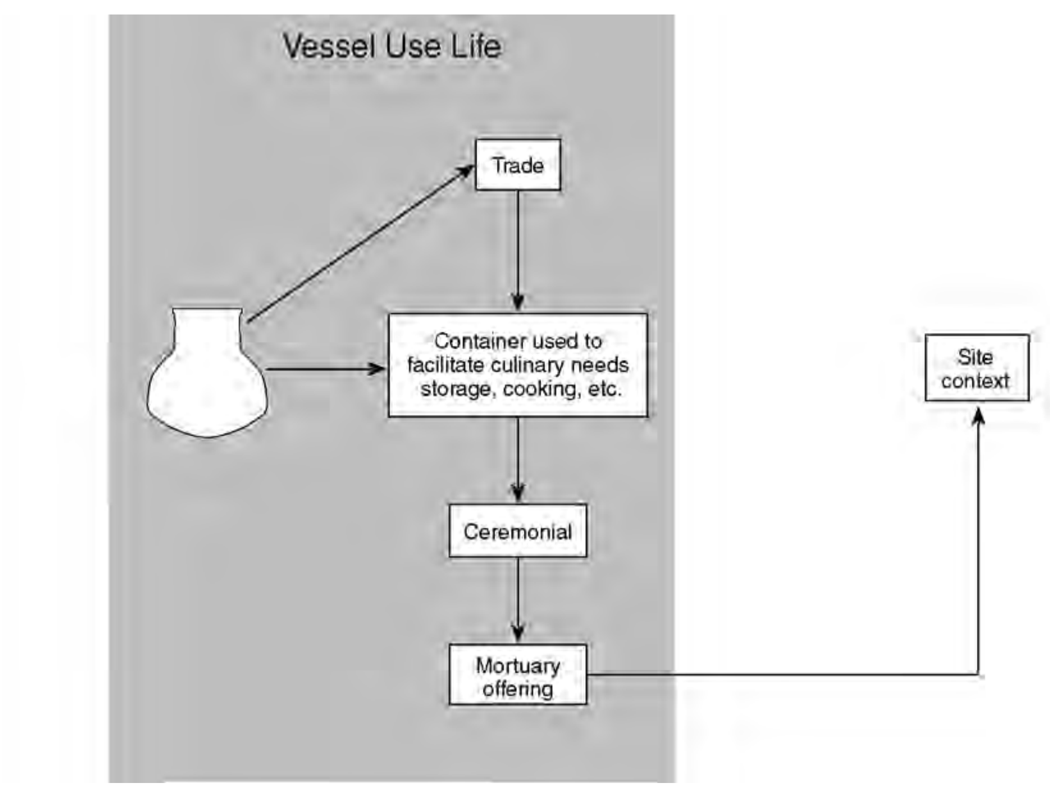


Figure 32. Idealized schematic showing vessel use life for mortuary vessels.

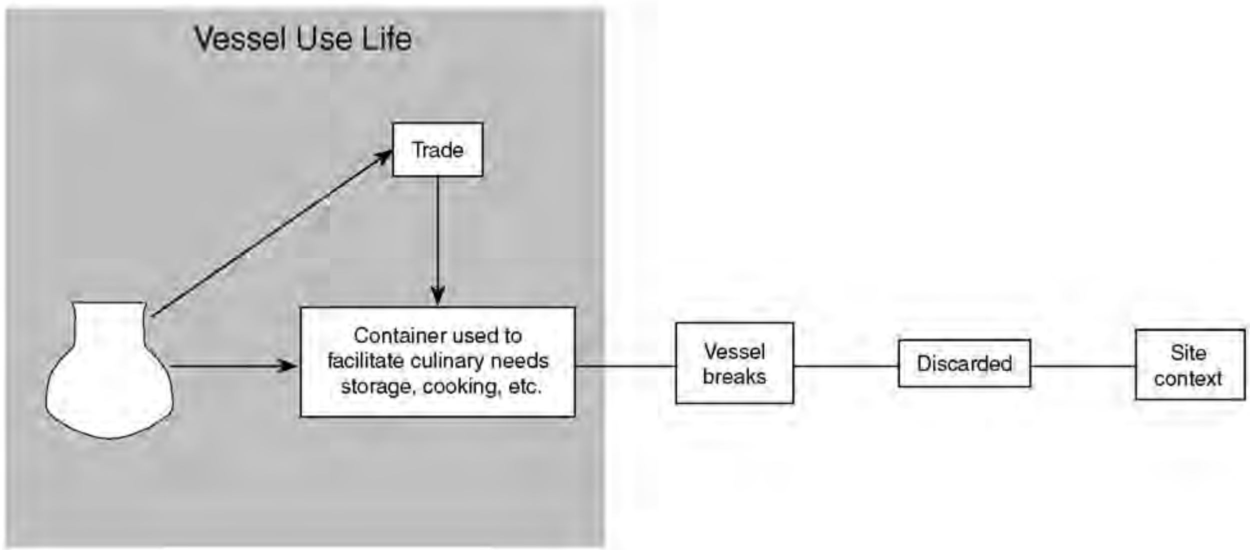


Figure 33. Idealized schematic showing vessel use life for rim sherds.

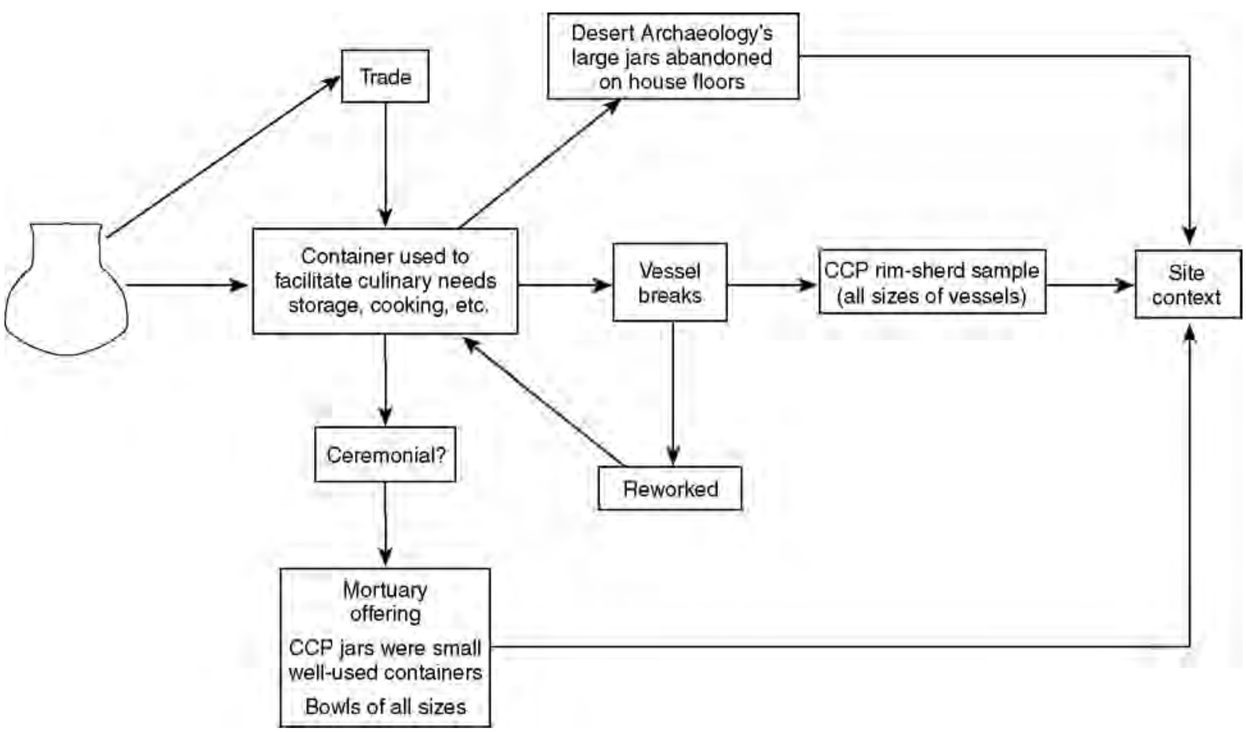


Figure 34. Flowchart showing sample contexts used in this study.

Table 30. Tonto Creek Archaeological Project Vessels Used in This Analysis

TCAP Vessel No.	Desert Archaeology No.	Site	Context	Date	Type	Volume (liters)	Reference
1	9204-1	U:3:297 (Las Tortugas)	domestic floor	Early Classic period	indeterminate red	114.125	Clark et al. 2000:586, 605–611
2	6085-3	U:3:299 (Granary Row)	domestic floor	Early Classic period	indeterminate red or plain, ST	85.661	Lindeman and Clark 2000:477
3	269-2 obs 2	U:3:300 (Vista del Puerto)	domestic floor	Miami or Ash Creek Phase	plain ware, ST	52.958	Archer 2000:432
4	271-9	U:3:300 (Vista del Puerto)	domestic floor	Miami or Ash Creek Phase	plain ware, ST	51.055	Archer 2000:436
5	269-2	U:3:300 (Vista del Puerto)	domestic floor	Miami or Ash Creek Phase	indeterminate red or plain, ST	43.11	Archer 2000:432
6	6287-6	U:3:299 (Granary Row)	burial	Early Classic period	plain ware, ST	35.34	Hall et al. 2001:278
7	8131-22	U:3:297 (Las Tortugas)	domestic floor	Early Classic period	Indented Obliterated Corrugated	27.421	Clark et al. 2000:556–559
8	8209-3	U:3:297 (Las Tortugas)	domestic floor	Early Classic period	indeterminate red	20.132	Clark et al. 2000:553–556
9	8366-5	U:3:297 (Las Tortugas)	domestic floor	Early Classic period	indeterminate red	12.773	Clark et al. 2000:511, 568–570
10	6083-2	U:3:299 (Granary Row)	domestic floor	Early Classic period	plain ware, ST	11.296	Lindeman and Clark 2000:477
11	9211-11	U:3:297 (Las Tortugas)	domestic floor	Early Classic period	indeterminate red	12.183	Clark et al. 2000:586, 605–611
12	6293-10	U:3:299 (Granary Row)	burial	Early Classic period	Salado Red Corrugated	6.795	Lindeman and Clark 2000:495
13	6285-4	U:3:299 (Granary Row)	burial	Early Classic period	indeterminate red	5.423	Hall et al. 2001:273
14	242-1	U:3:300 (Vista del Puerto)	domestic floor	Early Classic period	plain ware, ST	2.7	Archer 2000:423

Note: All vessels were jars with neck.
Key: ST = Sand Tempered; TCAP = Tonto Creek Archaeological Project.

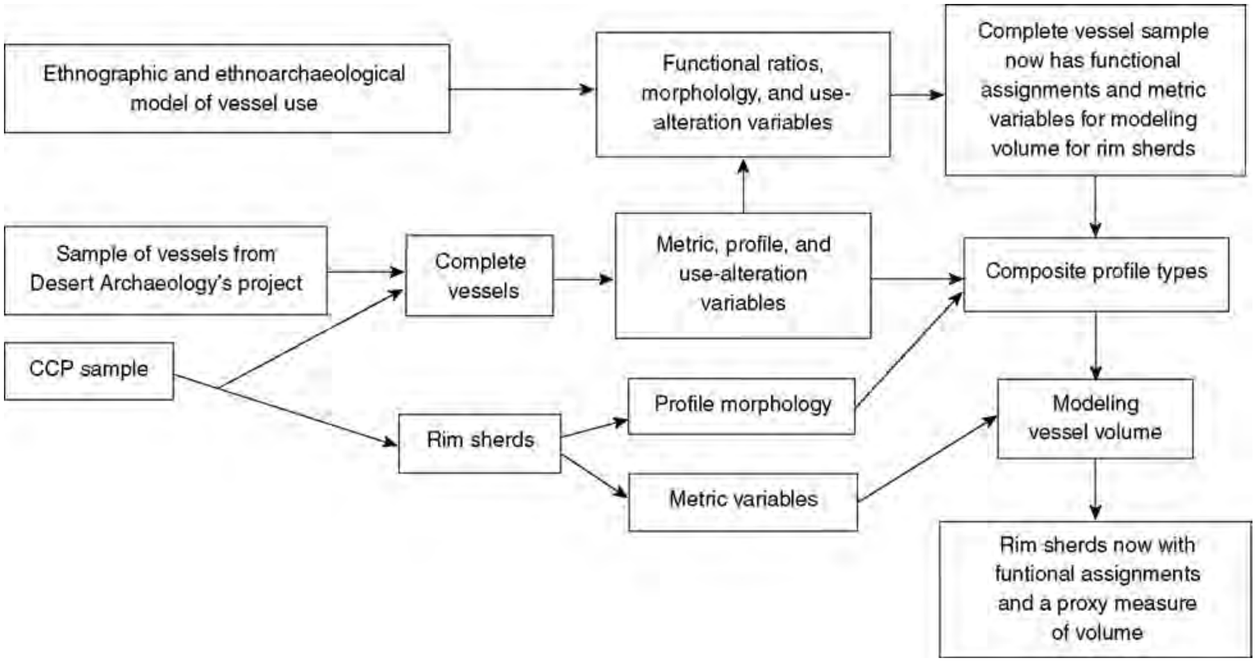


Figure 35. Schematic flowchart showing methods for inferring function for the sample.

directly measurable and/or observable variables that facilitated a functional determination for the prehistoric vessels. Formal attributes collected from the prehistoric vessels, such as profile morphology, container volume, orifice diameter, wall thickness, and inferred function allowed vessel function and volume to be modeled for the rim sherds.

The primary methods used to record and characterize vessel form borrow heavily from Shepard (1985). Shepard's characteristic points of a vessel profile provided a systematic and replicable way of measuring and characterizing vessel morphology. Applying the same method to the rim sherds enabled easy comparisons between the two data sets. I also created profile types using the sample of whole and reconstructible vessels. The profile types, which borrow from Orton et al.'s (1993:120) envelope system, were used to infer original vessel shape for rim sherds. Groups of morphologically similar vessels provided a composite profile type. Then the rim sherds were "fitted" to the profile types. The result provided a proxy indication of the overall form of the vessel represented by the rim sherd. Further, because the profile types derive from containers where function had already been assigned based on ethnographic comparison, it was possible to assign a function to the rim sherds. Using the vessel data and hierarchical cluster analysis and discriminant analysis, I was able to model vessel size for the rim sherds. From these data, I present and reconstruct the kinds of culinary activities associated with and therefore represented by the ceramics.

Ethnographic Framework

In this section, I present an ethnographic model of ceramic-container use. I used ethnographic and ethnoarchaeological studies that explicitly tied morphological variables of containers and use-alteration patterns to behaviors associated with ceramic use. The morphological variables provide a quantitative framework of intended use activities, and the use alterations, in some cases, provide direct evidence of use. Combined, the variables and their use associations provide a powerful analytical tool that can be applied to archaeological collections.

Quantitative Measures, Form, Function, and Use Wear

Holmes (1903) observed long ago that vessel function profoundly influenced vessel shape. Later, Linton (1944) defined combinations of morphological attributes for ceramic containers that matched the necessary physical properties for cooking. Subsequent to these pioneering studies, researchers around the globe have continued to pursue functional studies that seek to define increasingly finer relationships between ceramic containers and a social group's subsistence systems (Abbott 1988; Arnold 1985; Blinman 1988; Braun 1983; Crown 1983; Ericson and De Atley 1976; Ericson et al. 1972; Hally 1986; Henrickson and McDonald 1983; Ikawa-Smith 1976; Lindauer 1988, 1991; Nelson 1985; Pauketat 1987; Rogers 1936; Shapiro 1984; Shepard 1985; Smith 1983, 1985, 1988; M. Stark 1995a; Vint 2000b; Whittlesey 1986, 1994). For example, vessel-form diversity is common among groups that are "maize dependent" (Arnold 1985). Researchers suggest that the diversity arises from the many ways in which maize as the staple crop was prepared. The study presented here relies heavily on many of these previous works.

The relationship between vessel form and function is complex. No single suite or constellation of morphological attributes will unequivocally define a vessel's intended function. Ethnographic studies show that vessel function plays a significant role in the ultimate shape of the container, however. Several contemporary pottery-using communities used a limited range of vessel shapes and sizes, each serving a specific or several functions (Shapiro 1984; Smith 1983). Arnold (1985) has discussed the variables that contribute to the demand for ceramic vessels within a society. Although Arnold described several factors, he gave primacy to "nutrient flow" and provided an exhaustive list of plant taxa that require processing (in ceramic vessels) to reduce toxic constituents, improve protein absorption, and enhance taste (Arnold 1985:Table 6.1).

Two primary characteristics associated with container morphology and vessel function are containment security and ease of access (Braun 1983; Henrickson and McDonald 1983; Smith 1983, 1985). For example, cooking, serving, and food-preparation vessels require easy access to contents. Vessels used for liquid storage and liquid transport often exhibit a restricted orifice to prevent spillage. Rice (1987:Table 7.2) provided correlates for vessel shape and functional categories. Several culinary categories relating to food preparation are demonstrable across cultures—food preparation without heat (e.g., mixing and soaking); storage (dry and liquid, short and long term); cooking (e.g., boiling, frying, etc.); transport (dry and liquid); serving; and eating (Rice 1987; M. Stark 1995b).

I used five functional categories that were determined metrically based on ethnographic vessels of known use: (1) food preparation, serving/eating; (2) cooking; (3) dry storage; (4) liquid storage; and (5) liquid carrier. This approach is by no means new. Several researchers recognize the associations between functional categories and ratios derived from height, aperture, and breadth measurements. Crown (1983:Tables I.2.28–I.2.40) generated ratios for historical-period vessels of known use from published sources for four of the five categories used here (Table 31). Lindauer (1988:Table 13), following the lead of Henrickson and McDonald (1983), generated ratios for serving and eating vessels using historical-period vessels of known use. (*Author's note:* Lindauer's ratios are the inverse of Crown's; this requires converting Lindauer's ratios by taking the reciprocal of each value.) I combined Crown's and Lindauer's data sets and omitted the duplicate vessels. The combined data sets provide the functional categories and corresponding ratio ranges used in this study (Table 32).

Below, I present each functional category and discuss the variability or consistency within each. I also present other morphological and use-wear (if applicable) variables that I used to refine the functional categories.

Food Preparation (Processing), Serving and Eating (Transport/ Transfer)

This category refers to activities relating to food preparation without heat and containers from which individuals or groups consume meals. Activities associated with food preparation without heat include, but are not limited to, rinsing, soaking, mixing, and drying (Henrickson and McDonald 1983; Shapiro 1984; M. Stark 1995b). Generally, these vessels are unrestricted and relatively shallow. Many vessel forms would accommodate soaking, however. Nonetheless, the ratio values from ethnic groups for this functional category relating to height/breadth are generally low, and those corresponding to aperture/breadth remain close to 1.0 (see Table 32).

Six vessels from three different ethnic groups constitute the sample from which the functional ratios came. Figure 36a shows distribution of height/breadth and aperture/breadth for food preparation, serving, and eating vessels for each group. Although the sample is small, the figure illustrates relatively consistent ratios between groups.

Processing without Heat

The use of ceramic containers for processing without heat is well documented in the ethnographic literature (Arnold 1985; Cushing 1920; Fontana et al. 1962; Henrickson and McDonald 1983; Ikawa-Smith 1976; May and Tuckson 1982; Nelson 1991; Reina and Hill 1978). Washing maize, soaking beans, and mixing ingredients prior to cooking represent repeated activities carried out using ceramic containers. Of these activities, soaking can be accomplished in almost any watertight container. Mixing and washing require that hands and/or utensils have easy access to the container contents, which is facilitated by containers with wide openings relative to their breadth. Container size is

Table 31. Crown's and Lindauer's Sources and Sample Sizes for Each Functional Category, by Ethnic Group

Ethnic Group	Original Source	Crown 1983				Lindauer 1988				Total
		Dry Storage	Cooking	Liquid Carriers	Liquid Storage	Food Preparation, Serving, and Eating	Cooking	Liquid Carriers	Liquid Storage	
Acoma	Bunzel 1972	—	—	—	1	—	—	—	—	1
Hopi	Bunzel 1972	—	2	2	—	—	—	—	—	4
Kamia	Rogers 1936	—	—	1	—	1	—	2	1	5
Maricopa	Spier 1978	—	4	—	1	2	—	—	—	7
Tohono O'Odham	Fontana et al. 1962	1	3	2	2	—	—	—	—	8
Pima	Russell 1980; Douglas 1969	—	2	—	2	3	6	2	2	17
Southern Diegueno	Rogers 1936	—	—	1	—	—	1	—	—	2
Yuman	Rogers 1936	5	3	—	1	—	—	1	1	11
Zuni	Bunzel 1972	—	3	—	2	—	—	—	—	5
Total		6	17	6	9	6	7	5	4	60

Table 32. Functional Class Ratios Derived from Crown and Lindauer

Measurements Used to Derive Ratios	Functional Class				
	Dry Storage	Cooking	Liquid Carriers	Liquid Storage	Food Preparation, Serving, and Eating
Height/breadth					
Minimum	0.95	0.58	0.54	0.75	0.18
Maximum	1.37	1.56	1.41	1.69	0.57
Mean	1.13	0.87	0.97	1.04	0.33
Standard deviation	0.17	0.23	0.25	0.25	0.17
Aperture/breadth					
Minimum	0.23	0.43	0.16	0.19	0.95
Maximum	0.45	0.93	0.39	0.84	1.00
Mean	0.32	0.78	0.26	0.58	0.99
Standard deviation	0.09	0.11	0.06	0.17	0.02
Number of vessels	6	24	11	13	6

Note: Data from Crown (1983:Tables I-2-30–I-2-40) and Lindauer (1988:Table 13).

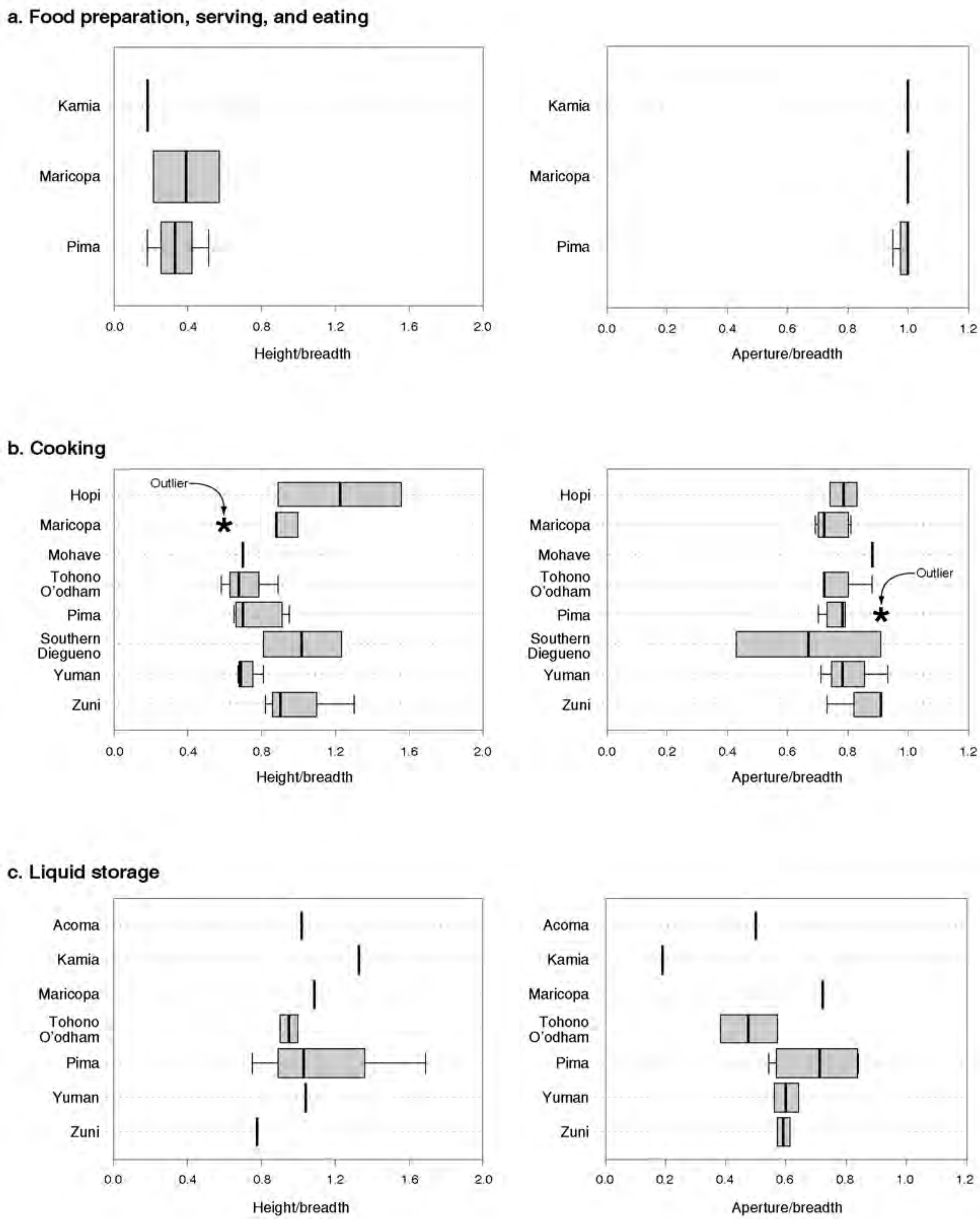


Figure 36. Box plots showing the distribution of ratios by ethnic group for three of the functional categories: (*a*) food preparation, serving, and eating; (*b*) cooking; (*c*) liquid storage. Whiskers indicate the third quartile of a normally distributed population. Boxes represent the first and second quartiles, and the lines bisecting the boxes indicate the median.

also an important variable for washing and mixing the vessel contents. Several important behavioral factors weigh in when considering vessel size in relation to these processing tasks. For example, is food processed in bulk and then stored until it is cooked, or is only enough food for a single meal processed? Vessel size not only relates to the quantity of the material processed but also relates to the kind of resources processed. For example, maize kernels are large relative to the seeds of a hedgehog cactus. Therefore, the processing of hedgehog cactus seeds could be accomplished in smaller vessels.

The best direct evidence of processing without heat comes from observations of use wear on vessels. Skibo (1992) described surface attrition on cooking vessels of the Kalinga, a contemporary ethnic group from the Philippines. Skibo (1992:114–115) found that most of the exterior basal abrasion resulted from (1) setting the pot down on the hearth, floor, or ground surface; (2) tipping the pot when it is full and resting on a surface; (3) dragging the pot (empty or full) across a surface; (4) rotating the vessel when it is full; and (5) rubbing the pot during washing. Although Skibo used cooking vessels, the activities described (dragging, rotating, and rubbing) also seem consistent with uses associated with processing, such as mixing, stirring, pressing, and mashing.

Processing materials within ceramic containers often leads to abrasions on the interior base and sidewalls of a vessel. The use of utensils to stir, mix, mash, and serve the vessel contents can potentially leave abrasions on the interior sidewalls and base of a vessel (see Skibo 1992:141).

Processing with Heat (Cooking)

The technological advantage of pottery lies in its suitability for processing food in an efficient and effective manner. The suitability of clay containers for withstanding prolonged and repeated heating enabled humans to expand their food resources. The process of cooking renders many food resources more palatable, digestible, and nutritious (Arnold 1985; Ikawa-Smith 1976). The earliest documented ceramic containers are small cooking vessels of the Jomon culture of Japan and date to approximately 12,000–10,000 B.P. (Aikens 1995). Discussing an example temporally and geographically closer to home, Crown and Wills (1995) have argued that the advantage afforded by ceramic containers in food storage and processing led to the rapid adoption of container technology throughout the Southwest between approximately 300 B.C. and A.D. 300 (see also Whittlesey 1998).

Cooking vessels usually have a slightly to moderately restricted opening. The slight restriction would facilitate boiling and permit the cook to stir the contents. Another consistent trait observed in cooking pots is a short and squat profile with a globular basal surface (Ericson et al. 1972; Henrickson and McDonald 1983; Linton 1944). Deep hemispherical or incurved bowls may also be suitable for cooking, however (Crown 1983; Rice 1987:Figure 7.14). Table 32 presents the variability in cooking-vessel ratio ranges and demonstrates the relative lack of overlap with other functional categories.

Figure 36 shows the distribution of ratios for cooking vessels (n = 24) by ethnic group. The ethnographic vessels exhibit considerable variability in height-to-breadth ratios. Closer examination suggests a regional or environmental trend. Cooking vessels from southern desert groups generally have a squat profile relative to those used by groups from the Colorado Plateau area (M. Stark 1995b). Interestingly, the sample of historical-period Maricopa cooking vessels have functional ratios more similar to the plateau groups. Conversely, the aperture-to-breadth ratios reveal little variability among the groups (see Figure 36).

The morphological characteristics of ethnographic ceramic containers used for cooking vary greatly (May and Tuckson 1982; Reina and Hill 1978; Rice 1987; Russell 1975; Spier 1978). Perhaps more than any other pattern of use, modes of cooking influenced the morphology of containers adapted for this function (Rice 1987). Below, I divide processing with heat into two gross categories: liquid and dry.

Linton (1944) argued that boiling foods in liquids represented the most common aboriginal cooking technique. Linton pointed out a relationship between the orifice and volume of vessels used for prolonged boiling. If the orifice is too wide relative to the heated surface area and volume, the vessel will boil dry before cooking is finished. By contrast, if the orifice is too narrow relative to the heated surface area and volume, the vessel is likely to boil over (see also Smith 1985). Staple crops such as maize and beans required prolonged boiling in their preparation (Arnold 1985). Other modes of cooking with water do not impose a great deal of limitations on vessel morphology. For example, simmering and rehydration of previously prepared dishes require less cooking time. Containers suitable for these tasks fall under the general formal category of bowl and exhibit orifices with little or no restriction.

Cooking without liquids involves a variety of dry methods, such as roasting, baking, and broiling. Containers suitable for dry cooking often exhibit a shallow, open form. The most characteristic of these forms is the ceramic *comal*, or griddle (Beck 2001:Table 3; Russell 1975:129; Spier 1978:106). Fontana et al. (1962:Figures 29–32 and 34) illustrated relatively deep vessels used by the Tohono O'odham for bean frying and wheat roasting. Most of the ethnographic examples, however, exhibit shallow, unrestricted vessels with broad or flat bases. Based on this information, there are few clear patterns between cooking and the types of vessels represented in the CCP and TCAP samples. Thus, our discussions do not discriminate between dry and liquid cooking methods.

Generic cooking vessels, however, can be distinguished by the presence of sooting on vessel exteriors. The use of a container in cooking or other activities associated with fire results in the deposition of soot on the vessel exterior. Soot is composed of carbons and resins and represents a by-product of fuel combustion (Rice 1987). The presence and location of soot provides important information relating to how a container was used in association with fire (Hally 1983). For example, the presence of soot on the exterior sidewalls and the absence of soot on the base indicate that the container rested in the fire. Conversely, the occurrence of soot on the exterior base and sidewalls indicates that the vessel was suspended over the fuel. Skibo (1992:153) described a similar sooting pattern on Kalinga vessels. The presence of soot provides unequivocal evidence that a vessel was used in association with fire, thus providing an independent means of evaluating the functional assignments derived from metric attributes alone.

Serving and Eating (Transport/ Transfer)

Ceramic containers likely provided the primary facilities for serving and eating food (see Arnold 1985; Cushing 1920; Fontana et al. 1962; Henrickson and McDonald 1983; Ikawa-Smith 1976; Nelson 1991; Reina and Hill 1978). Smith (1985:Table 11.2) suggested that the containers suitable for serving and eating food will exhibit an unrestricted orifice, making the contents readily visible and accessible. Some researchers have suggested a relationship between group or household size and the size of cooking and serving vessels (Turner and Lofgren 1966). Turner and Lofgren argued that the average serving size could be determined by dividing the average volume of cooking vessels by the average volume of serving vessels. Using ethnographic data from a Highland Maya village, Nelson (1981) found that other variables, such as social status and wealth, are also critical components. In an archaeological case, Maxham (2000) used Turner and Lofgren's method to argue that small rural sites associated with Alabama's Moundville I communities functioned as communal feasting locales. Maxham based this finding on the presence of large serving and cooking vessels at these small sites and suggested that they did not represent domestic activities for a large group. Instead, she used these data to argue for a ceremonial or communal function for these sites.

The ways in which food is prepared, served and consumed further complicate the relationship of vessel size to group size (Hally 1986; Shapiro 1984; Vint 2000c). For example, were individual meals prepared and served in individual bowls or was a communal bowl used? Alternatively, did people prepare multiple meals and then serve the meals in individual or communal bowls? How much of the meal was actually served in a ceramic container? In the end, it appears that vessel size provides a relatively poor indicator of group size.

The uses of ceramic containers to transport or transfer materials short distances (for serving or eating) are well documented in the ethnographic literature. Distance is relative; here I am talking about the distance across the hamlet, the distance across a room, or the distance from the cooking vessel to the dinner "table." Containers suitable for these functions often possess appendages, such as handles or lugs, or exhibit flanges at the rim, all of which assist in handling the vessels while scooping, pouring, drinking, or eating the contents (Smith 1985). Variables such as liquid vs. dry contents, amount of contents to be moved, and the temperature of the contents (hot or cold) all impose some limitations on the suitability of a container for transferring materials (Smith 1985). Alas, as among the other categories, no single variable or groups of variables coalesce to provide an unequivocal functional determination.

Liquid Storage

Liquid-storage vessels exhibit a good deal of morphological variability, second only to cooking vessels. The vessels represented in the ethnographic sample used here display a height-to-breadth ratio with a mean of 1.04 (see Table 32). This conflicts with Ericson et al.'s (1972) prediction that these vessels should be tall relative to their width to facilitate pouring of the contents. Fontana et al. (1962) noted that the openings to Tohono O'odham water-storage vessels are wide relative to their breadth to facilitate dipping. The openings for vessels used to store saguaro syrups and wine are more restricted to facilitate sealing the contents, however. Some of the differences noted by Fontana and his colleagues relate to the duration of storage and how often it is necessary to access the contents of the vessel.

Vessels from seven ethnic groups compose the sample for the liquid-storage category (see Figure 36). Again, the number of vessels per group is small, but some notable variability exists. Several researchers note the overlap of functional ratios for liquid storage (Hally 1986; Lindauer 1988; Smith 1983, 1985; M. Stark 1995b; Whittlesey 1986, 1994). The vessels constituting this sample overlap with three other functional categories: dry storage; cooking; and to a small degree, liquid carriers.

Short-Term Liquid Storage

A review of the ethnographic vessels used to generate the functional ratios (which includes both short-term and long-term liquid storage) reveals relatively squat vessels with moderately restricted apertures (see Table 32). Smith (1985:Table 11.3), using the almost identical sample of ethnographic vessels used here in conjunction with Braun's (1980) criteria for connecting morphological relationships to use behaviors, suggested that orifice diameter shares a direct relationship with the relative volume of the material put into and retrieved from the vessel and the frequency of access. Further, Smith suggested that a direct relationship exists between the vessel volume and duration of storage—the longer the duration, the greater the volume (see also Henrickson and McDonald 1983). Conversely, the shorter the duration, the smaller the vessel.

Vint (2000c) used Henrickson and McDonald's (1983) size ranges for ethnographic vessels used for short-term liquid storage to generate approximate volume figures. The resulting figures provided a broad range of volumes associated with short-term liquid storage: 0.3–20.6 liters, with a mean of 11.9 liters (Vint 2000c). The variability relates to the type of liquid being stored. For example, liquids such as syrups and wines are rarely produced in large volumes, especially in agricultural societies like those in Tonto Basin (Henrickson and McDonald 1983). These types of liquids also represent materials frequently used, if available, for cooking and during the consumption of meals.

Long-Term Liquid Storage

Ethnographic data suggest that vessels most suitable for long-term liquid storage are relatively large (Smith 1985). Once again, the critical factor relates to what is being stored and for what purpose. For example, Fontana et al. (1962:37) discussed two sizes of saguaro-wine storage jars—a small one for familial use and a large one for storing wine used during community ceremonies. Using Henrickson and McDonald's (1983) size ranges for ethnographic vessels used for long-term liquid storage, Vint (2000c) estimated the volume for these vessels to be from 1 to 198 liters, with a mean of 45.1 liters. Vessel volume provides an important variable for refining the liquid-storage functional category.

Dry Storage

Dry-storage vessels represent critical facilities for the storage of foodstuffs, grains, or seed crops. Length of storage and security of contents (i.e., protection from rodents, bacteria, and moisture) are critical factors contributing to the shape and technology of dry-storage vessels. The vessels commonly exhibit a more restricted opening than liquid storage vessels, enabling the contents to be more easily sealed, and they also exhibit a slightly higher height-to-breadth ratio (see Table 32).

Unlike the other functional categories, the dry-storage vessels come from only two ethnographic groups (Figure 37). All but one of these vessels, an O'odham container (Fontana et al. 1962:Figure 36), were associated with the Yuman groups of the lower Colorado River area (Rogers 1936:Plate 9-1–9-4, 9-15). The Yuman containers represent tall vessels with narrow orifices (see Table 32).

Perhaps the small number of ceramic containers in the ethnographic literature from the Southwest reflects the use of other means to store dry goods. For example, several references described groups who store dry goods in large woven baskets like the Pimans (Castetter and Bell 1942) or in dedicated secure rooms like the Hopi (Beaglehole 1937). Castetter and Bell (1942, 1951) pointed out, however, that the seed crop for most of the groups they investigated was mixed with wood ash and kept in ceramic containers. Further, these authors described the use of ceramic containers to store a host of other dry-good products, such as beans, cotton, and various wild seeds and stabilized plant fruits, such as parched cholla buds. Interestingly, in reference to the Tohono O'odham storing maize, Castetter and Bell (1942:184) wrote that "the most common jar was an old olla which had lost its porosity and no longer kept water cool." Smith (1985) described provisions that would mitigate the inherent limitations of a vessel to serve a specific function. For example, containers that possess a relatively large opening relative to the maximum diameter (e.g., vessels that would have ratios consistent with liquid-storage containers in this study) may not be ideal for storing dry goods, because they more easily allow mold and spoilage and other threats, such as pests, into the vessel. This limitation is overcome by fastening a lid to the vessel. Some ethnographic accounts discuss the method and material used for securing vessel contents with lids (Castetter and Bell 1942, 1951; Fontana et al. 1962; Henrickson and McDonald 1983; Reina and Hill 1978). Most of the ethnographic accounts discuss lids fabricated from perishable material. For example, Fontana et al. (1962) described the Tohono O'odham practice of placing a cloth over the opening and sealing it with mud or clay and allowing it to dry.

The spectacular find of the Pinaleno cotton cache provides an excellent example of how ceramic bowls—either inverted or placed with the convex base in the orifice of a jar—can preserve the jar's contents (Haury 1993). The cache consisted of two jars full of raw cotton placed in a rock crag. Although they had been placed there several hundred years ago, the fibrous cotton contents of the vessels when found looked liked last year's harvest (see Haury 1993:Figure 5). Incidentally, the vessels recovered from the cache have ratios that correspond to a liquid-storage function. Therefore, the simple provision of securing the vessel with a lid would make it more than suitable for dry-storage needs for any practical duration of time.

Liquid Carriers (Transport/ Transfer)

The morphology of vessels designed for liquid transport relates to a multitude of behavioral factors. For example, the distance and material for transport influence the suitability of a vessel for the transport function. The ethnographic vessels used for this study represent containers for transporting water. In the arid Southwest, water is not

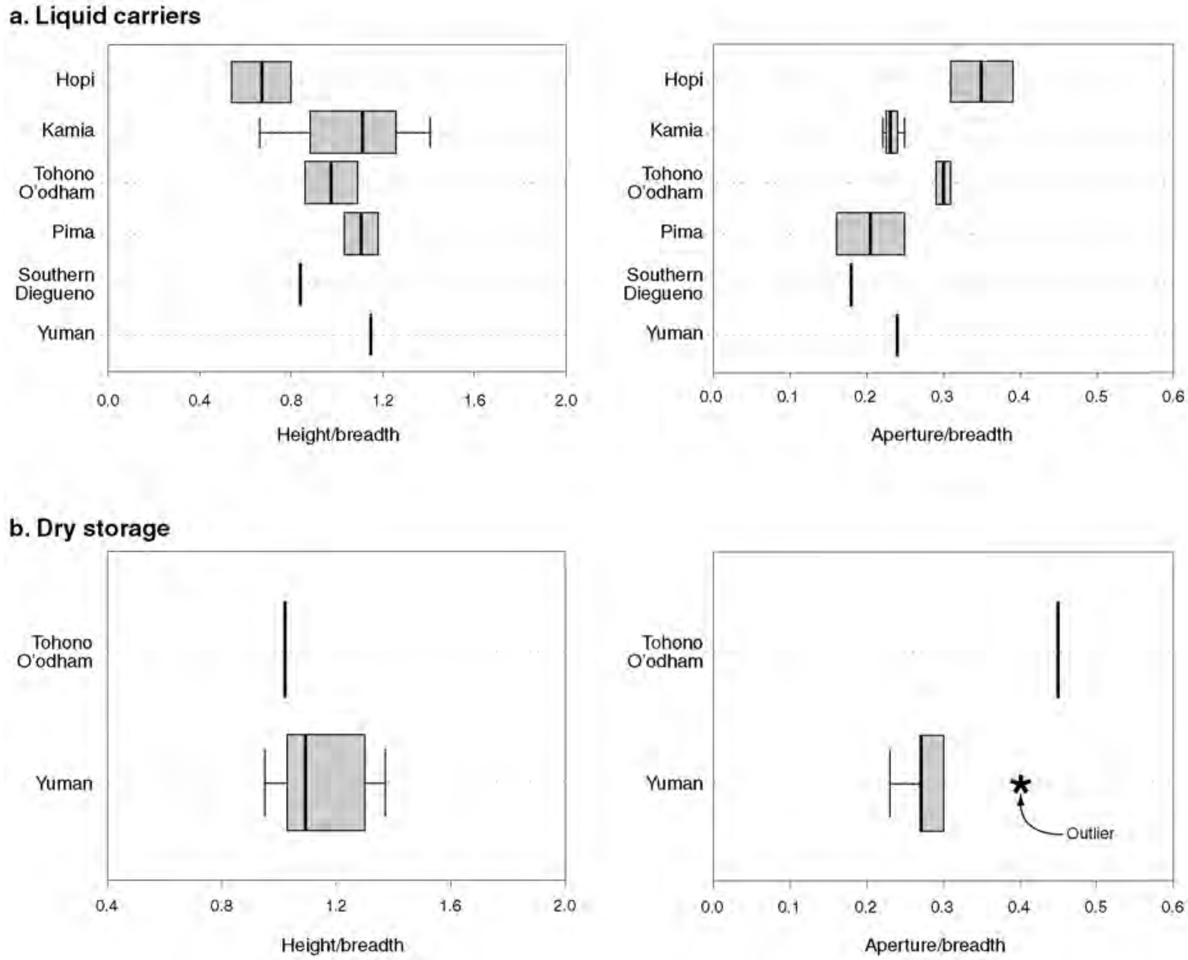


Figure 37. Box plots showing the distribution of ratios by ethnic group for two of the functional categories: (*a*) liquid carriers; (*b*) dry storage. Whiskers indicate the third quartile of a normally distributed population. Boxes represent the first and second quartiles, and the lines bisecting the boxes indicate the median.

always readily available and frequent and relatively long journeys to the water source may be necessary to obtain it.

The 11 liquid-carrying vessels used in this study come from six different ethnic groups (see Figure 37). The height-to-breadth ratios reflect vessels that are essentially as tall as they are wide. Both Hopi vessels are shorter than they are wide (see Figure 37). Of all the functional classes, the liquid carriers have the most-restricted orifices (see Table 32). The differences in aperture-to-breadth ratios among ethnic groups, although not dramatic, may reflect differences in modes of transporting the vessels or the distance traveled to the water source (see Figure 37).

The distance traveled and the method used to carry vessels places limitations on the formal properties of containers used for these purposes. Reina and Hill (1978) found that the variability in *tinaja* (water-carrying vessels) forms used in Guatemala corresponded to the method of carrying the container and the distance to the water source. For example, potters of the mountainous northern regions of Guatemala living in villages located a great distance from the water source produced an elongated *tinaja* with a narrow opening. This vessel form limited spillage and increased the container volume, which requires less-frequent trips to the water hole. In addition, the shape and size of the *tinaja* required that it be carried on the back using a rope secured around the forehead (a tumpline). Conversely, ethnographic data from Cameroon suggest that villages located a short distance to the water supply use any suitable (even nonceramic) container (see Arnold 1985; David and Hennig 1972). The short distance presumably makes spillage inconsequential, thus putting few limits or restrictions on the forms of containers used for this purpose.

Another factor critical to long-distance transport is weight. Rice (1987) used ethnographic data and proposed a somewhat arbitrary weight at which vessels full of water could be comfortably transported. Rice concluded that a weight of approximately 18–35 pounds (8.5–16 liters) represents a comfortable weight range for transporting a vessel full of water. It is difficult to determine archaeologically if the transporting of other liquids (such as oils and fermented beverages) long distances to neighboring or distant villages represented an important or even practiced activity. The procurement of potable water, however, is an absolute necessity for human life.

The Ethnographic Model and the Archaeological Collection

Determining the suitability of the containers for general and specific uses and the associated behaviors required explicit assumptions that relate past behaviors to units of analysis—systemic transforms (Schiffer 1976; Reid 1995). For example, I assume that the systemic behaviors of food storage, processing, and transporting were heavily dependent on ceramic containers. Therefore, ceramic containers represent appropriate units of analysis for reconstructing these behaviors. Unfortunately, like most indirect evidence, the units of analysis do not provide mutually exclusive categories that unambiguously relate to specific behaviors. The functional categories defined for this study in conjunction with other variables such as vessel size and use-wear patterns, in addition to the independent data relating to subsistence (pollen, archaeobotanical, and skeletal), provide ample evidence for inferring the types of culinary activities represented by the ceramics from the CCP sites.

The versatility of ceramic containers for multiple uses and applications have made them indispensable components of subsistence systems worldwide (Arnold 1985). The relationship between vessel form and vessel function is complex. Many behavioral and cultural factors contribute to the morphology of ceramic containers. Further, vessels can and do serve multiple purposes during their use lives (Bowen and Moser 1968; Fontana et al. 1962; Longacre 1985; Nelson 1991; Stanislawski 1969). Nelson (1991) reported that at least 27 percent of the vessels constituting a typical Tzeltal Maya household inventory served functions other than those for which the vessels were made. Further, ceramic containers that correspond morphologically and proportionally to the functional categories defined here are not limited to purely culinary functions. This versatility prohibits the creation of a model with mutually exclusive functional categories. For this reason, I summarize the ethnographic model and set up its connection to archaeological collections using three broad behavioral categories: storing, processing, and transporting/transferring. Further, I summarize the important variables derived from the ethnographic data for evaluating, refining, or suggesting alternative functions for the prehistoric vessels used in the current study.

Storage

The ability to store food and other products safely is a critical component in most subsistence systems. Ceramic containers provide the technology to store potable drinking water, grains for consumption and planting, oils and syrups used for cooking and eating, and fermented beverages used in rituals and enjoyed with friends. Storage is especially critical to groups engaged in agriculture in combination with gathering. Multitudes of factors coalesce when considering vessel shape and its suitability for a storage function (Smith 1985). The factors relevant to storage center on the contents. Rice (1987:208) listed many of the factors important to container function. Here I provide only those relevant to storage: (1) liquid or dry contents, (2) hot or cold contents, (3) frequency of access, (4) duration of storage, and (5) volume of goods stored. Figure 38 provides a schematic representation that considers container function, contents, systemic behaviors, systemic use contexts, and potential archaeological contexts using the terminology of behavioral archaeology (Schiffer 1987).

The duration of storage provides an important variable when considering the suitability of a container for a specific function. Long-term vs. short-term storage is relative to the specific contents stored, however (Smith 1994; Vint 2000b). For example, the duration for storing liquid contents that is considered long term may only represent what is considered short-term storage of dry goods. Practically speaking, the storage of most liquids, especially water, likely lasts 1 or 20 days in the short term and a couple of weeks up to several months for long term. Relative to liquid resources, short-term storage of dry goods may translate into weeks or months, and long-term storage could conceivably correspond to 1 year or more, although foods spoil and seed stocks may no longer be viable if left too long.

The ratios derived from the ethnographic vessels provide an initial functional inference. Other independent variables, such as vessel size, use wear, and the suitability of the orifice for pouring or being closed with a lid, may permit the researcher to corroborate and refine vessel function or suggest alternative functions.

Processing

Cooking likely represents the primary processing behavior performed with ceramic containers. In addition to cooking, however, ceramic containers provide excellent facilities for other processes, including but not limited to mixing, soaking, fermenting, and washing. The suitability of a vessel for a specific function depends largely on the type of processing involved. Most vessels used to process resources are open, allowing uninhibited access to the vessel. An exception to this relates to containers used for fermenting. Fermenting is largely a process that requires minimal

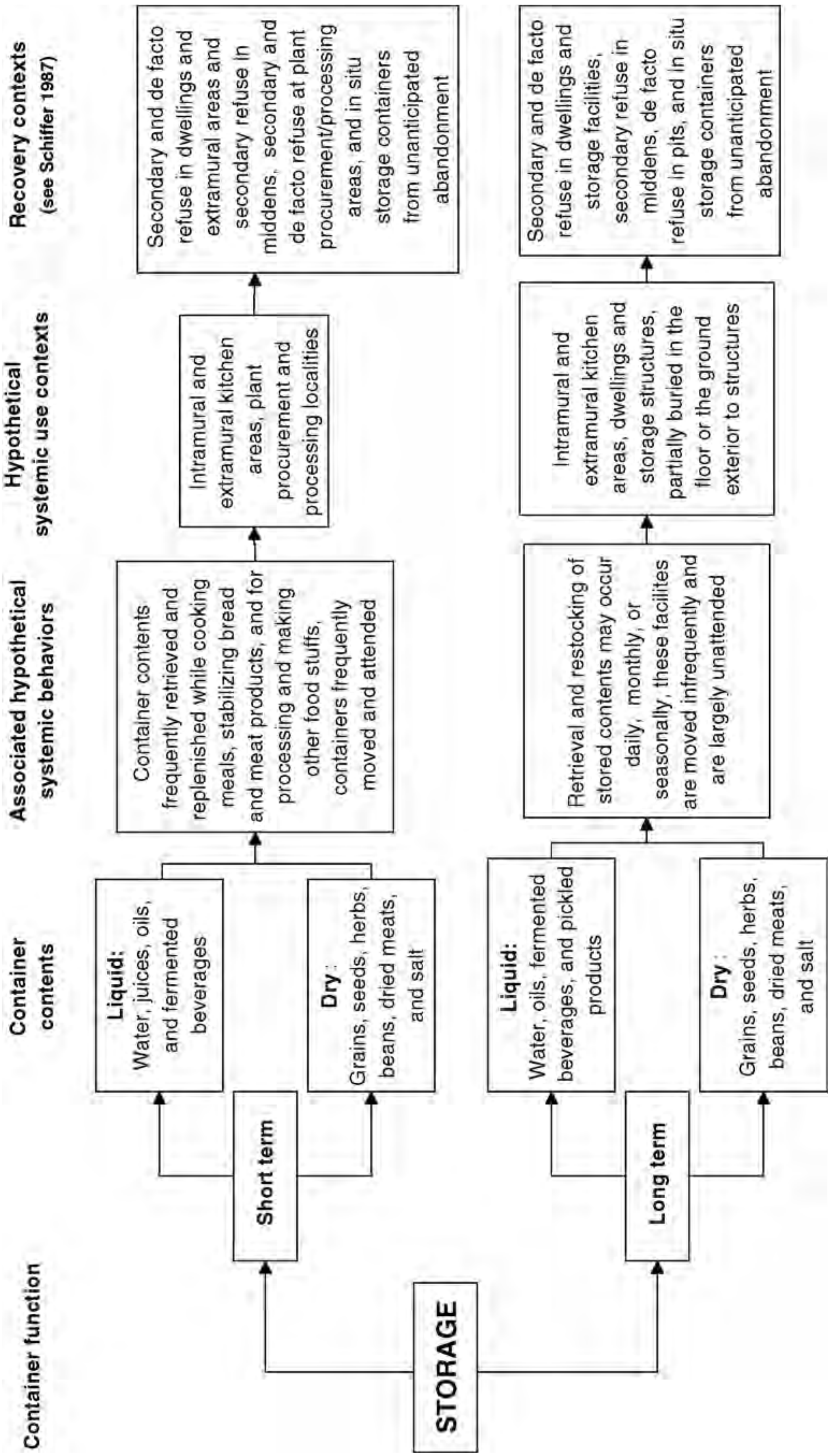


Figure 38. Flowchart showing examples of the kinds of materials, behaviors, and contexts potentially associated with storage containers (see Rice 1987:Figure 7.1 and Table 7.1).

manipulation of the contents and the containers are unattended throughout most of the fermentation process.

Following Rice (1987), I divided processing into two gross categories—with heat (cooking) and without heat (food preparation). Figure 39 presents a flowchart showing the relationships among the processing method, container contents, and possible archaeological systemic and recovery contexts. The contents (liquid or dry) provide an important component when considering what types of containers are suitable for various processes of food preparation and cooking (see Figure 39).

Smith (1983:Table 11.2) provided several aspects of use behavior and their relationship with container morphology. Specifically relevant to containers used for processing, Smith linked frequency of access and physical manipulation of contents to orifice size. If frequent access and manipulation of contents is required, then the orifice will not be significantly restricted. Like the vessels corresponding to ratios consistent with a storage function, other independent variables provide a means of corroborating and refining the original functional assignment. Use-wear patterns provide the best directly observable data to refine or suggest alternative functions. For example, the presence of sooting on vessels with ethnographic ratios consistent with cooking vessels corroborates the functional assignment. Other use-wear patterns such as abrasion can also corroborate the use of a vessel as a mixing or serving container (see above).

Transfer/Transport

The action of transporting materials either to the dinner "table" or from the water source represents daily activities often accomplished with ceramic containers. As with the other gross functional/behavioral categories of storage and processing, the formal attributes of vessels suited for transport and transfer vary depending on the material (liquid or dry). Figure 40 provides a schematic flowchart that considers these variables, the associated activities and their use contexts, and potential archaeological contexts. The distance of transport also provides a meaningful variable (Smith 1988). The variable of distance is also relative. For example, the distance to a water source may represent the farthest distance traveled while transporting materials in ceramic containers. It is difficult to determine how and with what facilities materials were transported long distances archaeologically.

Vessel capacity provides the primary independent variable used to refine, corroborate, or suggest an alternative function. For example, vessels with ratios matching ethnographic liquid carriers may have volumes that would be too heavy to carry if filled with water. In these cases, an alternative function should be suggested. Conversely, vessels with small volumes may represent personal drinking vessels, or vessels with handles and other appendages may suggest a pouring function similar to a contemporary pitcher.

Ethnographic Model Summary

I presented a model of container use that relies heavily on ethnographic analogy. Like other researchers, I used variables that were either directly measurable or observable. The analytical unit for the ethnographic sample is whole vessels. It is important to note that the primary analytical unit for the archaeological collection is the whole vessel. Even for the sample of prehistoric rim sherds, I provide inferences and proxy measures that relate to the complete vessel represented by the rim sherd.

The independent variables used to corroborate, refine, or suggest alternative functions are anchored by direct associations with ethnographic use behaviors. For example, the presence of sooting on the exterior of a vessel provides direct and unambiguous evidence that the container was used in association with fire. Ultimately, the functional assignments used in this study provide a means to infer culinary behaviors and activities associated with prehistoric special use and habitation areas.

The Sample

The use of ratios derived from ethnographic vessels of known use requires a sample comprising several whole or reconstructed vessels. Fortunately, the CCP recovered 221 whole or reconstructed vessels. Gross formal categories provided the first level in the stratified sampling criteria. A total of 197 vessels derived from mortuary contexts. The assumption that these vessels were used in a domestic context prior to the containers' ultimate interment with an individual is borne out by the consistent and extensive use-wear patterns observed on all but 1 of the 197 vessels. Other researchers provide similar conclusions relating to other mortuary collections (Blinman 1988:154–155; Vint 2000b:147).

One potential problem pertaining to the sample of mortuary vessels is a bias toward smaller vessels. A comparison of orifice diameters from the rim sherds and the mortuary vessels revealed that the jars from the mortuary contexts appeared to be smaller vessels than those represented by the rim-sherd fragments from domestic refuse deposits. To remedy this potential bias, I selected 14 relatively large vessels from three nearby sites excavated by DAI during the Tonto Creek Archaeological Project (TCAP) (Clark 2000). These sites are temporally, functionally, and culturally analogous to the larger CCP habitation sites—the Vegas Ruin (AZ U:3:405/2012) and Crane site (AZ U:3:410/2017). The major difference between the TCAP and CCP collections is that the TCAP sample is larger and more diverse and includes whole vessels from domestic contexts. Eleven TCAP vessels recovered from domestic

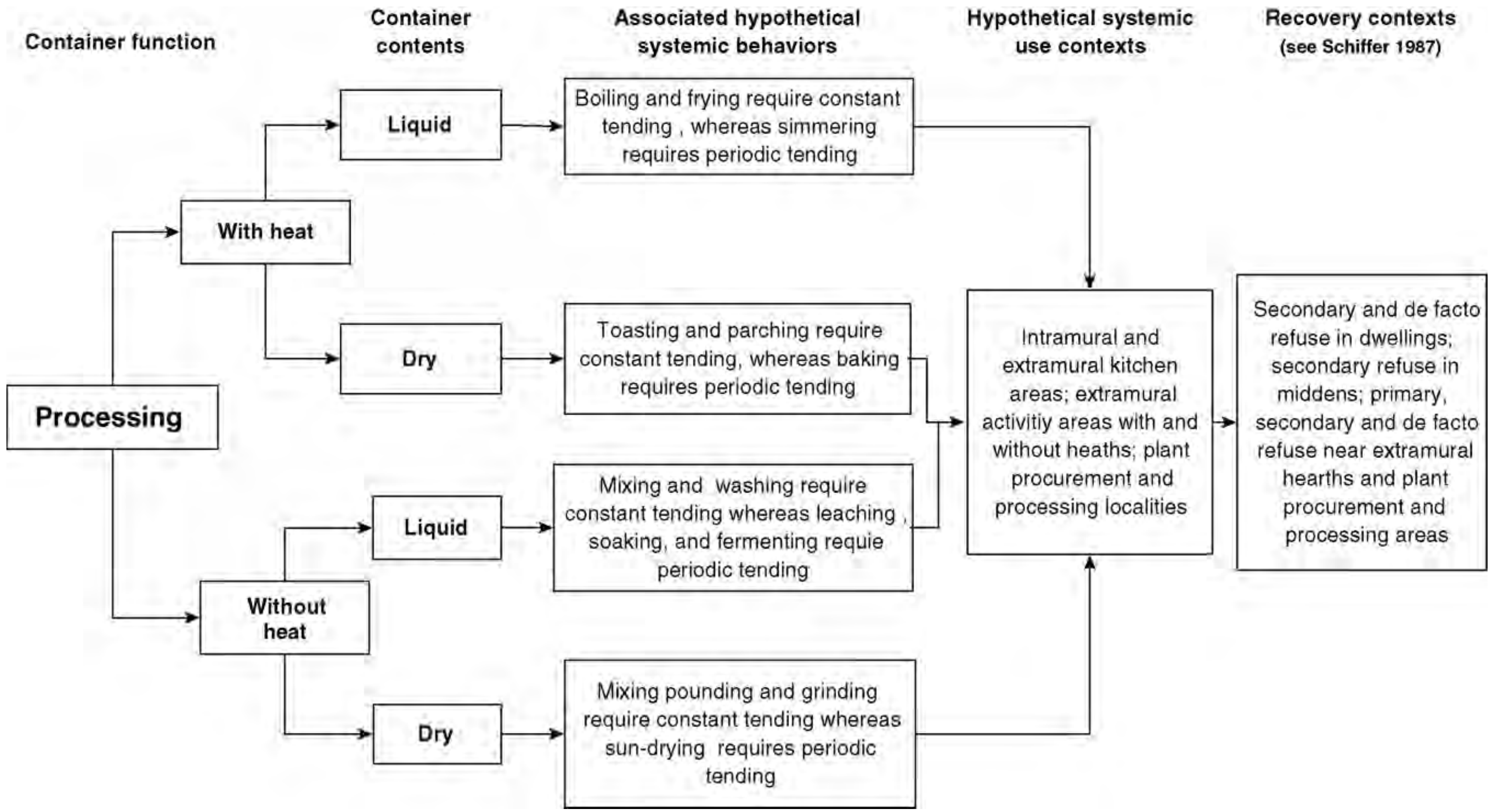


Figure 39. Flowchart showing examples of the kinds of materials, behaviors, and contexts potentially associated with processing containers (see Rice 1987:Figure 7.1 and Table 7.1).

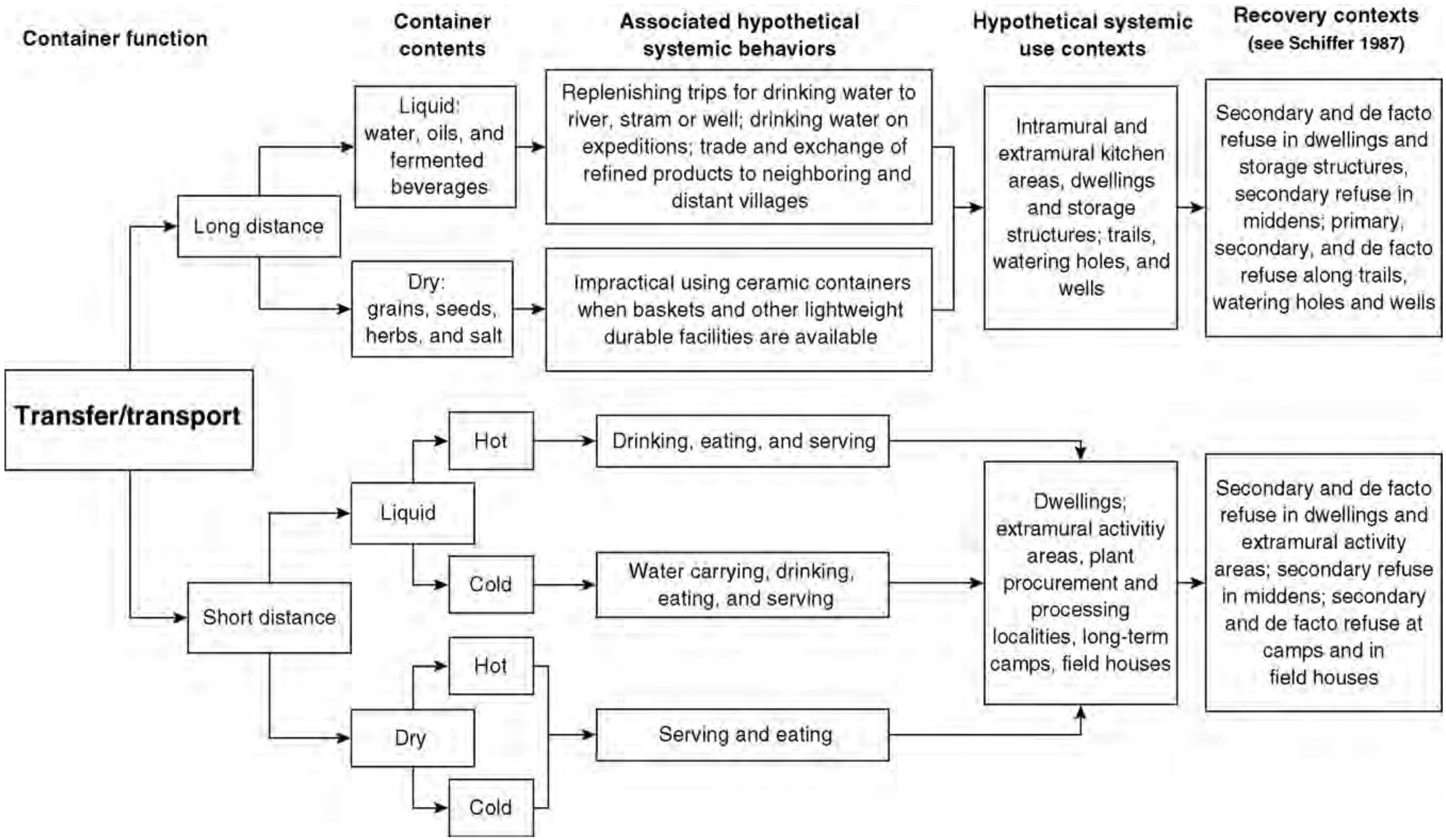


Figure 40. Flowchart showing examples of the kinds of materials, behaviors, and contexts potentially associated with containers used for transporting/transferring their contents (see Rice 1987:Figure 7.1 and Table 7.1).

contexts and 3 others from burials were added to the CCP sample (see Table 30) (Vint 2000b:Table 4.42). These additional vessels reflect variability not represented in the CCP collection and provide a more complete picture of vessel morphology and function in small early Classic period habitation sites in the area.

The whole and reconstructed vessels provide a baseline that reflects the diversity of vessel forms present and represent the only data set to which the functional ratios from ethnographic vessels can be applied. In addition to the whole and partial vessels, the rim sherds represent the next-most diagnostic fragments of a vessel in archaeological collections for analyzing overall vessel morphology. Therefore, the rim sherds represent a vital component of the sample when considering the research questions guiding the study. Table 33 presents the sample of rim sherds and vessels used in this study. The additional 14 vessels from DAI's TCAP come from Las Tortugas (n = 5) (AZ U:3:297 [ASM]/AR-03-12-06-332 [TNF]), Granary Row (n = 5) (AZ U:3:299 [ASM]/AR-03-12-06-199 [TNF]), and Vista del Puerto (n = 4) (AZ U:3:300 [ASM]/AR-03-12-06-1365 [TNF]).

Methods

I provide detailed descriptions of the recording methods, definition of terms, and database organization in Volume 2 (Appendix A.1). In this section, I present a synopsis of how, why, and where important metric attributes were recorded. Vessel morphology represents the cornerstone of the current study. Therefore, recording and characterizing vessel morphology in a consistent and replicable manner that lent itself to addressing the research questions provided the initial challenge. I developed a system of recording vessels and rim sherds that borrows heavily from Anna O. Shepard's (1985) system of geometric terms and takes full advantage of the computer software available today.

Characteristic Points of a Vessel Profile

Shepard (1985) provides explicit descriptions of the "characteristic points" of a vessel profile. The four contour types discussed by Shepard were

> (1) end points of the curve at the base and lip [of a vessel], (2) points where the tangent is vertical, as, for example, points of maximum diameter on a spheroidal form and of minimum diameter on a hyperbolic form, (3) points of inflection where the curvature changes from concave to convex or vice versa, (4) corner points where the direction of the tangent changes abruptly (there is a sharp change in contour) [Shepard 1985:226].

Table 33. Sample Stratification Showing the Total Number of Vessels and Rim Sherds Used in Each Analysis

Ceramic Category, by Project	Attribute Recording	Functional Ratios	Profile Types	Size-Class Determinations
CCP (vessels)				
Bowls	148	141	140	141
Jars	59	50	49	50
Eccentric forms	5	—	—	—
Effigies	1	—	—	—
Scoops	3	—	—	—
Ladles	1	—	—	—
Indeterminate forms	4	—	—	—
TCAP (vessels)				
Jars	14[a]	14	14	14
CCP (rim sherds)				
Bowls	882	—	318	321
Jars	297	—	159	172
Eccentric forms	3	—	—	—
Indeterminate	488	—	—	—

Note: The counts to the right of the attribute recording column represent a subset of the count in the attribute column.
Key: CCP = SR 188–Cottonwood Creek Project; TCAP = Tonto Creek Archaeological Project.
[a] Only selected attributes were recorded (e.g., metric).

Figure 41 provides examples of vessels with the characteristic points plotted. The primary purpose for using Shepard's characteristic points relates to the way in which they correspond to and define vessel parts and critical vessel dimensions. For example, critical metric attributes share a direct relationship with specific contour points. The orifice diameter corresponds to the end point at the lip on all vessels (see Figure 41). Vessel breadth (maximum diameter) corresponds to the end point at the lip on unrestricted vessels (see Figure 41a and b) and to the exterior vertical tangent on restricted vessel forms (see Figure 41c and d).

The system used to record the vessel profiles requires the recorder to start at the end point at the lip of the vessel and record vertical (height) and horizontal (diameter) measurements (Figure 42). Continuing down the vessel profile, a vertical and diameter measurement was taken arbitrarily (every 1–2 cm) and at every characteristic contour point (see Figure 42). Recording vessel profiles in this way resulted in a virtual vessel profile for each entry. The use of diameter measurements implicitly assumes biaxial symmetry for each vessel and precludes radically asymmetrical vessels and vessels symmetrical around more than one axis. Six vessels recovered exhibited this type of asymmetry, thus excluding them from the analysis (see below).

I recorded the vessels and rim sherds using the same system. Some minor modifications to the contour points were required to facilitate data entry. For example, the vessel represented in Figure 41d had an interior vertical tangent that was not a single point but instead was continuous over a distance of approximately 3.5 cm. Here, I recorded two points for the interior vertical tangent—the highest and lowest point. Obviously, the rim sherds did not provide data for the entire vessel profile. Consequently, the last vertical and diameter measurements for rim sherds represent the break corresponding to the farthest vertical distance from the end point at the lip when the sherd is oriented to vertical (Figure 43).

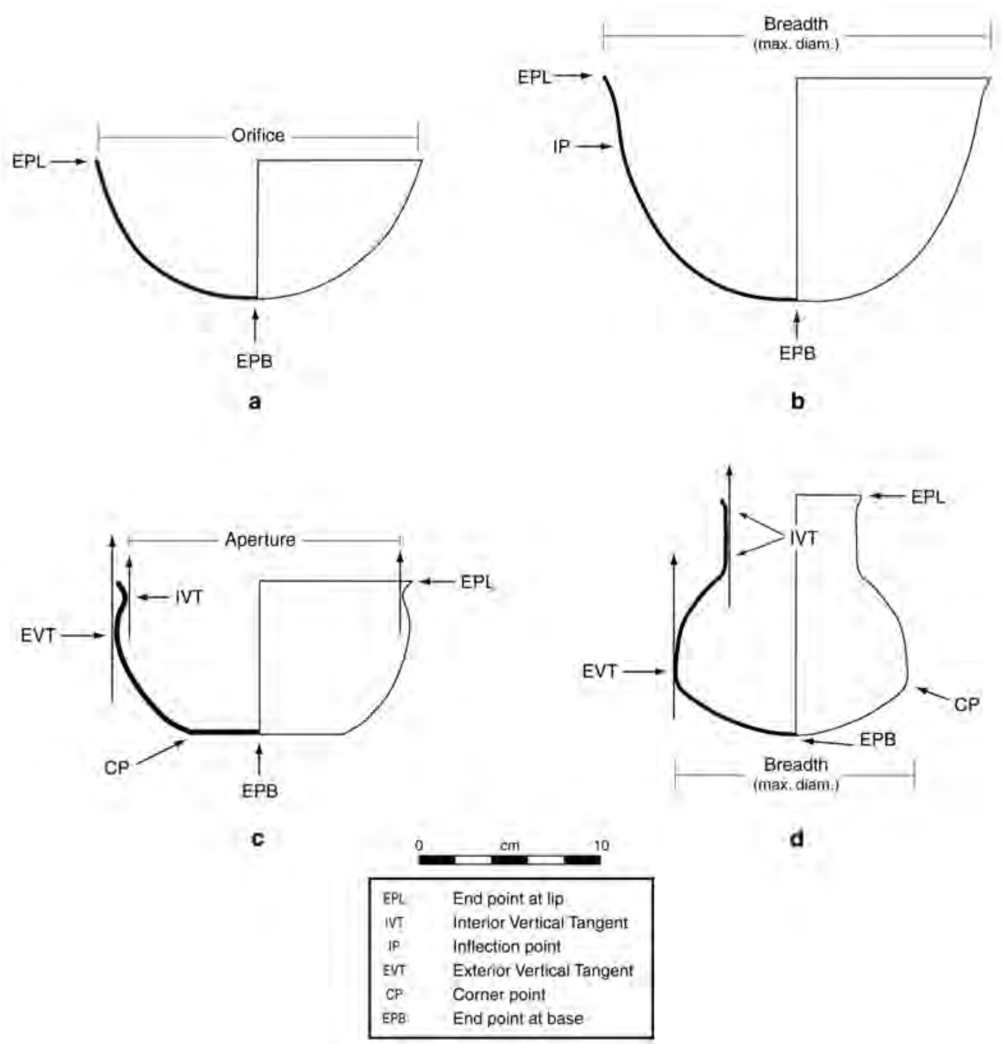
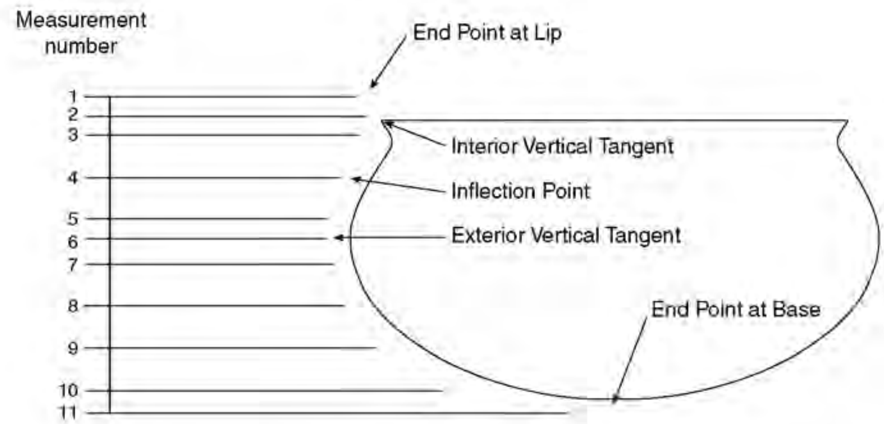


Figure 41. Characteristic points of a vessel profile.



Measurement number	Measurement type	Vertical cm	Diameter cm
1	End Point at Lip	0	16
2	Interior Vertical Tangent	0.5	14.4
3	Supplementary	1	15.7
4	Inflection Point	2.1	17.2
5	Supplementary	3	18.3
6	Exterior Vertical Tangent	3.5	18.9
7	Supplementary	4	18.2
8	Supplementary	5	16
9	Supplementary	6	14.2
10	Supplementary	7	11.5
11	End Point at Base	8	0

Figure 42. Schematic showing how contour metric measurements were taken.

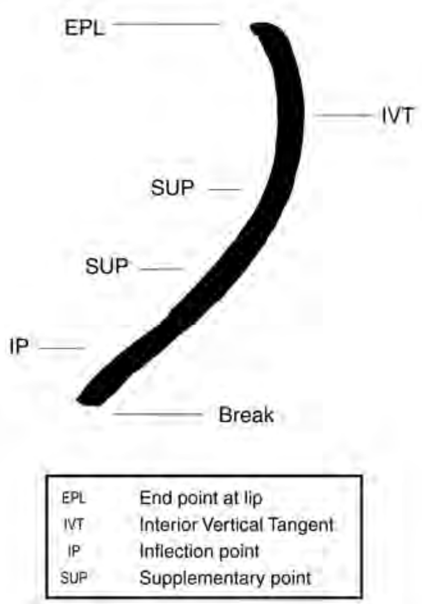


Figure 43. Example of where metric measurements were taken on rim sherds (vertical and diameter at each point, see Figure 41).

Another advantage in using the system described here relates to calculating vessel volume. Vessel volume provides a critical component to any study interested in vessel function. Recording the vessel profile in *x*-coordinates (diameter) and *y*-coordinates (vertical) allowed the data to be exported to AutoCAD and the volume of each vessel calculated. I presented a pilot study in Appendix A.1 of Volume 2 that compares the direct measurement of volume against the calculated volume derived from the vessel profile. The results provide ample justification for using the calculated volume figures through the remainder of this study.

In addition to the detailed and objective recording of the vessel profile, a subjective determination of gross vessel form provided a heuristic device for organizing the data into broad analytical categories. Vessel forms included restricted jars with a neck, bowls, and eccentrics and unrestricted bowls. Figure 44 presents examples of each category using selected vessels from the CCP collection.

Functional Ratios

Several researchers provided quantitative measures in the form of aperture-to-breadth and height-to-breadth ratio ranges that correspond to intended vessel function for ethnographic vessels of known use (Crown 1983; Henrickson and McDonald 1983; Lindauer 1988; Smith 1985, 1988; M. Stark 1995b). I used the functional ratios presented by Crown (1983) and Lindauer (1988). Crown and later Lindauer derived their ratios from ceramics produced by nine different ethnic groups from the Southwest (see Figure 36). The method used to calculate the ratios is straightforward and involves three metric measurements: total height, aperture, and breadth (maximum diameter). The aperture is divided by the breadth and then by the total height to derive the functional ratios. The ratios for each vessel with complete measurements provided an initial functional assignment based on the five functional categories defined by Crown and Lindauer (see Table 31).

Correlating Rim Sherds with Whole-Vessel Data

The complete and reconstructed vessels provided an excellent data set for the foundations of a functional study, such as the one presented here. The sample of vessels derived primarily from mortuary contexts, however. Using a sample composed mainly of mortuary vessels as the basis for comparisons to rim sherds recovered from domestic refuse requires a critical evaluation of the mortuary sample. Like Blinman (1988) and Vint (2000b), I assume, based on use wear, that the mortuary vessels represent a subset of domestic containers. Figure 34 provides a schematic showing the three contexts used in this study. The mortuary recovery contexts biased the CCP collection toward smaller jars (see below). I included DAI's large vessels from house floors (n = 11) and mortuary contexts (n = 3) to round out my sample of whole vessels.

In the course of recording the rims and vessels and, later, while researching vessel morphology for the area, I recognized a pattern. There appears to be a general repertoire of vessel shapes. Within this repertoire, vessel size can vary radically. Stated another way, a specific vessel shape may come in various sizes. Vint's work in Tonto Basin illustrates this point well. Vint (2000b:Figure 4.1–4.4) illustrated multiple "utilitarian" (read unpainted) vessel profiles. Even a casual look Vint's illustrations shows that similar, even identical, vessel profiles come in multiple sizes. Therefore, I assume that the sample of small jar forms recovered from the mortuary context (plus the 14 larger vessels from DAI's TCAP) provide an appropriate data set of vessel profiles to compare with rim-sherd profiles.

Profile Types and Rim Comparisons

The primary research goal centered on vessel use. In addition to the large sample of whole and reconstructible vessels, among which determining function was a little more straightforward, the CCP generated a large number of rim sherds (n = 1,670). Following Braun's (1980) work that derived functional inferences from a data set composed entirely of rim sherds, I designed an analysis that would use the profile data from whole vessels as a comparative baseline for rim sherds. Here, I present the premise, underlying assumptions, and the mechanical methods for the analysis.

First, I argued that the mortuary vessels represent containers used within a domestic context for various mundane culinary activities prior to ultimately being interred with the buried individual. Second, despite the bias toward smaller jars, the vessel profile—that is, the overall shape of the vessel—is directly comparable to larger vessels as represented by rim sherds. Further, each whole or reconstructed vessel that is sufficiently complete to generate the functional ratios was assigned to a functional category. This resulted in each of the profile types (discussed below) having a functional assignment.

Profile Types

Borrowing from Orton et al.'s (1993:120) envelope system, profile types were used to infer original vessel shape for rim sherds for both bowls and jars (Braun 1983). I created the profile types by importing the profile coordinates (vertical and diameter) data into AutoCAD. Once in AutoCAD, I "stacked" the vessel profiles one on top of the other by gross vessel form—jar and bowl. I then evaluated each individual vessel against all the others. This made it possible to create subgroups based on characteristics of the vessel

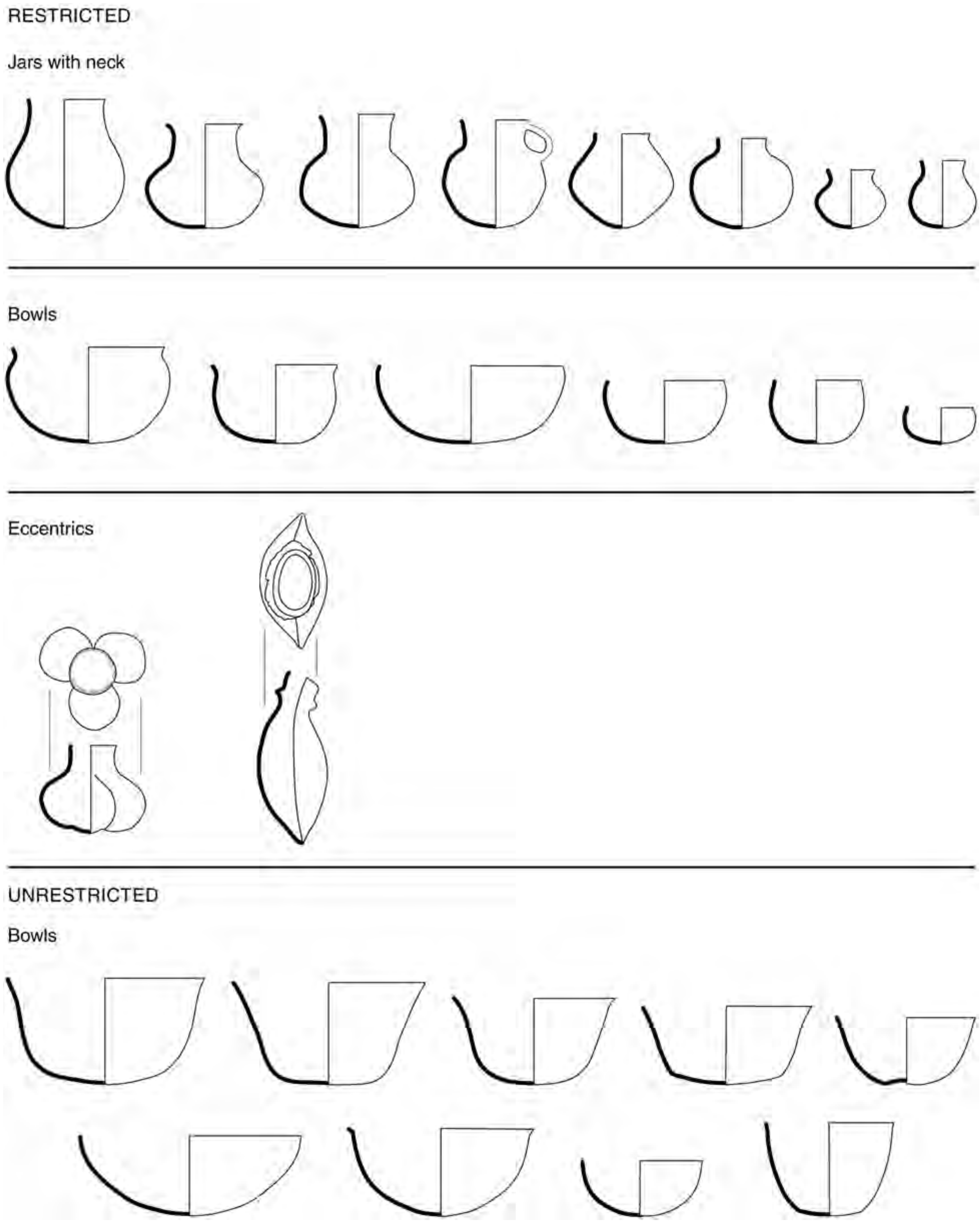


Figure 44. Gross formal categories used in this study (not to scale).

profile. Ultimately, I grouped the 203 vessels into 22 profile types—A–V. I then imported the rim-profile data one at a time and subjectively "fitted" each rim sherd to a corresponding profile type based on how well the rim profile matched the composite, or stacked, vessel-profile group. The profile type for each "fitted" rim sherd was entered into a field in the database. Once assigned to a profile type (A–V), the rim sherd then received a functional assignment by association.

Size-Class Determinations for Whole and Reconstructible Vessels

The primary research goal of this study centers on inferring the intended function of prehistoric ceramic containers. Nelson (1981:109–111) discussed the relationship of capacity and function in terms of the kinds of materials contained within the vessels (liquid or dry), the amount, the length of time they were contained, and the number of anticipated users of the material during that time. Arnold (1985:145–147) pointed out environmental factors, such as distance to and availability of water and other necessities, and how they related to observed vessel sizes. Rim sherds constitute a large portion of the sample under investigation. Direct volume measurements are not possible on such a data set. Therefore, I intended to use the sample of whole and reconstructible vessels to model volume determinations for the sample of rim sherds.

Archaeological and ethnographic data sets usually exhibit a continuous distribution of vessel sizes (Blinman 1988; Ericson and De Atley 1976; May and Tuckson 1982; Nelson 1981; Reina and Hill 1978; Smith 1983, 1985; B. Stark 1995; Vint 2000b). The sample under consideration here also exhibits a continuous distribution of size classes (see below). The purpose of creating arbitrary size classes is purely for their analytical potential. The size classes provide a means of refining the functional categories used in this study and, more importantly, provide metric parameters that enable proxy size determinations for the vessels represented only by rim sherds.

Container volume shares a multivariate relationship with common vessel measurements such as orifice diameter, total height, aperture diameter, and maximum diameter (Rice 1987). Blinman (1988) and Vint (2000b) provided the basic method for modeling vessel size for rim sherds from a sample of whole-vessel measurements. The analytical methods presented here follow Blinman's and Vint's procedures closely.

The four variables mentioned above—total height and orifice, aperture, and maximum diameters—in conjunction with container volume represent the variables used in the cluster analysis of the whole and reconstructible vessels. The sample consisted of 205 vessels (191 CCP vessels and 14 TCAP vessels) divided into two formal categories: bowls (n = 141) and jars (n = 64). I used a hierarchical cluster analysis. The analysis of the bowl and jar data followed identical procedures. Following Vint, I used *z*-scores (*z* = observed value minus the mean of that variable, divided by the standard deviation of that variable) to minimize the effects of extreme outliers influencing the cluster information. Ward's cluster method and an interval measure using squared Euclidean distance provided the cluster analysis method. Like Vint, I defined the clusters subjectively by looking at the cluster membership in relation to the summary statistics and bivariate plots using permutations of the five variables. Using this method, I defined four vessel-size classes for each of the two formal categories. I present and summarize the results below.

Modeling Size Class for Rims

Rim sherds by definition represent only a portion of the original vessel at the lip. Consequently, not all of the variables useful in predicting volume were present. Therefore, only those rim sherds (n = 493) with measured values for orifice diameter and wall thickness and those assigned to the two formal categories—jar (n = 172) and bowl (n = 321)—were used.

I used the sample of vessels with known volumes to create the discriminant functions for each of the four size classes in the two formal categories. Blinman (1988) and later Vint (2000b) found that transforming the maximum volume to its $\log_{10}$ value provided a relatively linear association between the orifice diameter and volume variables. Figure 45 presents the bivariate plots of orifice diameter and the transformed volume values for the whole and reconstructible bowls and jars. The Pearson correlation coefficients for the two variables used in the discriminant analysis reveal a strong correlation between orifice diameter and the transformed volume for bowls ($r = .842$, $p < .001$) and jars ($r = .815$, $p < .001$); however, for jars, thickness weakly correlated with transformed volume ($r = .642$, $p = .001$) and poorly to weakly correlated with bowls $r = .214$, $p = .011$). Nonetheless, coefficients for thickness suggest that as volume increases, so does vessel-wall thickness. The relationships of the two variables to volume therefore provide a reasonably good predictor of volume for the rim sherds. I present the results of the discriminant analysis for the rim sherds below.

Results

In this section, I present the results of the analyses. I divided the section into three parts. The first presents the results of the functional analyses applied to the whole and

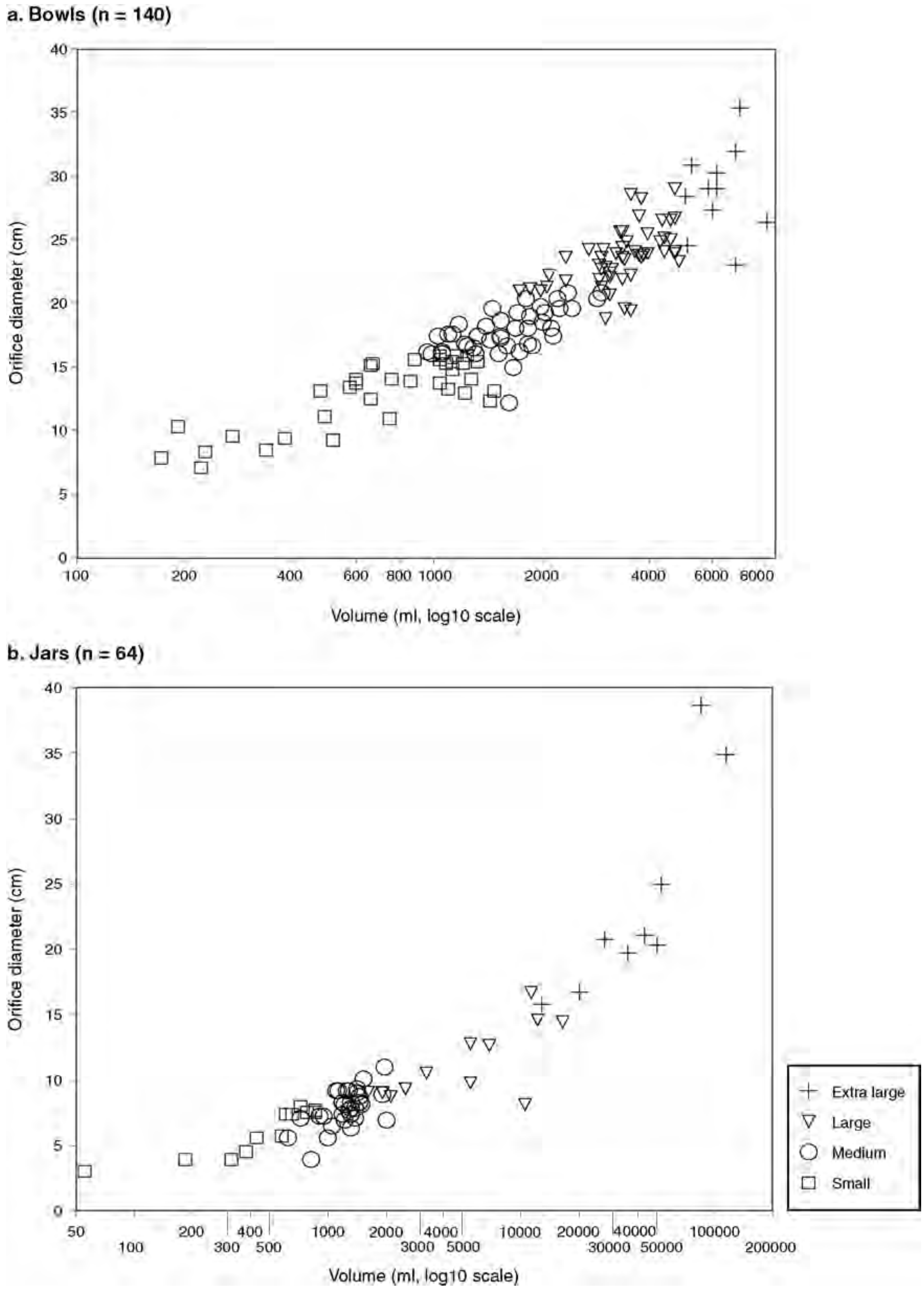


Figure 45. Bivariate plots by orifice diameter and transformed volume for whole and reconstructible vessels: (*a*) bowls; (*b*) jars.

reconstructible vessels. The second section presents the results of the rim-sherd analyses. Finally, in the last part, I present the results of the classifications by archaeological context and provide summaries of independent data sets relating to subsistence activities.

Prior to a presentation of the results, I provide a brief review and clarification of the sample used in the analyses. Table 33 provides the breakdown for the total number of rim sherds and vessels used in the analyses and presented in the results below. The vessels or rims suited for inclusion in an analysis depended on several factors. For example, vessels that were not bilaterally symmetrical cannot be measured in diameters. Therefore, these vessels were not included in the analyses beyond attribute recording. In addition, rim sherds are often too small to accurately measure the arc representing the diameter of the vessel at a specific point. Rims that were too small to allow for the collection of accurate measurements were excluded from the profile fitting and the size-class determinations. All of the analyses were done in aggregate using the unique identifiers for each rim sherd or vessel. I did not separate the collections by site or ceramic type. This was done to minimize any potential unconscious bias.

Functional Ratios

Preliminary functional assignments for each vessel were based on the aperture-to-breadth and height-to-breadth ratios. A total of 193 CCP vessels produced ratio data. Figure 46 shows those vessels (n = 123) that plotted within an ethnographically defined ratio range that corresponded to a functional category. Seventy of the CCP vessels plotted outside the ethnographically defined ratio ranges, however (see Figure 46). Most of the vessels fell just outside the ethnographically defined functional ratios (see Figure 46). I examined each of the 70 vessels individually and provided a subjective functional assignment based on proximity of the ratio plot to ethnographically defined ranges. Further, I examined the vessel morphology and compared it to those vessels with a functional association. I then assigned the vessels to what I termed an "inferential functional" category. Usually, this required using a combined functional category. For example, the food-preparation/cooking category was the dominant functional assignment for these vessels. In this way, I assigned a function to all 70 of CCP vessels that fell outside the ethnographically expected range, resulting in a total of 193 CCP vessels with functional associations.

Although the 14 TCAP vessels produced ratios, three vessels plotted outside the ethnographically defined ratio ranges (Figure 47). I followed the same procedure described for the CCP vessels and ultimately placed each vessel within an inferred functional category. Together, the total number of vessels in the sample with functional assignments was 207.

Table 34 presents the total number of vessels in the sample with functional assignments. Conspicuously absent from the functional categories are dry-storage vessels. Their absence does not suggest that the Tonto Basin inhabitants did not use ceramic containers for dry storage. Instead, I suggest that vessels assigned to the functional category of liquid storage could also have functioned well as dry-storage vessels.

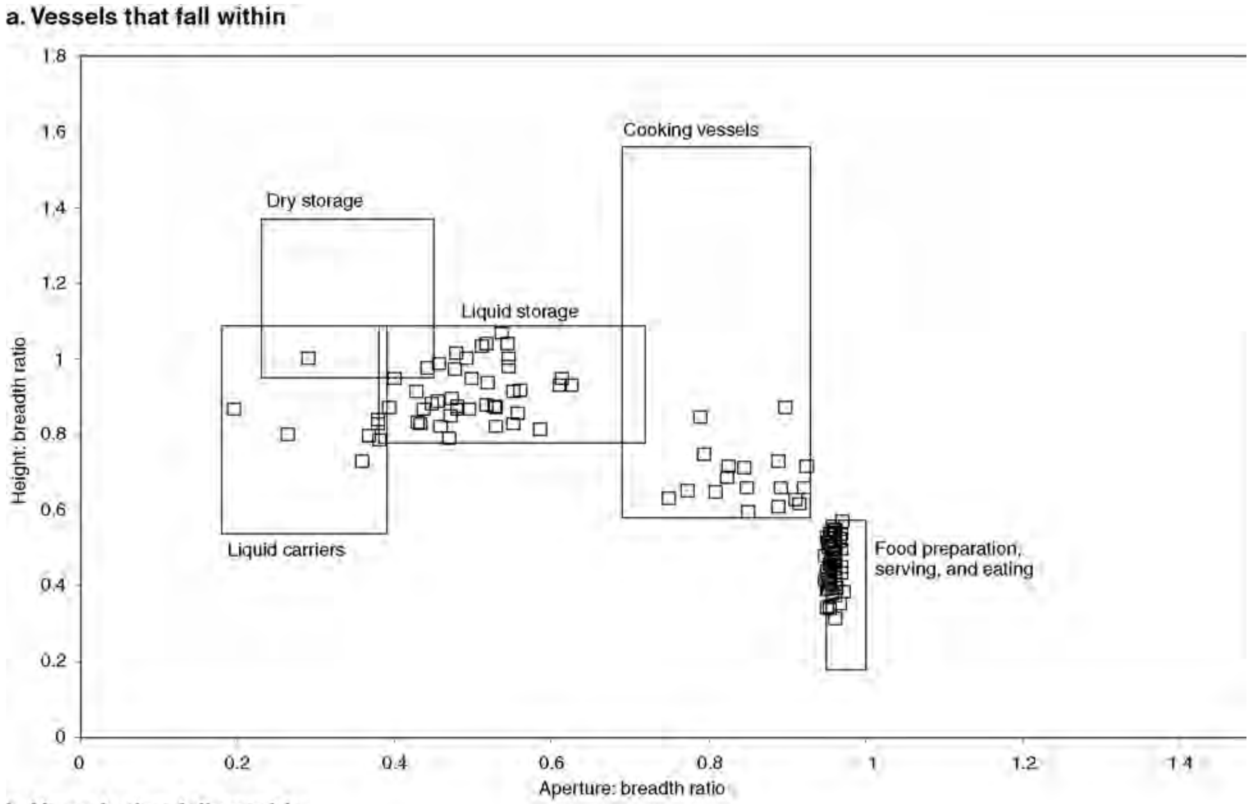
Inferred Function and Volume

Volume is critical to any functional study, especially for studies like this, which rely on ratios derived from ethnographic vessels. The ratios neutralize the size differences. Table 35 presents the statistical breakdown of vessel volume by inferred functional category. The minimum volume values represented in Table 35 testify to the common occurrence of small vessels within the sample. For example, the smallest vessel is in the liquid-storage category and is slightly larger than a shot glass (55 ml). Ironically, the largest vessel falls within the same category and corresponds to a volume of approximately 114,000 ml (see Table 35). The smallest vessels in the liquid-storage category are morphologically similar to the much larger vessels in the same category. They may not have actually functioned as liquid storage vessels, but they are remarkably similar in shape to the larger vessels in the same category. Container volume provides an independent variable when considering vessel function. For example, the category of food preparation, serving, and eating contains 62 vessels with a mean volume of 1.7 liters (1,732.64 ml). The variability in volume ranges from approximately 0.6 liters (582 ml) to 3.5 liters (3,487 ml).

Previous researchers have used these data (along with other information) to estimate group or household size (Turner and Lofgren 1966). Other research has pointed out that vessel capacity relates more directly to other factors (Nelson 1981). Therefore, estimating group size is not a matter of simply equating big vessels with big groups. Preparing meals for any size group often requires large vessels for mixing. This simple functional consideration could alone account for large vessels without a relationship to group size. In this study, I use the vessel-size classes (presented below) to refine the functional interpretations of the whole and reconstructible vessels and the vessels represented by the rim sherds.

Profile Types

An important component of the study was to use the whole- and reconstructible-vessel data as a comparative baseline for the rim sherds. Following the methods described above, 22 profile types were defined—A through V. Table 36 provides the total number of vessels representing



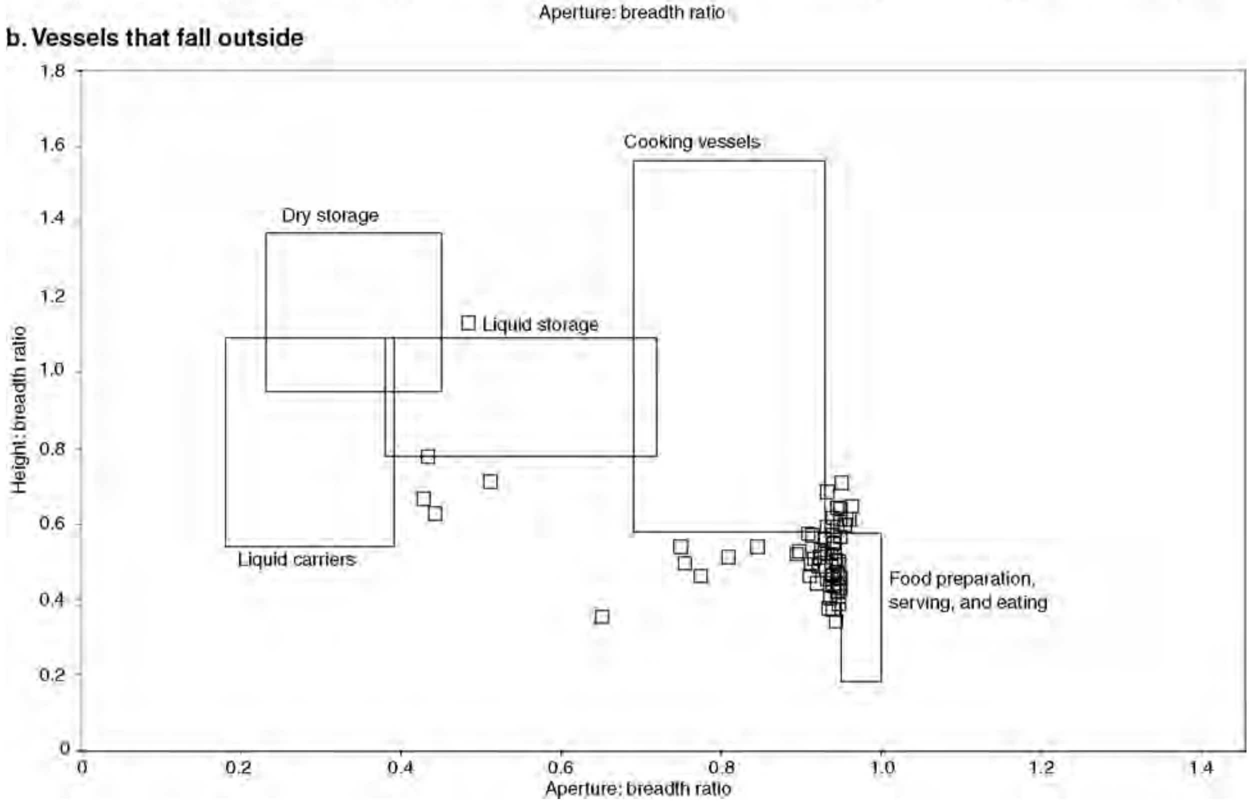


Figure 46. (*a*) Scatterplot of CCP vessels that fall within the ethnographically defined functional-ratio ranges. (*b*) Scatterplot of CCP vessels that fall outside the ethnographically defined functional-ratio ranges.

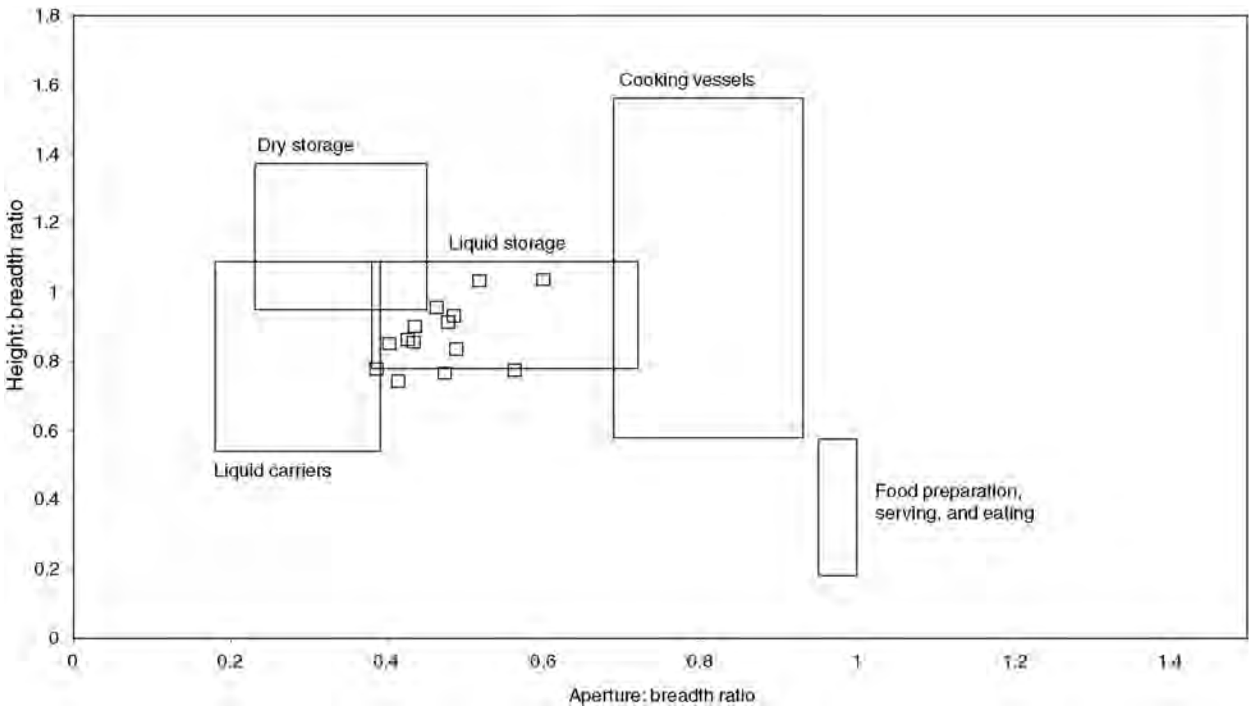


Figure 47. TCAP vessels plotted against the ethnographically defined functional-ratio ranges.

Table 34. Counts of CCP and TCAP Vessels within the Inferred Functional Categories

Inferred Vessel Function	n	Percent of Total
Cooking	17	8.3
Food preparation/serving/eating	62	30.2
Food preparation/cooking	62	30.2
Liquid carrier/liquid storage[a]	3	1.5
Liquid carriers	6	2.9
Liquid storage[b]	53	25.9
Liquid storage/dry storage	2	1.0
Total	205	100

[a] Includes 2 Tonto Creek Archaeological Project (TCAP) vessels.
[b] Includes 12 TCAP vessels.

Table 35. Summary Statistics for Volume by Inferred Functional Category, CCP and TCAP

Inferred Vessel Function	Minimum (ml)	Maximum (ml)	Mean (ml)	Standard Deviation	Number of Vessels
Cooking	171	3,543	1,306	945	17
Food preparation/serving/eating	582	8,527	3,488	1,733	62
Food preparation/cooking	192	5,120	1,738	1,103	62
Liquid carrier/liquid storage	1,303	12,183	6,303	5,493	3
Liquid carriers	319	10,461	2,792	3,810	6
Liquid storage	55	114,125	10,032	22,105	53
Liquid storage/dry storage	183	624	404	312	2
Total vessels					205

Table 36. Counts for Profile Groups by General Vessel Form

Profile Type, by Vessel Form	Project Count (n)			Percent of Vessel Form Total
	CCP	TCAP	Total	
Bowls				
A	6	—	6	4.3
B	8	—	8	5.7
C	4	—	4	2.8
D	4	—	4	2.8
E	3	—	3	2.1
F	2	—	2	1.4
G	1	—	1	0.7
H	5	—	5	3.5
I	63	—	63	44.7
J	29	—	29	20.6
K	5	—	5	3.5
L	3	—	3	2.1
M	1	—	1	0.7
N	4	—	4	2.8
O	1	—	1	0.7
P	1	—	1	0.7
No profile fit	1	—	1	0.7
Total	141	—	141	100
Jars				
Q	16	2	18	28.1
R	21	3	24	37.5
S	3	4	7	10.9
T	7	2	9	14.1
U	1	3	4	6.3
V	1	—	1	1.6
No profile fit	1	—	1	1.6
Total	50	14	64	100

Key: CCP = SR 188–Cottonwood Creek Project; TCAP = Tonto Creek Archaeological Project.

each profile type. The sample of vessels used in this study revealed more diversity within the bowl forms. The bowl forms represented 16 different profile types vs. only 6 for the jar forms. The diversity in vessel form reflects some subtle differences in how the potters treated the vessel sidewalls. After assigning the profile types, I examined the groups to see if they correlated with ceramic types. No such correlation existed. In fact, the unpainted portion of the sample consists of 184 vessels from four different categories—red corrugated (n = 65), red ware (n = 107), brown corrugated (n = 3), and brown plain (n = 9). At least one or more of these four categories is represented in all but 2 of the profile types. Similarly, the 19 painted vessels occur in 8 of the 22 profile types.

The sample of vessels from DAI's TCAP, selected to round out the CCP sample with large-jar forms, provided some corroboration to one of my underlying assumptions—similar vessel shapes, or profiles, come in large and small sizes. The 14 TCAP vessels contributed to five of the six profile types defined for the jar forms (see Table 36). Overall, the diversity in vessel forms represented by the sample of whole and reconstructible vessels provides a solid foundation for comparing the rim sherds (see below).

Tables 37 and 38 provide a summary of the functional associations for vessels within the profile types. As expected, no conflicting functional categories occur within the same profile type. Some ambiguities in function exist, however. Although profile types contain vessels assigned to the food preparation, serving, and eating category and the cooking category, these two categories are not necessarily mutually exclusive. The lack of mutually exclusive functional categories within a single profile type enabled me to assign a general function to each profile type. In turn, the functional association of the profile types provided the functional assignments for the rim sherds "fitted" within each of the profile groups (see below).

Table 37. Number of Bowls by Profile Group and Inferred Function for CCP

Profile Type	Inferred Function		
	Cooking	Food Preparation/ Serving/ Eating	Food Preparation/ Cooking
A	4	2	—
B	—	2	6
C	3	1	—
D	3	1	—
E	—	3	—
F	2	—	—
G	1	—	—
H	2	3	—
I	—	27	35
J	—	9	20
K	—	3	2
L	—	2	1
M	—	—	1
N	2	2	—
O	—	—	1
P	—	—	1
Total	17	62	62

Note: The selection of Tonto Creek Archaeological Project vessels consisted only of jars.

Table 38. Number of Jars by Profile Group and Inferred Function for CCP and TCAP

Profile Type	Inferred Function							
	Liquid Carriers/Liquid Storage		Liquid Carriers		Liquid Storage		Liquid Storage/Dry Storage	
	CCP	TCAP	CCP	TCAP	CCP	TCAP	CCP	TCAP
Q	1	1	4	—	11	1	—	—
R	—	—	—	—	20	3	1	—
S	—	—	—	—	3	4	—	—
T	—	—	—	—	6	2	1	—
U	—	1	—	—	1	2	—	—
V	—	—	1	—	—	—	—	—
No profile fit	—	—	1	—	—	—	—	—
Total	1	2	5	—	41	12	2	—

Vessel-Size Class

The results of the hierarchical cluster analysis designed to segregate the whole and reconstructible vessels into size classes provided an analytical tool for refining vessel function and predicting vessel size for the rim sherds (presented below). Based on this hierarchical cluster analyses, I defined four size classes within each of the two formal categories (bowl and jar). Table 39 presents the summary statistics by size class for container volume for the bowls and jars. The multivariate relationship of the variables used in the cluster analysis resulted in overlapping volume values between the size classes (see Table 39; Figure 45). Following Vint (2000b:Figures 4.25 and 4.27), I provide idealized schematic drawings of the vessel-size classes for bowls (Figure 48) and jars (Figure 49). I used the mean values for height and maximum diameter for the bowls, and for the jars, I added the mean value for orifice to draw the idealized vessels for each size class (see Figures 48 and 49).

Rim Sherds

The vast majority of archaeological collections consist of fragments. The challenge to any archaeological study directly relates to what type of information can be learned from the discarded, fragmented remains of what used to be complete artifacts functioning within a behavioral or systemic context. The CCP collection of whole and reconstructible vessels provided an opportunity to examine complete containers and develop a comparative baseline to which the rim sherds could be compared. To this end, I developed profile types using the whole vessels (described above) and defined vessel-size classes to facilitate a discriminant analysis to model vessel size for rim sherds.

Profile Types and Rim Sherds

Fitting the rim sherds to the profile types defined from the whole and reconstructible vessels provided a means of inferring general morphological traits concerning the complete vessel represented by the rim. Some of the rims were assigned to an either/or category. For example, profile Type D/E represents rim sherds for which a definitive profile association was not possible. Table 40 provides the profile types defined for the bowl-rim sherds. Table 41 provides the profile types corresponding to jar-rim sherds. Like the whole vessels, the rim-sherd collection reveals no correspondence between ceramic type and profile type. The ceramic types occur in varying frequencies throughout the profile types. Four (Types G, K, L, and P) of the 16 bowl-profile types are not represented in the rim-sherd collection, however (compare Table 40 with Table 36). Only one of the jar-profile types (Type V) is not represented by the rim-sherd collection. The relatively low percent of rim sherds that were not "fitted" to a profile type (see Tables 40 and 41) suggests that the diversity in vessel profiles represented by the whole and reconstructible vessels provided a sample representative of the diversity of container shapes.

Table 40 provides the functional associations by profile type for the bowl-rim sherds. The bowls represent three categories of inferred function. Not surprisingly, the functions are in some way associated with food preparation, cooking, serving, and consumption. Table 41 shows the functional association for the jar-rim sherds. Liquid-storage vessels and liquid carriers represent the functional associations for the jar-rim sherds.

Table 39. Summary Statistics for the Vessel-Size Classes for CCP and TCAP Vessels by Formal Category

Size Class, by Vessel Form	Minimum (ml)	Maximum (ml)	Mean (ml)	Standard Deviation	Number of Vessels
Bowls					
Small	171	1,474	804	387	36
Medium	953	2,936	1,689	517	42
Large	1,724	4,858	3,421	802	52
Extra Large	5,004	8,527	6,282	1,049	11
Total					141
Jars					
Small	55	872	537	265	12
Medium	624	2,009	1,283	320	31
Large	1,627	16,266	6,606	4,852	12
Extra Large	12,773	114,125	49,175	32,476	9
Total					64

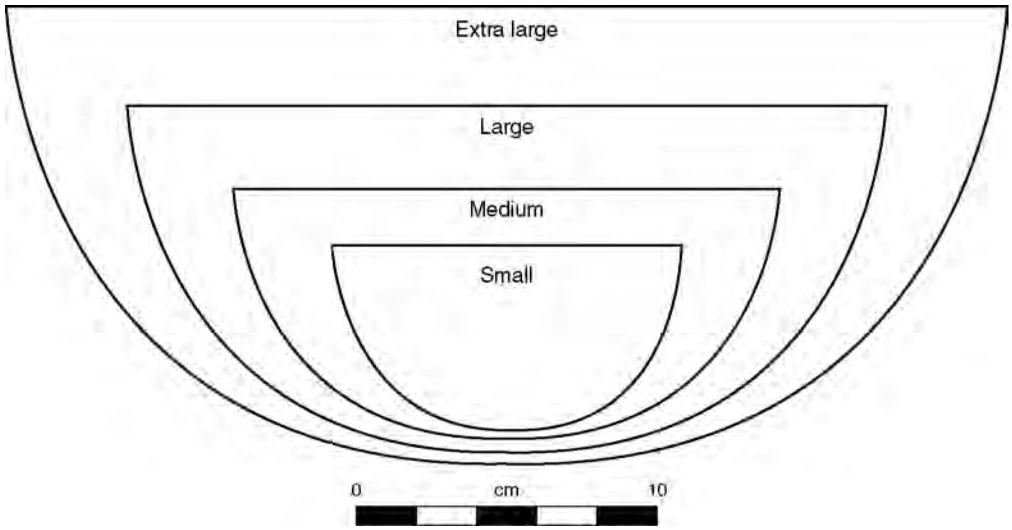


Figure 48. Schematic bowl forms illustrating the relation of size classes based on mean vessel dimensions.

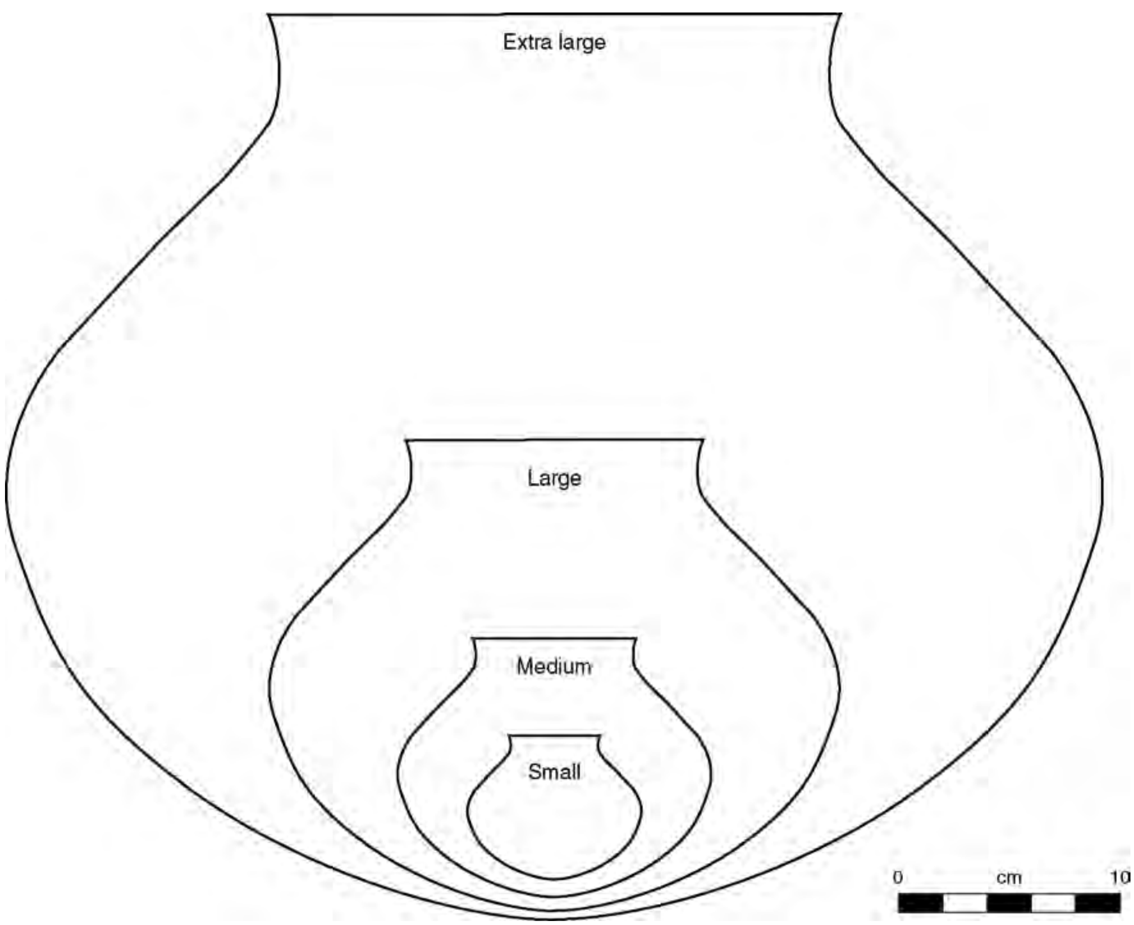


Figure 49. Schematic jar forms illustrating the relation of size classes based on mean vessel dimensions.

Table 40. Profile Types and Their Functional Associations for CCP Bowl-Rim Sherds

Profile Type	Inferred Function	n	Percent of Total
A	food preparation/cooking	12	3.7
B	food preparation/cooking	5	1.6
C	cooking	4	1.2
D	cooking	2	0.6
D/E	food preparation/cooking	7	2.2
E	food preparation/cooking	1	0.3
F	cooking	2	0.6
H	food preparation/cooking	16	5.0
I	food preparation/cooking	153	47.7
J	food preparation/serving/eating	87	27.1
J/N	food preparation/cooking	1	0.3
M	food preparation/serving/eating	21	6.5
N	food preparation/cooking	6	1.9
O	food preparation/serving/eating	1	0.3
No profile fit	no function assigned	3	0.9
Total		321	100

Table 41. Profile Types and Associated Functional Assignments for CCP Jar-Rim Sherds

Profile Type	Inferred Function	n	Percent of Total
Q	liquid carrier/liquid storage	22	12.8
R	liquid storage	49	28.5
R/T	liquid storage	32	18.6
S	liquid storage	12	7.0
T	liquid storage	37	21.5
U	liquid carrier/liquid storage	7	4.1
No profile fit	no function assigned	13	7.6
Total		172	100

Modeling Vessel Size for Rim Sherds

The hierarchical cluster analysis resulted in the definition of four size classes for bowl and jar formal categories (see Table 39; Figures 45 and 48). The assigned size classes then helped define the parameters of the discriminant analysis used to predict size class for rim sherds. As did Vint (2000b), I included the whole and reconstructible vessels with known size-class memberships in the discriminant analysis. This allowed for an assessment of how well the orifice diameter and thickness variables alone would predict the correct size-class membership for the whole and reconstructible vessels.

Table 42 presents the results of the discriminant analysis for the whole and reconstructible vessels of known size and the predicted size-class membership for the bowl-rim sherds. Using the two variables of orifice diameter and wall thickness, the discriminant analysis correctly assigned 101 (72.1 percent) of the 140 bowls to the correct size classes. The incorrect placement of the 39 bowls likely relates to several factors. Probably most important was the poor to weak relationship between wall thickness and vessel volume for bowls (see above). Another factor probably related to the depth of the bowl (total height); this variable was excluded, because it was not measurable on any of the rim sherds. Interestingly, the large-size-class category represented approximately 36.4 percent of the whole- and reconstructible-bowl vessels and 40.8 percent

Table 42. Discriminant Analysis Classification Matrix Showing Predicted Outcome for Vessels with Known Size-Class Membership and the Predicted Size-Class Assignments for the CCP Bowl-Rim Sherds

Bowl Size Class	Predicted Size Class								Total
	Small		Medium		Large		Extra Large		
	n	%	n	%	n	%	n	%	
Vessels									
Small	27[a]	77.1[a]	8	22.9	—	—	—	—	35
Medium	5	11.6	30[a]	69.8[a]	8	18.6	—	—	43
Large	—	—	4	7.8	36[a]	70.6[a]	11	21.6	51
Extra large	—	—	—	—	3	27.3	8[a]	72.7[a]	11
Rim sherds[b]	9	2.8	67	20.9	131	40.8	114	35.5	321

[a] Denotes correctly predicted size classes for the complete vessels.
[b] Includes rim sherds for which no function was assigned.

of the bowl-rim sherds. Therefore, the two categories containing the most members are the same for the bowl-rim sherds and the bowl vessels. Conversely, the small-size-class category is not well represented by the rim sherds (2.8 percent), whereas approximately 25 percent of the whole and reconstructible bowls correspond to the small-size-class category.

Table 43 presents the results of the discriminant analysis for the jars. Judging from the results, the two variables of orifice diameter and wall thickness provide better indirect measures of vessel volume. A total of 53 (82.8 percent) of 64 whole and reconstructible jars were placed in the correct size-class category (see Table 43). Perhaps the better results relate to the relatively stronger correlation between wall thickness and volume for jars when compared to bowls (see above). Comparing the relative frequencies of size-class membership between the vessels and rims sherds reveals an almost inverse relationship. That is, more of the rim sherds correspond to the larger-size classes, whereas the vessels correspond to the smaller-size classes.

Vessel Function, Context, and Independent Data

In this section, I provide summaries of the functional and size classifications by ceramic ware and then by context. I also present generalized results from other independent lines of evidence relating to subsistence activities at each of the sites. The results of the pollen, macrobotanical, and skeletal analyses provide independent data sets that yield vital information connected to the resources and behaviors relating to the subsistence strategies practiced by the prehistoric inhabitants. Viewed together, these data provide the basis for the synthesis that follows.

Ceramic Ware by Size and Function

Table 44 presents the whole and reconstructible vessels by ceramic ware and the function and size classifications. The small numbers of brown plain and brown corrugated likely resulted in the low diversity of container function (see Table 44). Conversely, the other three ceramic wares exhibit similar container-function variability. By contrast, the rim sherds show similar functional diversity within each ceramic ware (Table 45). These data show that the various ceramic wares were made and used for a multitude of functions.

Ceramic Container Function by Context

The five sites used in this study represent the remains of two different kinds of site functions: limited-activity areas and habitation areas. Two of the sites (AZ O:15:41/583 and AZ U:3:408/2015) were the remains of limited-activity areas immediately adjacent to habitation areas (see Volume 2). The remaining three sites (the Rock Jaw site [AZ U:3:407/2014], Vegas Ruin, and Crane site) represent the remains of habitation areas. The occupation of the Rock Jaw site was less intensive and, based on the presence of two superimposed structures, likely involved far fewer individuals than the occupations represented by the Vegas Ruin and Crane site (see Volume 2).

AZ O:15:41/583

Only three brown plain rim sherds from Site 41/583 met the sampling criteria for inclusion in the size-class and functional analyses classifications (see Volume 2, Chapter

Table 43. Discriminant Analysis Classification Matrix Showing Predicted Outcome for Vessels with Known Size-Class Membership and the Predicted Size-Class Assignments for the CCP Jar-Rim Sherds

Jar Size Class	Predicted Size Class: Small n	Small %	Medium n	Medium %	Large n	Large %	Extra Large n	Extra Large %	Total
Vessels									
Small	10[a]	83.3[a]	2	16.7	—	—	—	—	12
Medium	1	3.2	26[a]	83.9[a]	4	12.9	—	—	31
Large	—	—	2	16.7	9[a]	75.0[a]	1	8.3	12
Extra large	—	—	—	—	1	11.1	8[a]	88.9[a]	9
Rim sherds[b]	15	8.7	15	8.7	51	29.7	91	52.9	172

[a] Denotes correctly predicted size classes for the complete vessels.
[b] Includes rim sherds for which no function was assigned.

Table 44. Function and Size Class by Ceramic Ware for the Whole and Reconstructible Vessels in the CCP and TCAP Samples

Inferred Function, by Ceramic Ware	No Size Class n	No Size Class %	Size Class: Small n	Small %	Small n	Small %	Large n	Large %	Extra Large n	Extra Large %	Total n	Total %
Brown plain												
Food preparation/cooking	—	—	—	—	—	—	1	33.3	—	—	1	11.1
Liquid storage	—	—	1	100	—	—	2	66.7	5	100	8	88.9
Subtotal, brown plain	—	—	1	100	—	—	3	100	5	100	9	100
Red plain												
Cooking	—	—	5	20.8	2	4.5	—	—	—	—	7	6.3
Food preparation/serving/eating	—	—	2	8.3	12	27.3	18	58.1	7	70.0	39	34.8
Food preparation/cooking	—	—	13	54.2	12	27.3	7	22.6	—	—	32	28.6
Liquid carrier/liquid storage	—	—	—	—	1	2.3	2	6.5	—	—	3	2.7
Liquid carrier	—	—	—	—	2	4.5	—	—	—	—	2	1.8

continued on next page

Inferred Function, by Ceramic Ware	No Size Class		Size Class: Small		Size Class: Small		Size Class: Large		Size Class: Extra Large		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Liquid storage	—	—	3	12.5	15	34.1	4	12.9	3	30.0	25	22.3
Liquid storage/dry storage	—	—	1	4.2	—	—	—	—	—	—	1	0.9
Scoop	2	66.7	—	—	—	—	—	—	—	—	2	1.8
Ladle	1	33.3	—	—	—	—	—	—	—	—	1	0.9
Subtotal, red plain	3	100	24	100	44	100	31	100	10	100	112	100
Brown corrugated												
Liquid storage	—	—	1	100	—	—	1	100	1	100	3	75.0
Scoop	1	100	—	—	—	—	—	—	—	—	1	25.0
Subtotal, brown corrugated	1	100	1	100	—	—	1	100	1	100	4	100
Salado Red Corrugated												
Cooking	—	—	6	31.6	2	11.1	2	8.3	—	—	10	15.4
Food preparation/serving/eating	—	—	—	—	1	5.6	15	62.5	3	75.0	19	29.2
Food preparation/cooking	—	—	8	42.1	8	44.4	4	16.7	1	25.0	21	32.3
Liquid carrier	—	—	1	5.3	1	5.6	—	—	—	—	2	3.1
Liquid storage	—	—	4	21.1	5	27.8	3	12.5	—	—	12	18.5
Dry storage/liquid storage	—	—	—	—	1	5.6	—	—	—	—	1	1.5
Subtotal, Salado Red Corrugated	—	—	19	100	18	100	24	100	4	100	65	100
Painted												
Food preparation/serving/eating	—	—	—	—	1	10.0	3	50.0	—	—	4	21.1
Food preparation/cooking	—	—	2	66.7	4	40.0	2	33.3	—	—	8	42.1
Liquid carrier	—	—	—	—	1	10.0	1	16.7	—	—	2	10.5
Liquid storage	—	—	1	33.3	4	40.0	—	—	—	—	5	26.3
Subtotal, painted	—	—	3	100	10	100	6	100	—	—	19	100
Total	4	1.9	48	23.0	72	34.0	65	31.1	20	9.6	209	100

Note: Table includes the ladle and three scoops.

Table 45. Function and Size Class by Ceramic Ware for the CCP Rim Sherds

Inferred Function, by Ceramic Ware	Size Class								Total	
	Small		Medium		Large		Extra Large			
	n	%	n	%	n	%	n	%	n	%
Brown plain										
Cooking	—	—	1	11.1	—	—	—	—	1	1.2
Food preparation/serving/eating	—	—	1	11.1	—	—	2	3.6	3	3.7
Food preparation/cooking	2	66.7	7	77.8	8	57.1	12	21.8	29	35.8
Liquid carrier/liquid storage	—	—	—	—	1	7.1	8	14.5	9	11.1
Liquid storage	1	33.3	—	—	5	35.7	33	60.0	39	48.1
Subtotal, brown plain	3	100	9	100	14	100	55	100	81	100
Red plain										
Cooking	—	—	—	—	2	3.6	1	1.3	3	1.8
Food preparation/serving/eating	—	—	2	7.4	17	30.4	20	26.0	39	23.8
Food preparation/cooking	—	—	19	70.4	27	48.2	36	46.8	82	50.0
Liquid carrier/liquid storage	—	—	2	7.4	1	1.8	3	3.9	6	3.7
Liquid storage	4	100	4	14.8	9	16.1	17	22.1	34	20.7
Subtotal, red plain	4	100	27	100	56	100	77	100	164	100
Brown corrugated										
Cooking	—	—	1	20.0	—	—	—	—	1	2.0
Food preparation/serving/eating	—	—	—	—	4	19.0	3	13.6	7	14.3
Food preparation/cooking	1	100	1	20.0	6	28.6	4	18.2	12	24.5
Liquid carrier/liquid storage	—	—	—	—	1	4.8	3	13.6	4	8.2
Liquid storage	—	—	3	60.0	10	47.6	12	54.5	25	51.0
Subtotal, brown corrugated	1	100	5	100	21	100	22	100	49	100
Salado Red Corrugated										
Cooking	—	—	—	—	2	2.8	—	—	2	1.4
Food preparation/serving/eating	1	11.1	15	62.5	24	33.8	17	43.6	57	39.9
Food preparation/cooking	5	55.6	5	20.8	23	32.4	14	35.9	47	32.9
Liquid carrier/liquid storage	1	11.1	3	12.5	4	5.6	2	5.1	10	7.0
Liquid storage	2	22.2	1	4.2	18	25.4	6	15.4	27	18.9
Subtotal, Salado Red Corrugated	9	100	24	100	71	100	39	100	143	100
Painted										
Cooking	—	—	1	6.3	—	—	—	—	1	2.5
Food preparation/serving/eating	—	—	—	—	3	18.8	—	—	3	7.5
Food preparation/cooking	—	—	14	87.5	13	81.3	4	100	31	77.5
Liquid storage	4	100	1	6.3	—	—	—	—	5	12.5
Subtotal, painted	4	100	16	100	16	100	4	100	40	100
Total	21	4.4	81	17.0	178	37.3	197	41.3	477	100

Note: Table excludes the 16 rim sherds that did not fit a profile.

2). Although the sample is small, the three rim sherds represent three vessels in the extra-large category (Table 46). Each rim corresponds to a separate (but not necessarily unrelated) inferred functional category. The extremely small sample limits the potential for the ceramics to contribute to interpretations that focus on inferred activities carried out at the locality.

AZ U:3:408/2015

Like Site 41/583, only a limited number of rim sherds met the criteria for inclusion in the analyses. Fourteen rim sherds provided the sample with functional and size classifications (see Table 46). Two of the rims represented red plain vessels, and the remaining 12 represented brown plain vessels. Although the numbers are small, most of the rim sherds (85.7 percent) represented food-preparation/cooking vessels. Interestingly, these processing containers are represented in each of the four size classes (see Table 46). The ceramic containers recovered from Site 408/2015 provided scant information concerning the activities associated with the occupation or use of the locality.

Rock Jaw Site (AZ U:3:407/2014)

The Rock Jaw site is the smallest of the three sites representing habitation occupations (see Volume 2). The sample included 10 brown plain sherds, 3 painted sherds, and 1 red plain sherd. Again, the sample of rim sherds that met the criteria for the analysis was small (see Table 46). Relative to the special-activity localities discussed above, the Rock Jaw site exhibited slightly more functional diversity. The cooking and food-preparation/cooking categories represented vessels for processing and consuming food. These containers represented three of the four size classes (see Table 46). The liquid-storage and liquid-carrier/liquid-storage categories each are represented only in the extra-large category. The ceramic data from the Rock Jaw site provide limited evidence concerning the types of subsistence activities carried out at or near the excavated locality.

Vegas Ruin (AZ U:3:405/2012)

The Vegas Ruin represents the most-intensively occupied and excavated habitation site in the CCP sample (see Volume 2). Multiple habitation structures, extramural pits, hearths, and human burials testify to the nature of the occupation. Table 47 presents the rim sherds and vessels by context, function, and size class. I use the label "domestic" to refer to any ceramics recovered from a nonmortuary provenience. The first thing apparent from looking at the table is that the vessels represent smaller containers when compared to the rim sherds (see Table 47). This holds true even for those vessels recovered from domestic contexts. The only vessels deriving from mortuary contexts that appear in the extra-large category are the food-preparation, serving, and eating vessels, along with those corresponding to the similar functional category of food preparation/cooking.

Table 46. Function and Size Class for Rim Sherds from Three of the CCP Sites

Inferred Function, by Context and Ceramic Category	Size Class								Total	
	Small		Medium		Large		Extra Large			
	n	%	n	%	n	%	n	%	n	%
	Site 41/583									
Domestic (rim sherds)										
Food preparation/cooking	—	—	—	—	—	—	1	33.3	1	33.3
Liquid carrier/liquid storage	—	—	—	—	—	—	1	33.3	1	33.3
Liquid storage	—	—	—	—	—	—	1	33.3	1	33.3
Total	—	—	—	—	—	—	3	100	3	100
	Site 408/2015									
Domestic (rim sherds)										
Food preparation/cooking	2	100	3	100	3	100	4	66.7	12	85.7
Liquid storage	—	—	—	—	—	—	2	33.3	2	14.3
Total	2	100	3	100	3	100	6	100	14	100
	Rock Jaw site (407/2014)									
Domestic (rim sherds)										
Cooking	—	—	1	50.0	—	—	—	—	1	7.1
Food preparation/cooking	—	—	1	50.0	4	100	5	62.5	10	71.4
Liquid carrier/liquid storage	—	—	—	—	—	—	1	12.5	1	7.1
Liquid storage	—	—	—	—	—	—	2	25.0	2	14.3
Total	—	—	2	100	4	100	8	100	14	100

Note: Table excludes the rim sherds that did not fit a profile.

Table 47. Function and Size Class for Vessels and Rim Sherds Recovered from the Vegas Ruin (405/2012), by Context

Inferred Function, by Context and Ceramic Category	No Size Class		Size Class: Small		Medium		Large		Extra Large		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Domestic rim sherds												
Cooking	—	—	—	—	1	1.7	3	2.5	—	—	4	1.2
Food preparation/serving/eating	—	—	1	7.7	16	27.1	39	32.2	31	23.7	87	26.9
Food preparation/cooking	—	—	3	23.1	32	54.2	46	38.0	38	29.0	119	36.7
Liquid carrier/liquid storage	—	—	1	7.7	4	6.8	6	5.0	11	8.4	22	6.8
Liquid storage	—	—	8	61.5	6	10.2	27	22.3	51	38.9	92	28.4
Subtotal, domestic rim sherds	—	—	13	100	59	100	121	100	131	100	324	100
Domestic vessels												
Cooking	—	—	1	20.0	1	100	—	—	—	—	2	25.0
Food preparation/serving/eating	—	—	—	—	—	—	1	100	—	—	1	12.5
Food preparation/cooking	—	—	3	60.0	—	—	—	—	—	—	3	37.5
Liquid storage/dry storage	—	—	1	20.0	—	—	—	—	—	—	1	12.5
Scoop	1	100	—	—	—	—	—	—	—	—	1	12.5
Subtotal, domestic vessels	1	100	5	100	1	100	1	100	—	—	8	100
Mortuary vessels												
Cooking	—	—	6	18.2	3	5.5	1	2.0	—	—	10	6.6
Food preparation/serving/eating	—	—	2	6.1	13	23.6	30	61.2	10	90.9	55	36.4
Food preparation/cooking	—	—	16	48.5	15	27.3	12	24.5	1	9.1	44	29.1
Liquid carrier/liquid storage	—	—	—	—	1	1.8	—	—	—	—	1	0.6
Liquid carrier	—	—	—	—	3	5.5	1	2.0	—	—	4	2.6
Liquid storage	—	—	9	27.3	20	36.4	5	10.2	—	—	34	22.5
Scoop	2	66.7	—	—	—	—	—	—	—	—	2	1.3
Ladle	1	33.3	—	—	—	—	—	—	—	—	1	0.6
Subtotal, mortuary vessels	3	100	33	100	55	100	49	100	11	100	151	100
Total	4	0.8	51	10.6	115	23.8	171	35.4	142	29.4	483	100

Note: Table excludes the rim sherds that did not fit a profile.

The number and diversity of container size and function provide ample data for inferring subsistence activities carried out during the occupation of the site. All of the functional categories described in this study are represented at the Vegas Ruin (see Table 47). Functional diversity and the presence of extra-large containers fits intuitively with the expectations of what should be recovered from habitation sites.

Crane Site (AZ U:3:410/2017)

Although slightly smaller, the Crane site is similar to the Vegas Ruin in many respects (see Volume 2). The presence of habitation structures, extramural pits, hearths, two granaries, and several human burials provide evidence for an intensive occupation. Table 48 provides the breakdown of the rim sherds and vessels by function, size class, and context. As with the Vegas Ruin, I use the term "domestic" to refer to any context other than a burial. Table 48 reveals a pattern similar to that seen in the Vegas Ruin data (compare Tables 47 and 48). The whole- and reconstructible-vessel data from domestic and mortuary contexts reflect smaller size classes when compared to the rim sherds (see Table 48). Unlike the vessels from the Vegas Ruin, however, none of the vessels (mortuary or domestic) corresponds to the extra-large-size class. Only the rim sherds represent containers (all functional categories) that correspond to the extra-large-size class (see Table 48).

Like those at the Vegas Ruin, the ceramics recovered from the Crane site provided an excellent archaeological data set to answer the research questions. Most of the functional categories defined for the study occur at the Crane site. The diversity in container function and size reflects the many culinary tasks performed during the occupation approximately 750 years ago.

Independent Data Sets

The research questions guiding the study presented here focus on culinary behaviors as they pertain to ceramic containers. Other data sets recovered from the CCP provided independent sources relating to the subsistence practices of the prehistoric inhabitants. Pollen and macrobotanical remains represent two of the primary data sets used by archaeologists to infer subsistence practices for prehistoric

Table 48. Function and Size Class for Vessels and Rim Sherds from the Crane Site (410/2017), by Context

Inferred Function, by Context and Ceramic Category	Size Class								Total	
	Small		Medium		Large		Extra Large			
	n	%	n	%	n	%	n	%	n	%
Domestic rim sherds										
Cooking	—	—	1	5.9	1	2.1	1	2.0	3	2.5
Food preparation/serving/eating	—	—	2	11.8	9	18.8	11	22.4	22	18.3
Food preparation/cooking	3	50.0	10	58.8	24	50.0	22	44.9	59	49.2
Liquid carrier/liquid storage	—	—	1	5.9	1	2.1	3	6.1	5	4.2
Liquid storage	3	50.0	3	17.6	13	27.1	12	24.5	31	25.8
Subtotal, domestic rim sherds	6	100	17	100	48	100	49	100	120	100
Domestic vessels										
Cooking	1	33.3	—	—	—	—	—	—	1	16.7
Food preparation/serving/eating	—	—	1	50.0	1	100	—	—	2	33.3
Food preparation/cooking	1	33.3	—	—	—	—	—	—	1	16.7
Liquid carrier	1	33.3	1	50.0	—	—	—	—	2	33.3
Subtotal, domestic vessels	3	100	2	100	1	100	—	—	6	100
Mortuary vessels										
Cooking	3	42.9	—	—	1	11.1	—	—	4	13.3
Food preparation/serving/eating	—	—	—	—	4	44.4	—	—	4	13.3
Food preparation/cooking	3	42.9	9	64.3	2	22.2	—	—	14	46.7
Liquid storage	1	14.3	4	28.6	2	22.2	—	—	7	23.3
Liquid storage/ dry storage/	—	—	1	7.1	—	—	—	—	1	3.3
Subtotal, mortuary vessels	7	100	14	100	9	100	—	—	30	100
Total	16	10.3	33	21.2	58	37.2	49	31.4	156	100

Note: Table excludes the rim sherds that did not fit a profile.

groups (Adams and Welch 1994; Fish 1988; Pearsall 2000). Another important data set relates to the individuals themselves. The excavation of several burials in association with the Vegas Ruin and the Crane site and a single burial from Site 408/2015 provide some direct evidence concerning the inhabitants' diet.

In the context of the study presented here, the pollen and macrobotanical data provide tangible indirect evidence relating to the cultivated and natural resources the inhabitants used. The burial data provide compelling direct evidence relating to the subsistence practices of the individuals who lived in Tonto Basin approximately 750 years ago. Below, I provide a brief discussion and present highlights from the results of the pollen, macrobotanical, and skeletal analyses.

Pollen Evidence

The pollen grains present in archaeological samples and their relationships to plant use and related behaviors of the prehistoric inhabitants are complex. Myriad cultural, natural, recovery, and analytical factors contribute to the presence or absence of pollen grains in any given archaeological context (Pearsall 2000). I present selected results from the 47 soil pollen samples and 59 pollen washes submitted to Owen K. Davis (Volume 2, Appendixes D.2 and D.3, respectively). The soil samples come from Site 41/583 (n = 2), AZ U:3:404/2011 (n = 10), Site 408/2015 (n = 7), the Vegas Ruin (n =14), and the Crane site (n = 14). A total of 56 pollen washes were collected from mortuary vessels from the Vegas Ruin. The remaining 3 pollen washes were collected from mortuary vessels from the Crane site.

I provide only those pollen taxa that potentially represent plants of economic use (Table 49). I used the results of Suzanne K. Fish's (1995) pollen study from Tonto Basin to select potential economic taxa. Table 49 does not provide the pollen counts as presented by Davis (Volume 2, Appendixes D.2 and D.3). Instead, I show whether the taxon was present in at least one soil sample or pollen wash from the site.

The least equivocal among the potentially economic pollen taxa are the cultigens (Fish 1995; Pearsall 2000). Conversely, the wild-plant resources represent significant overlap among the species naturally occurring in the area today and those used prehistorically (Fish 1995). Other lines of evidence suggest that at least some of the pollen grains represent species exploited by the prehistoric inhabitants. For example, the presence of *Platyopuntia* (prickly pear) pollen grains at the Vegas Ruin, in addition to the presence of a charred seed from the same taxon (see below), supports the inference that the pollen grains reflect cultural use of the plant rather contamination of the sample from modern pollen (e.g., Fish 1995). Taken at face value, the pollen data reflect a subsistence strategy that used cultivars and exploited wild-plant resources.

Macrobotanical Evidence

Macrobotanical remains provide some of the best evidence relating to subsistence strategies of prehistoric groups. Like preserved pollen, however, several factors contribute to the preservation and recovery of archaeobotanical remains (Pearsall 2000). Karen R. Adams (Volume 2, Chapter 7) analyzed the archaeobotanical remains from the CCP sites. No samples were submitted from Site 408/2015. Table 50 presents the results of Adams's study. As in the presentation of the pollen data, I only indicate whether the taxa were present or absent at each site (see Table 50). Following Adams, the table is divided into domesticates, managed plants, and wild species (Volume 2, Table 94). Adams further divided the wild species into reproductive parts and vegetative parts. The reproductive parts represent the remains of the edible fruit or seeds of species exploited by humans, and the vegetative remains likely correspond to plant parts exploited for fuel or architectural purposes (Volume 2, Chapter 7).

The presence of cotton, beans, and maize provides tangible evidence for the use of domesticated species. Numerous taxa of wild resources testify to the utilization of readily available natural resources for food. Most of the archaeobotanical material representing wild species is from the limited-activity area (Site 41/583). This likely represents a preservation bias. The only feature found and consequently sampled at Site 41/583 was the *horno*. Certainly, the *horno* represented an excellent context for recovering charred remains. Further, the *horno* represents a cooking facility used many times, which may contribute to the diversity of species recovered. The limited number of carbonized wild resources at the habitation areas may reflect a less intensive use of these resources (see Table 50). Alternatively, it is possible that at some distance from the excavated dwellings, features analogous to the *horno* at Site 41/583, are present and simply were not part of the sample associated with the habitation sites. The pollen suggests that the inhabitants of the Vegas Ruin and the Crane site used wild-plant species in addition to domesticates (see Table 49).

Skeletal Evidence

The frequencies of dental caries, an oral pathology, for the burial population is "strongly suggestive" of a diet characterized by a substantial amount of processed carbohydrates (Volume 2, Chapter 9). Turner (1979:621) has defined caries as "any necrotic pit in enamel or dentine" of a specific size. The environmental and physiological processes responsible for caries are simple and familiar. Sticky or pasty carbohydrate-rich food with glucose and sucrose adheres to the teeth. If left untreated, the residue can form acids that decalcify the mineral portions of the teeth, leading to caries (Volume 2, Chapter 9). Highly processed domesticated foods such as maize and several wild species, including but not

Table 49. Summary of Pollen Data Representing Plants of Potential Economic Use

Taxon	Common Name	Site 41/583	Site 408/2015	Vegas Ruin (405/2012)		Crane Site (410/2017)	
		Soil Sample[a]	Soil Sample[a]	Soil Sample[a]	Wash[b]	Soil Sample[a]	Wash[b]
Domesticates							
Gossypium	cotton	—	X	—	—	—	—
Zea mays	maize, corn	X	X	X	X	X	X
Managed plants							
Agavaceae	agave	X	X	X	X	X	X
Wild resources							
Poaceae [Gramineae]	grass family	X	X	X	X	X	X
Fabaceae [Leguminosae]	pea family	—	X	X	X	X	X
Cereus	saguaro or hedgehog	—	—	X	X	X	—
Platyopuntia	prickly pear	X	X	X	X	X	X
Cylindropuntia	cholla	X	X	X	X	X	X
Ephedra	Mormon tea	X	X	X	X	X	—
Brassicaceae [Cruciferae]	mustard family	X	X	—	X	X	X
Polygonaceae	wild rhubarb	X	X	X	—	X	—
Tidestromia	tidestromia	—	—	—	X	—	—
Apiaceae [Umbelliferae]	parsley family	—	X	—	—	—	—
Cercidium	palo verde	—	—	—	X	—	X
Prosopis	mesquite	—	—	—	X	—	—
Salix	willow	—	—	—	X	—	—
Erodium	filaree or heron bill	—	X	X	X	X	—
Yucca	yucca	—	—	—	X	—	—
Larrea	creosote bush	—	—	—	X	—	X
Liguliflorae	dandelion type, sunflower family	X	X	X	X	X	X
Typha	cattail	—	X	—	X	—	X

Key: X = present in at least one sample.
[a] Data presented by Davis in Volume 2, Appendix D.2.
[b] Data presented by Davis in Volume 2, Appendix D.3.

Table 50. Carbonized Plant Remains from the CCP

Taxon	Common Name	Part	Site 41/583	Rock Jaw Site (407/2014)	Vegas Ruin (405/2012)	Crane Site (410/2017)
			Domesticates/likely managed plants			
Agavaceae type	agave	leaf base, and monocot (likely agave)	X	—	X	X
Gossypium type	cotton	seed	—	X	X	X
Hordeum pusillum type	little barley	caryopsis (grain)	X	—	—	—
Phaseolus	common bean	seed fragment	—	X	—	—
Zea mays	maize, corn	cupule, kernel fragment	—	—	X	X
			Wild resources: reproductive parts			
Group 1: Annual, often weedy plants						
Cheno-am [a]	cheno-am	seed	X	X	X	X
Descurainia type	tansy mustard	seed	X	—	—	—
Poaceae [Gramineae]?	grass family	caryopsis	X	X	—	—
Plantago type	wooly wheat	seed	X	—	—	—
Portulaca type	purslane	seed	X	—	—	—
Group 2: Perennial plants						
Arctostaphylos type	manzanita	seed	X	—	—	—
Astragalus? type	milk-vetch	seed	X	—	—	—
Echinocereus type	hedgehog	seed	X	X	X	X
Opuntia type	prickly pear	seed	—	—	X	—
Sphaeralcea type	mallow	seed	X	—	—	—
			Wild resources: vegetative parts			
Forestiera type	New Mexican privet	charcoal	—	—	X	—
Fraxinus type	ash	charcoal	—	—	X	—
Poaceae [Gramineae] type	grass	stem fragment	—	—	—	—
Juniperus type	juniper	charcoal	X	X	X	X
Larrea type	creosote bush	charcoal	X	X	X	X
Fabaceae [Leguminosae] type	legume family	spine, *Acacia* type?	—	—	X	—
Phragmites type	reed grass	stem fragment	—	X	X	—
Pinus type	pine	charcoal	—	—	X	—
Prosopis type	mesquite	charcoal	X	X	X	X
Quercus turbinella type	oak	charcoal	—	X	—	—
Simmondsia type	jojoba	charcoal	—	X	X	—

Note: Data from Volume 2, Chapter 7. Question marks indicate uncertainty whether a specimen represents an annual member of the taxon.
Key: X = present in at least one sample from the site.
[a] Cheno-am is used to designate burnt and degraded specimens that could represent either *Chenopodium* of the Chenopodiaceae or *Amaranthus* of the Amaranthaceae.

limited to agave, yucca, prickly pear seeds, mustard seeds, and cheno-ams, also are considered carbohydrate-rich foods (Volume 2, Chapter 9). Turner (1979) linked high rates of caries during the Middle to Late Jomon Periods in central Japan to a diet high in carbohydrates consistent with an agriculturally dependent subsistence economy. The occurrence of caries within the burial population of the CCP is consistent with other burial populations of similar agriculturally dependent groups in Tonto Basin (e.g., Volume 2, Chapter 9; Lincoln-Babb 2001).

Summary

The initial results of the pollen and archaeobotanical data suggest a subsistence strategy that likely involved a heavy reliance on cultigens such as maize and cotton (common beans and squash or gourds were also present but rare). Supplementing the diet were various wild-plant resources, such as weedy plants, cacti, agave, yucca, and jojoba (see Volume 2, Chapter 7; Tables 49 and 50). The recognition of agricultural dependence augmented by wild resources as a subsistence strategy is a consistent pattern among groups that inhabited Tonto Basin approximately 750–900 years ago (Adams and Welch 1994; Ciolek-Torrello and Whittlesey 1994; Elson 1992a; Fish 1995; Welch 1994). I provide these data only as a list of the wild and domesticated resources that were potentially used by the occupants of the CCP sites.

Nearly all of the wild and domesticated food resources required some level of processing. Specifically, the high-carbohydrate resources (maize, yucca, agave, prickly pear seeds, wild mustard seeds, and cheno-am seeds) require processing. The consumption of these and likely other carbohydrate-rich and processed foods by the inhabitants was reflected in the common occurrence of carious teeth within the burial population. The ceramic containers made by the prehistoric inhabitants of the CCP sites represent a diverse array of facilities that enabled the prehistoric groups to maximize their yields, detoxify foods and improve the flavor, and store surplus resources for future use.

Synthesis and Comparison

In this section, I synthesize the results presented above. I provide hypothetical ceramic-use behaviors for the two site types represented by the CCP sample—limited-activity/special-use sites and habitation sites. Next, I present a comparison of the CCP collection with a contemporaneous collection from the Phoenix Basin. Finally, I provide some concluding thoughts on the methods used and potential avenues for future research.

Limited-Activity/Special-Use Sites

The two limited-activity areas with analyzed ceramics in the CCP sample represent components of larger habitation sites (see above). The excavated features primarily represent cooking facilities. I assume that the ceramics and macrobotanical and pollen data recovered from these areas represent refuse generated by the activities carried out during the use of the excavated hearths, pits, and *horno*.

The presence of pollen from domesticated species suggests that some level of processing of these crops occurred at the limited-activity areas (see Table 49). The absence of the same domesticated species in macrobotanical samples for the limited-activity areas may reflect a sampling bias or might provide insights into the type and level of processing that occurred. The presence of maize and cotton pollen and the absence of charred seeds suggest that a preliminary stage of processing is represented, for example, the dehusking of maize soon after the harvest. Alternatively, perhaps the husks were used to wrap the food cooked (see Cushing 1920) in the hearth features associated with the limited-activity areas. In both cases, ceramic containers would be of little importance.

The pollen and archaeobotanical results reflect a diverse array of wild resources used at the limited-activity sites. In addition, the presence of agave and little barley provide evidence that managed-plant species were processed at some of these locales as well (see Tables 49 and 50). The ethnographic and ethnobotanical literature provides multiple examples of how native southwestern groups processed some of the annual and perennial herbs, cacti, and grasses recovered from the limited-activity areas. Many food-processing methods require heat with and without the use of ceramic containers (Castetter and Bell 1942, 1951; Curtin 1984; Nabhan 1985, 1989; Niethammer 1999).

Although the plant parts of the species recovered represent charred seeds and pollen, the ethnographic literature describes the utilization of the roots, leaves, and stems of many of the plants. For example, the Pima processed the roots of wild rhubarb for their high tannin content and used them for tanning hides, dyeing clothing, and making curative medicines. The seeds were ground and formed into flat dough cakes and baked in hot ashes. In the spring, the boiled or roasted young leaves of the wild rhubarb provided fresh greens (Curtin 1984). The seeds and leaves of cheno-am provided a vital food resource for the Piman groups (Castetter and Bell 1942; Curtin 1984; Nabhan 1985). The leaves were boiled in water and salt and then drained and fried in grease before being eaten (Curtin 1984). Cheno-am seeds were parched in baskets or ceramic vessels with live coals, then ground and added to maize and mesquite flour (Castetter and Bell 1942).

The diverse array of economic species represented at the limited-activity sites is consistent with their inferred function. Wegener and Klucas (Volume 1) have suggested that these loci represent plant-processing and cooking areas associated with the adjacent habitation areas. Although the sample is small, the functional determinations for the recovered ceramics were consistent with plant-processing activities. Table 46 presents the inferred function and size classes for the rim sherds recovered from the limited-activity areas. The presence of a small number of extra-large liquid-storage container rims suggests that the long-term storage of liquids (likely water) was necessary. The ethnographic model presented above showed that the bigger the liquid-storage vessel (mean volume of approximately 45.1 liters), the longer the liquid was stored, and the vessels were moved infrequently. The extra-large liquid-storage vessels with a known volume from this analysis (all of the TCAP vessels) generated a mean of 49 liters and ranged from 12 to 114 liters. The mean volume of 49 liters provides a useful volume estimate for the rim sherds representing liquid-storage vessels recovered from the limited-activity sites (see Table 46). Perhaps the vessels were a permanent fixture at the limited-activity areas and provided a ready supply of potable water used for drinking, for cooking, and for processing plant materials.

The other functional class represented by rim sherds at the limited-activity sites is food-preparation/cooking containers (see Table 46). All four size classes were recovered. Perhaps the variability in food-preparation/cooking container size corresponds to the potentially diverse array of cooking and processing activities that occurred in these areas. The ceramic containers would have provided important facilities for the inferred activities of cooking and food processing without heat (e.g., mixing, grinding, and mashing) at these areas. Although the sample is small, all of the size classes are represented (see Table 46). Taken with the archaeobotanical data (see Tables 49 and 50) and the presence of extramural cooking pits, it appears that the activities represented at these sites correspond to processing domestic plants (e.g., maize and cotton), agave, and wild plant resources (e.g., cacti, grass, and weedy plants).

Habitation Sites

Two of the three sites excavated during CCP (the Vegas Ruin and Crane site) provided excellent data sets for addressing the research questions. The recovery of hundreds of complete vessels and a large sample of rim sherds from the Vegas Ruin and Crane site provides ample evidence from which to infer the culinary activities associated with these occupations. The Rock Jaw site represents a less intense and more abbreviated occupation. The functional categories at the Rock Jaw site are represented only by a relatively small sample of rim sherds. Therefore, the discussion presented below relies more heavily on the data from the Vegas Ruin and the Crane site. Although I present the summary tables by site, the discussion pertains to ceramic-use behaviors as inferred from the collective data set. I assume that the activities and ceramic-use behaviors discussed below occurred at all three sites during their respective occupations.

I organized the synthesis below into the three broad behavioral categories that structured the ethnographic model above: storage, processing, and transfer/transport. Using the model, I refine and suggest alternative uses for the inferred functional categories presented above. I also present hypothetical culinary use behaviors based on the ceramic functional categories and the independent data sets presented above (pollen, archaeobotanical, and skeletal).

Storage

Secure and reliable storage facilities for food and other products are a critical component of most subsistence systems. Ceramic containers provide the technology for storing potable drinking water, grains for consumption and planting, and oils and syrups used for cooking and eating; they are also an ideal container for fermenting beverages. A multitude of factors coalesce when determining a container's suitability for storage. The primary variables are morphological—size and shape. Examining these variables in light of the ethnographic model provides insights into the potential uses and contents of a vessel. Below, I divide the storage function into subcategories corresponding to duration and/or contents.

Short-Term Liquid Storage

Table 51 presents the inferred function by size class and site for those vessels and rims that meet the criteria for storage. Almost all of the vessels and rims within the CCP sample with formal attributes or functional ratios consistent with a storage function correspond to liquid-storage containers. It is possible that the smallest liquid storage vessels actually represent personal or drinking vessels, instead of vessels used for culinary functions.

Vessel volume showed a correlation with duration of time that the contents were stored (see above), although there is tremendous range of variability with considerable overlap between short-and long-term storage vessels. Studies of ethnographic vessels (Henrickson and McDonald 1983:633), however, show that, for the most part, smaller vessels tend to be used for short-term storage of liquids, whereas larger vessels tend to be used for long-term storage. Ethnographic vessels used for short-term storage exhibited a range of volumes from 0.3 liters to 20.6 liters, with a mean of 11.9 liters (Henrickson and McDonald 1983). It is possible, then, to conclude that the vessels corresponding to the small-, medium-, and perhaps the large-size classes in the ethnographic study likely represent containers suitable for short-term liquid storage,

Table 51. Rim Sherds and Vessels Suited for Storage from CCP Sites

Inferred Function, by Site	Size Class								Total	
	Small		Medium		Large		Extra Large			
	n	%	n	%	n	%	n	%	n	%
Rock Jaw site (407/2014)[a]										
Liquid carrier/liquid storage	—	—	—	—	—	—	1	33.3	1	33.3
Liquid storage	—	—	—	—	—	—	2	66.7	2	66.7
Subtotal, Rock Jaw	—	—	—	—	—	—	3	100	3	100
Vegas Ruin (405/2012)[b]										
Liquid carrier/liquid storage	1	5.3	5	15.6	6	15.8	11	17.7	23	15.2
Liquid storage	17	89.5	27	84.4	32	84.2	51	82.3	127	84.1
Dry storage/liquid storage	1	5.3	—	—	—	—	—	—	1	0.7
Subtotal, Vegas Ruin	19	100	32	100	38	100	62	100	151	100
Crane site (410/2017)[b]										
Liquid carrier/liquid storage	—	—	1	11.1	1	6.3	3	20.0	5	11.4
Liquid storage	4	100	7	77.8	15	93.8	12	80.0	38	86.4
Dry storage/liquid storage	—	—	1	11.1	—	—	—	—	1	2.3
Total	4	100	9	100	16	100	15	100	44	100
Total	23	11.6	41	20.7	54	27.3	80	40.4	198	100

[a] Represented by rim-sherd data only.
[b] Represented by both rim-sherd and vessel data.

whereas the extra-large vessels were probably used primarily for longer term storage (Figures 50a–g and 51). This of course assumes that frequent retrieval of contents and mobility of the full containers represented important factors. A total of 118 vessels and rims in Table 51 were in the small-, medium-, and large-size classes defined for the CCP collection. Five (1 small- and 4 medium-sized vessels) of the 118 had strap handles, suggesting that the contents of the vessels were poured as a means of retrieval. It should be noted that strap handles could also have been used to hang the vessels. Using the volumes generated for the whole vessels with an inferred function of liquid storage, I provide an approximate mean vessel volume for the small-, medium-, and large-size classes. The containers associated with the small-size class exhibit a mean volume of approximately 0.5 liters (n = 10). The medium-sized vessels possessed a mean volume of approximately 1.2 liters (n = 25). The large vessels generated a mean volume of approximately 5 liters (n = 6). Combined, the mean volume of the CCP's small, medium-sized, and large liquid-storage containers is approximately 1.6 liters (n = 41).

The presence of small, medium-sized, and large containers suitable for short-term liquid storage at the habitation sites reflects the types of activities associated with the occupation. Certainly, the daily activities of preparing meals required a ready supply of water and other liquids. The containers consistent with the morphological variables presented above likely served precisely these culinary functions.

Long-Term Liquid Storage

The ethnographic examples of long-term liquid-storage vessels examined by Henrickson and McDonald (1983) generated a range of 1 to 198 liters, with a mean of 45.1 liters (see previous discussion). The complete vessels in the extra-large-size class (n = 9 [all were TCAP vessels]) from this study provide a statistical summary for the volumetric data. The vessels ranged from 12 liters to 114 liters and contained an average volume of 49.1 liters. Table 51 shows the frequency of extra-large vessels that met the sampling requirements. In an environment like Tonto Basin, the ability to procure and have potable water continuously available is an important and basic necessity. These extra-large liquid-storage vessels likely served this function at the habitation areas (see Figure 50h and i).

Dry Storage

Notably absent in Table 51 are any vessels consistent with the dry-storage function as defined by the ethnographic ratios. Several factors may be responsible for the absence of these vessels. First, only six ethnographic examples (five from Yuman groups and one from Tohono O'odham) were used to derive the functional ratios of dry-storage vessels. Second, as pointed out above, often, vessels intended for one purpose can be used for another, if appropriate provisions are made. For example, the fashioning of a tight-fitting lid would render most containers suitable for dry storage.

Another possible factor contributing to the lack of vessels corresponding to dry storage may relate to the presence

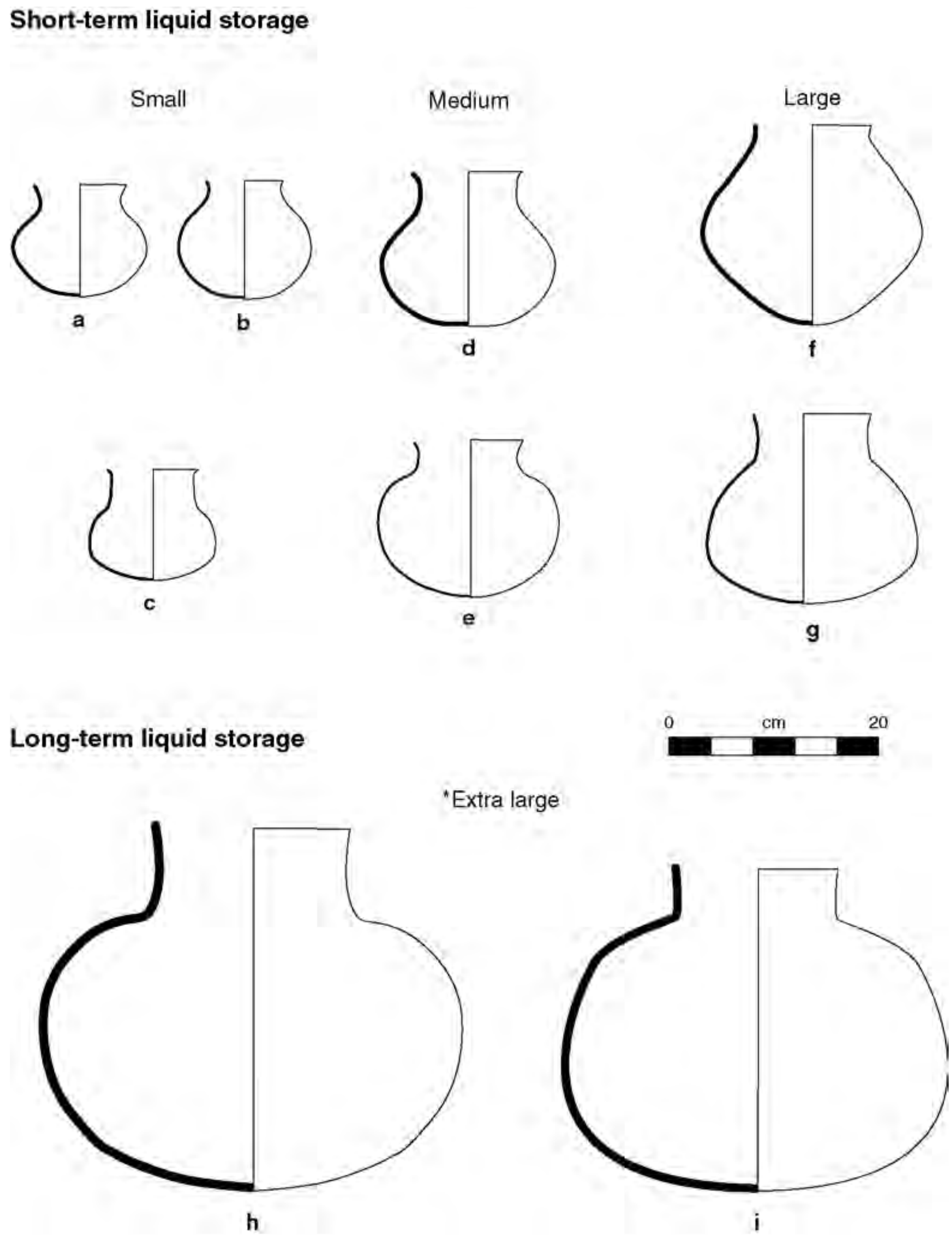


Figure 50. Examples of liquid storage vessels: (*a–g*) from CCP collections; (*h*) from Vint (2000c:Figure 4.4); (*i*) from Vint (2000c:Figure 4.4v). (Author's note: The extra-large liquid storage containers are represented only be rim sherds in the CCP collections [see text].)

Figure 51. Examples of liquid-storage vessels: (*a, b*) red plain (smudged interior); (*c*) Roosevelt Black-on-white; (*d*) Reserve Black-on-white.

of other facilities that served this function. Vint's TCAP data generated few containers that corresponded to a dry-storage function. Vint (2000b) argued that the presence of granaries at several of the TCAP sites provided ample dry storage and lessened the need for ceramic containers for the same purpose.

The statistical summary for the ratios calculated from the 64 jars (this includes 14 TCAP vessels) provided a height-to-breadth ratio with a range of 0.63–1.13 and a mean of 0.88. Clearly, most of the CCP and TCAP jars were slightly wider then they were tall, and few vessels were taller then they are wide. Further, comparing the aperture-to-breadth ratios that ranged from 0.27 to 0.63, with a mean of 0.47, to the ethnographic vessels reveals a group of much less restricted vessels. Therefore, the archaeological sample corresponds to vessels with relatively open orifices. This makes the vessel less ideal for dry-storage purposes as the wider orifice allows moisture, mold, and pests to invade the container's contents. However, the orifice could be sealed with a lid of bound cloth and clay or a bowl placed in an inverted or upright position over the orifice. This simple provision would make most of the vessels that corresponded metrically to liquid-storage vessels also suitable for dry storage.

A cursory review of the charred archaeobotanical remains from the CCP sites provide ample evidence for the dry-storage needs of the inhabitants (see Table 50). Certainly, the Tonto Basin inhabitants possessed other facilities in the form of perishable baskets suitable for dry storage, although limited evidence of these facilities was recovered. Two granaries found at the Crane site (see Volume 1) correspond morphologically and perhaps functionally to those found in association with some of the TCAP habitation sites (Clark and Huckell 2000; Clark and Vint, eds. 2000a). To argue that the absence of archaeological vessels in the CCP collection corresponding to ethnographic dry-storage vessels means that ceramic containers were not used for dry storage is a bit shortsighted.

In the context of the CCP sites, the need for dry storage would be greatest at the habitation sites. The storage of surplus perishable goods such as seed crops (e.g., maize and beans) and the stabilized fruits (e.g., cholla buds) and seeds from wild resources (e.g., hedgehog cactus) was critical to the subsistence practices of the inhabitants (see Volume 2, Chapter 7). Certainly, most of the vessels represented in Table 51 were suitable to function as dry-storage vessels.

Processing

Ceramic containers provide an excellent medium for processing materials. Processing represents a diverse array of activities performed every day during the preparation and cooking of meals. I have divided processing into two categories that have use-alterations associations—with and without heat. Table 52 provides a breakdown of the containers suitable for processing from the CCP sample.

Processing without Heat

Processing without heat involves activities such as mixing, pressing, soaking, drying, and rinsing. Mixing ingredients and pressing seeds for oils may result in use alterations directly observable on the interior and exterior surfaces

Table 52. Rim Sherds and Vessels Suitable for Processing from CCP Habitation Sites

Inferred Function, by Site	Size Class								Total	
	Small		Medium		Large		Extra Large			
	n	%	n	%	n	%	n	%	n	%
Rock Jaw Site (407/2014)[a]										
Cooking	—	—	1	50.0	—	—	—	—	1	10.0
Food preparation/cooking	—	—	1	50.0	4	100	5	100	10	90.0
Subtotal, Rock Jaw site	—	—	2	100	4	100	5	100	11	100
Vegas Ruin (405/2012)										
Cooking	7	22.6	6	7.1	4	3.0	—	—	17	5.2
Food preparation/serving/eating	3	9.7	30	35.7	70	53.0	41	51.3	144	44.0
Food preparation/cooking	21	67.7	48	57.1	58	43.9	39	48.8	166	50.8
Subtotal, Vegas Ruin	31	100	84	100	132	100	80	100	327	100
Crane Site (410/2017)										
Cooking	4	36.4	1	4.3	2	4.8	1	2.9	8	7.3
Food preparation/serving/eating	—	—	3	13.0	14	33.3	11	32.4	28	25.5
Food preparation/cooking	7	63.6	19	82.6	26	61.9	22	64.7	74	67.3
Subtotal, Crane site	11	100	23	100	42	100	34	100	110	100
Total	42	9.4	109	24.3	178	39.7	119	26.6	448	100

[a] Represented by rim-sherd data only.

of vessels. In an effort to refine the inferred functional categories, I examined the complete vessels for use-wear patterns. I excluded the rim sherds, because it is not possible to make observations on basal use wear. To examine these use-wear patterns, I excluded the inferred-function category of cooking and used only the two categories of food preparation/cooking and food preparation/serving/eating (n = 125 vessels). I further limited the vessels to those that did not exhibit any evidence of sooting (n = 94). Of the 94 vessels (89 from the Vegas Ruin and 5 from the Crane site), 64.6 percent exhibited minimal to extensive abrasive use wear on the interior base and/or sidewalls and exterior base of the container. Exterior basal abrasion without interior abrasion was noted on 29.2 percent of the containers. Finally, 3.1 percent exhibited abrasion only on the interior sidewalls and base, whereas 3.1 percent exhibited no abrasive use wear on any surface. Figure 52 provides some selected examples of vessels potentially used for processing without heat.

The results suggest that the processing techniques used by the occupants of the CCP sites often involved utensils that abraded and marred the interior of the containers. Perhaps some of these processes involved the crushing and pressing of seeds into oil or mixing ingredients

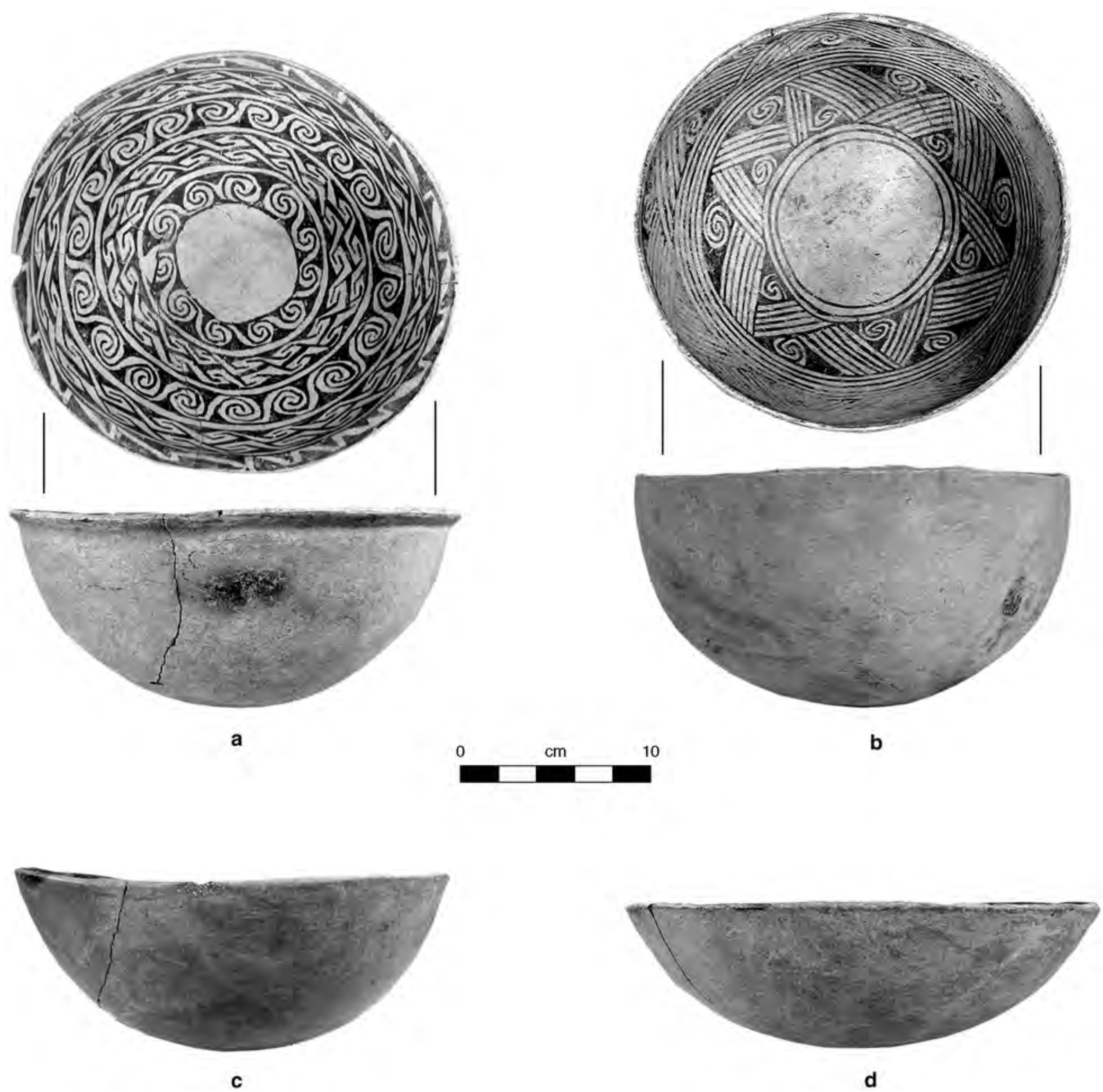


Figure 52. Examples of food preparation, serving, and eating vessels: (*a*, *b*) Walnut (Style B) Black-on-white; (*c*, *d*) red plain, smudged interior.

while preparing a meal. The vessels with only exterior basal abrasion (29.2 percent) perhaps reflect the mixing, washing, and preparation of the vessel contents by hand. Alternatively, the exterior basal abrasion may indicate that these vessels were eaten from but not used for food processing. The observed abrasion likely resulted from rotating and dragging the vessel across the ground surface while full or applying pressure. In either case, the use-wear abrasions provided independent evidence supporting the use of these vessels to process materials.

Processing with Heat

Unlike processing without heat, processing with heat leaves unequivocal evidence that the container was used in association with fire. The presence of sooting (carbon deposits) and its location on a container provide direct evidence of cooking. I recorded the presence and location of soot for the CCP whole and reconstructible vessels. Table 53 presents the vessels that exhibited soot on the exterior surfaces. The direct evidence of use in association with fire crosscuts the functions assigned to the vessels using the ethnographic ratios. The location of soot on the vessels consistently occurred on the sidewalls with no soot accumulations observed on the bases (86.9 percent). The remaining eight (all from the Vegas Ruin) vessels with soot accumulations on the exterior base and sidewalls come from the single functional category of food preparation/serving/eating (see Table 53). The presence and location of soot on the ceramic containers suggests the primary mode of cooking involved placing the vessels in the fire.

The presence of soot on the exterior base and sidewalls of vessels suggests they were used in association with fire (Figures 53 and 54). The presence of soot on the "liquid-storage" containers suggests that these vessels may also have been used for cooking liquid or nonliquid ingredients. The liquid-storage vessels illustrated in Figure 53e and f exhibit morphological characteristics consistent with cooking vessels defined for ethnographic groups not used in this study to generate the functional ratios (see Rice 1987:Figure 7.14). Figure 53p illustrates a potential example of container reuse. The original container (a liquid-storage jar) broke. A section of the original container from the rim to near the base was roughly chipped into an oval shape. Based on the location of soot along the entire margin of what used to be the sidewall of the original container (now the base), I suggest that this container was reused as a frying or toasting vessel.

In the context of the CCP collection, it appears as though a full complement of vessels suitable to various cooking methods is present (see Table 53; Figure 53). The habitation sites exhibited the greatest variability in size and form (see Table 52). The presence of use wear consistent with processing and the presence of soot on containers in conjunction with the formal characteristics discussed above provides ample evidence that the inhabitants used ceramic containers in ingredient preparation and cooking. Below, I discuss ethnographic accounts of food processing focused on some of the species recovered from the CCP sites. I present these techniques as potential (hypothetical) methods used by the inhabitants of the CCP area.

Food Processing and Ceramic Containers

Ceramic containers provided an excellent medium for rendering fats and oils from the bones of rabbits and the occasional deer that supplied a critical source of protein. The presence of caries in the mortuary population of the

Table 53. Vessels Exhibiting Evidence of Use with Fire at CCP Habitation Sites

Inferred Function, by Site	Size Class								Total	
	Small		Medium		Large		Extra Large			
	n	%	n	%	n	%	n	%	n	%
Vegas Ruin (405/2012)										
Cooking	3	21.4	3	13.6	1	10.0	—	—	7	13.7
Food preparation/serving/eating	—	—	3	13.6	6	60.0	5	100	14	27.5
Food preparation/cooking	3	21.4	6	27.3	2	20.0	—	—	11	21.6
Liquid storage	8	57.1	10	45.5	1	10.0	—	—	19	37.3
Subtotal, Vegas Ruin	14	100	22	100	10	100	5	100	51	100
Crane Site (410/2017)										
Cooking	1	100	—	—	1	33.3	—	—	2	20.0
Food preparation/serving/eating	—	—	—	—	1	33.3	—	—	1	10.0
Food preparation/cooking	—	—	4	66.7	—	—	—	—	4	40.0
Liquid storage	—	—	1	16.7	1	33.3	—	—	2	20.0
Liquid carriers	—	—	1	16.7	—	—	—	—	1	10.0
Subtotal, Crane site	1	100	6	100	3	100	—	—	10	100
CCP Project total	15	24.6	28	45.9	13	21.3	5	8.2	61	100

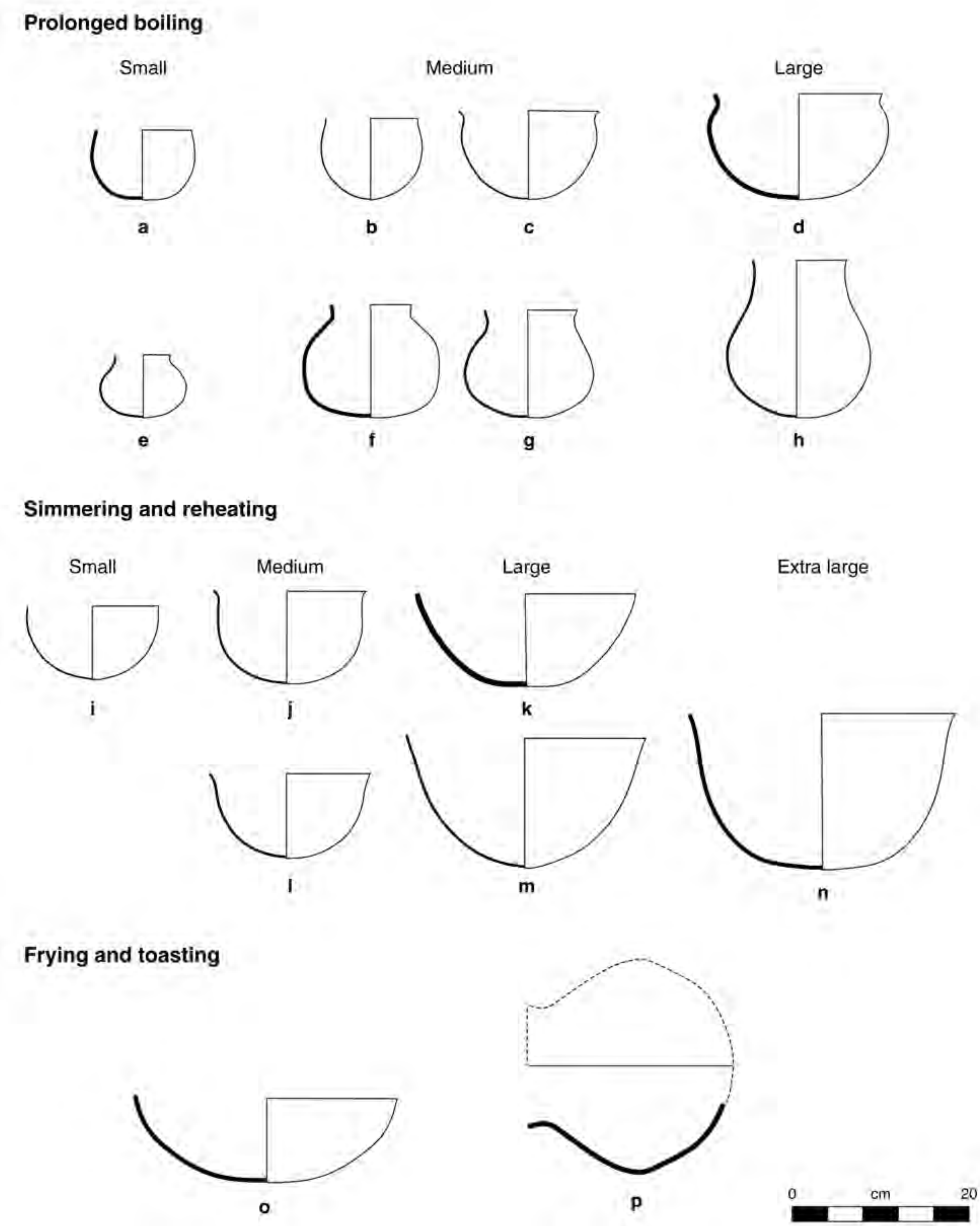


Figure 53. Examples of CCP vessels that exhibited sooting and suitability for processing functions with heat. Their inferred functions are as follows: (*a–d*) cooking; (*e–h*, *p*) liquid storage; (*i*, *k*) food preparations/cooking; (*l–o*) food preparations/serving/eating.

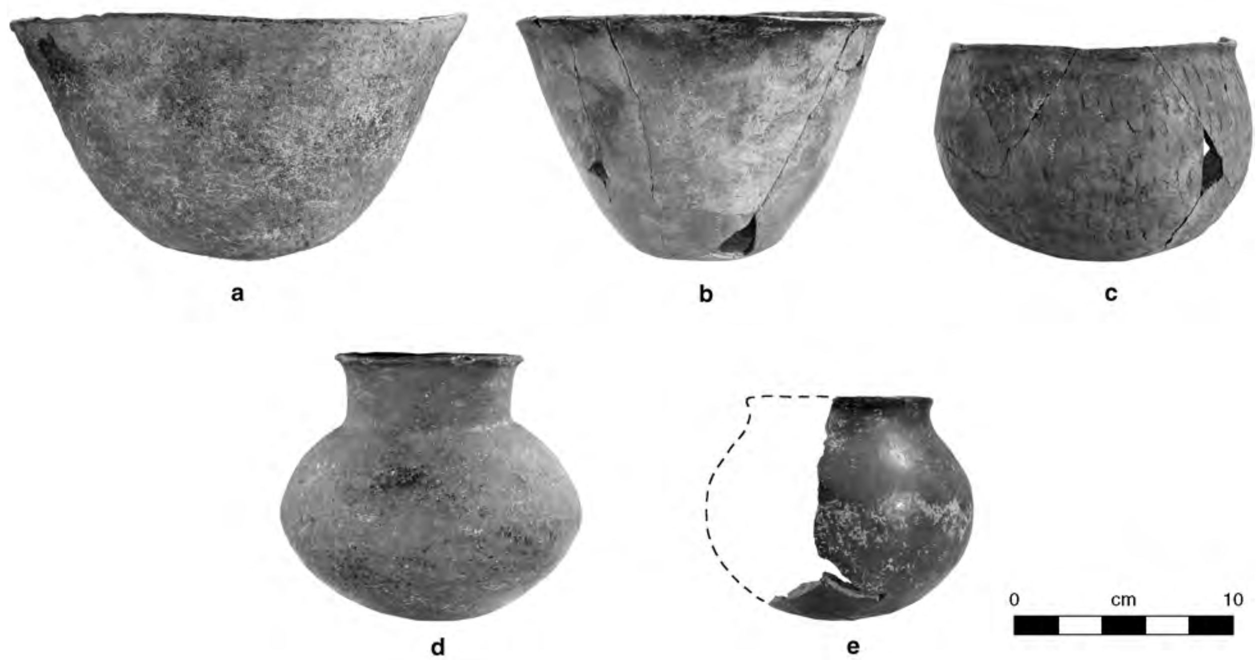


Figure 54. Examples of vessels that exhibited sooting on exterior surfaces: (*a*) Salado Red Corrugated (food preparations, serving, and eating); (*b*) red plain, smudged interior (food preparation, serving, and eating); (*c*) Salado Red Corrugated (cooking); (*d–e*) red plain, smudged interior (liquid storage).

CCP, however, provided compelling evidence that highly processed, carbohydrate-rich foods represented a large component of the inhabitants' diet (see Volume 2, Chapter 9). Tables 49 and 50 provide a list of plant-food resources that are carbohydrate rich and require some level of processing. The level of dependence on particular species and the representativeness of the recovered species of the array of plant resources used by the inhabitants is unclear. The pollen and archaeobotanical samples, however, provide a minimal sample of the exploited plants.

The literature is replete with a variety of traditional processing techniques used for maize (Beck 2001; Castetter and Bell 1942; Cushing 1920; Katz et al. 1974; Kavena 1980; Niethammer 1999; Russell 1975; Snow 1990). Boiling, roasting, and drying provide some limited examples of traditional methods of maize preparation. Dried maize is often added to stews as whole kernels or a ground powder. Maize provided the primary ingredient for myriad breads, dumplings, tamales, and tortillas.

The use of ceramic containers enhanced the versatility and nutritional value of maize as a food product. Alkali processing of maize measurably increases its nutritional value (Katz et al. 1974; Snow 1990). Katz et al. (1974) described the use of lime or wood or plant ashes added to water that created a basic or alkaline solution. The solution was boiled with dried maize kernels to remove the hulls (outer seed coating) resulting in hominy, or "skinned corn" as Cushing (1920:292) referred to it. Next, the maize received a thorough washing and was again boiled. Cushing (1920) noted that for the Zuni this method of maize processing was the first step in the preparation of a variety of breads, dumplings, and griddle cakes. Cushing went on to describe a dizzying array of recipes and uses for the processed or "skinned corn." He even described the use of two ceramic containers, one set inside the other and partially filled with water, to create a "steam oven" to cook dumplings (Cushing 1920:299–300). If the occupants of the small compounds (the Vegas Ruin and Crane site) were dependent on maize as a staple, then alkali processing would dramatically increase the nutritive value, making it a better food product (see Snow 1990).

Beans represented a staple crop prehistorically, making up one third of the culinary triumvirate—maize, beans, and squash (Kaplan 1956). Beans require extended soaking in ceramic containers to hydrate the seeds (Castetter and Bell 1942:198). The versatile seed was prepared in a variety of ways. Most ethnographic accounts describe bean stews, wherein bits of meat, maize dumplings, and various other ingredients are boiled and simmered to a homogenous consistency (Castetter and Bell 1942; Cushing 1920). Cushing (1920:561) described a Zuni method in which the beans (pods and all) were subjected to prolonged boiling until soft and then eaten "like asparagus."

Although cotton is often viewed as a nonsubsistence crop by archaeologists, the ethnographic record reflects use of cottonseed as a valued food source. Castetter and Bell

(1942:198) described the method of processing the seed used by the Pima and Tohono O'odham. The seeds were placed in an olla with embers on top, which was shaken until the live coals parched the seeds. The parched seeds were eaten or added to cornmeal or mesquite-pod flour and made into tortillas.

The few food-processing techniques described above provide limited examples and likely represent only a small fraction of the potential food-processing techniques practiced by the inhabitants of the CCP area. The processing of wild-food resources required similar and varied processing. Like other aboriginal groups, including those living and those lost to time, the inhabitants of the CCP used ceramic containers to enhance the taste and nutritive value and perhaps even to detoxify food resources.

Transport/Transfer

Transporting or transferring materials to the dinner "table" or from the water source represent daily activities usually accomplished with ceramic containers. In the absence of any supporting data and recognizing that other containers are more suitable for the long-distance transport of at least dry materials, I consider water fetching to represent the most logical "long-distance" transference of materials undertaken by the inhabitants of the CCP sites. Below I divide the transport/transfer category into two parts, involving distance (short and long distance).

Long-Distance Transport/Transfer

Presumably, Tonto Creek provided an adequate water source prehistorically. The location of the CCP sites relative to Tonto Creek (less than 1 km) places few environmental limitations on the containers suitable for transporting water. It is therefore possible that sealed baskets, skins, or other perishable containers provided suitable vessels for transporting water the short distance back to the occupation areas. The ceramic containers that correspond to the ethnographic ratios for liquid carriers are listed in Table 54 (Figures 55a–d and 56). When full of water, all seven of the vessels would fall comfortably within the 18–35-pound weight range suggested by Rice (1987). In addition to those classified as liquid carriers, the vessels corresponding to liquid storage in the small-, medium-, and large-size classes (see Table 46) are also suited to carrying water. Although it is physically possible to carry much heavier loads than 35 pounds (such as head-supported loads; see Bastien et al. 2005), the maximum weight would have ultimately been limited by the structural integrity of vessel, the method of transporting the vessel, and the distance to the nearest water source. Perhaps the proximity of the water source in this case (assuming it is Tonto Creek) placed few restrictions on the formal attributes, making containers suitable for the water-fetching task that surely occupied a portion of each day. If ceramic containers facilitated this task, the CCP habitation sites (the Vegas Ruin and Crane site) were well equipped (see Tables 46 and 54).

Short-Distance Transport/Transfer

Few vessels with formal characteristics that imply a specific use were recovered from the CCP excavations. Table 54 lists three scoops and one ladle. The distinguishing characteristics of a scoop correspond to an oval (in plan) and squat (in profile) vessel that is relatively small and would easily fit through the opening of storage containers (see Figure 55e). Presumably, scoops were used to retrieve and transfer material stored in larger containers. Ladles presumably served a similar function, yet are distinguished by the presence of an elongated handle essentially resembling an oversized spoon (see Figure 55f). Scoops may have been used to retrieve dry materials, whereas ladles were probably used to retrieve liquids. Interestingly, the only examples of these types of containers come from the sample of whole and reconstructible vessels. No sherds were classified as scoops or ladles. This could result from the difficulty in identifying the distinguishing characteristics of these vessels in sherd form. For example, a scoop- or ladle-rim fragment might

Table 54. Vessels Suited for Transporting/Transferring Materials from CCP Habitation Sites

Inferred Function, by Site	No Size Class	Size Class				Total
		Small	Medium	Large	Extra Large	
Vegas Ruin (405/2012)						
Liquid carrier	—	1	3	1	—	5
Dry storage/liquid carrier	—	—	1	—	—	1
Ladle	—	1	—	—	—	1
Scoop	3	—	—	—	—	3
Subtotal, Vegas Ruin	3	2	4	1	—	10
Crane Site (410/2017)						
Liquid carrier	—	1	1	—	—	2
Subtotal, Crane site	—	1	1	—	—	2
Total	3	3	5	1	—	12

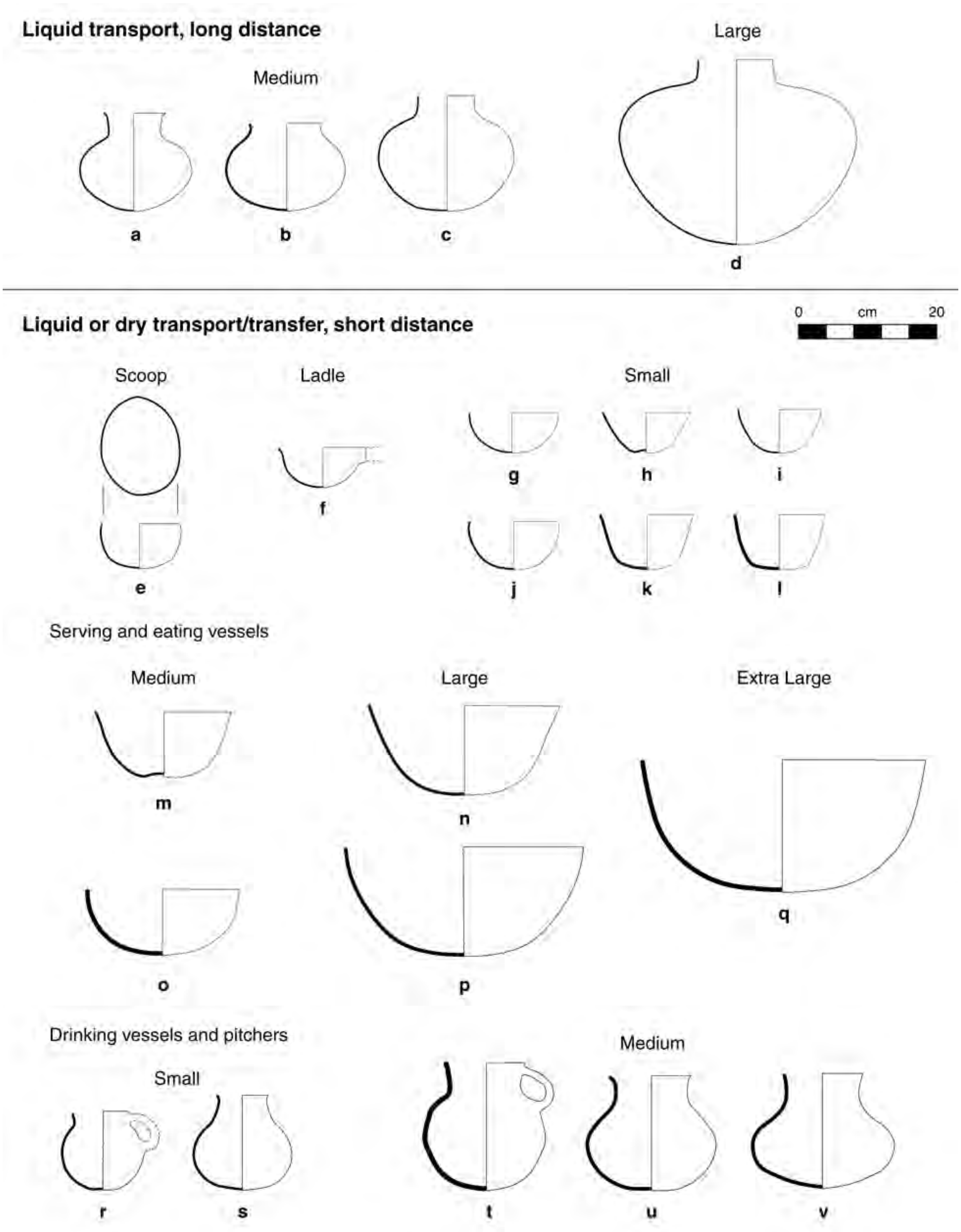


Figure 55. Examples of CCP vessels suited for transport/transfer function with the following inferred functions: (*a–d*) liquid carriers; (*e*) scoop; (*f*) ladle; (*h–l*) food preparation/cooking; (*g, m–q*) food preparation/serving/eating; (*r–v*) liquid storage.

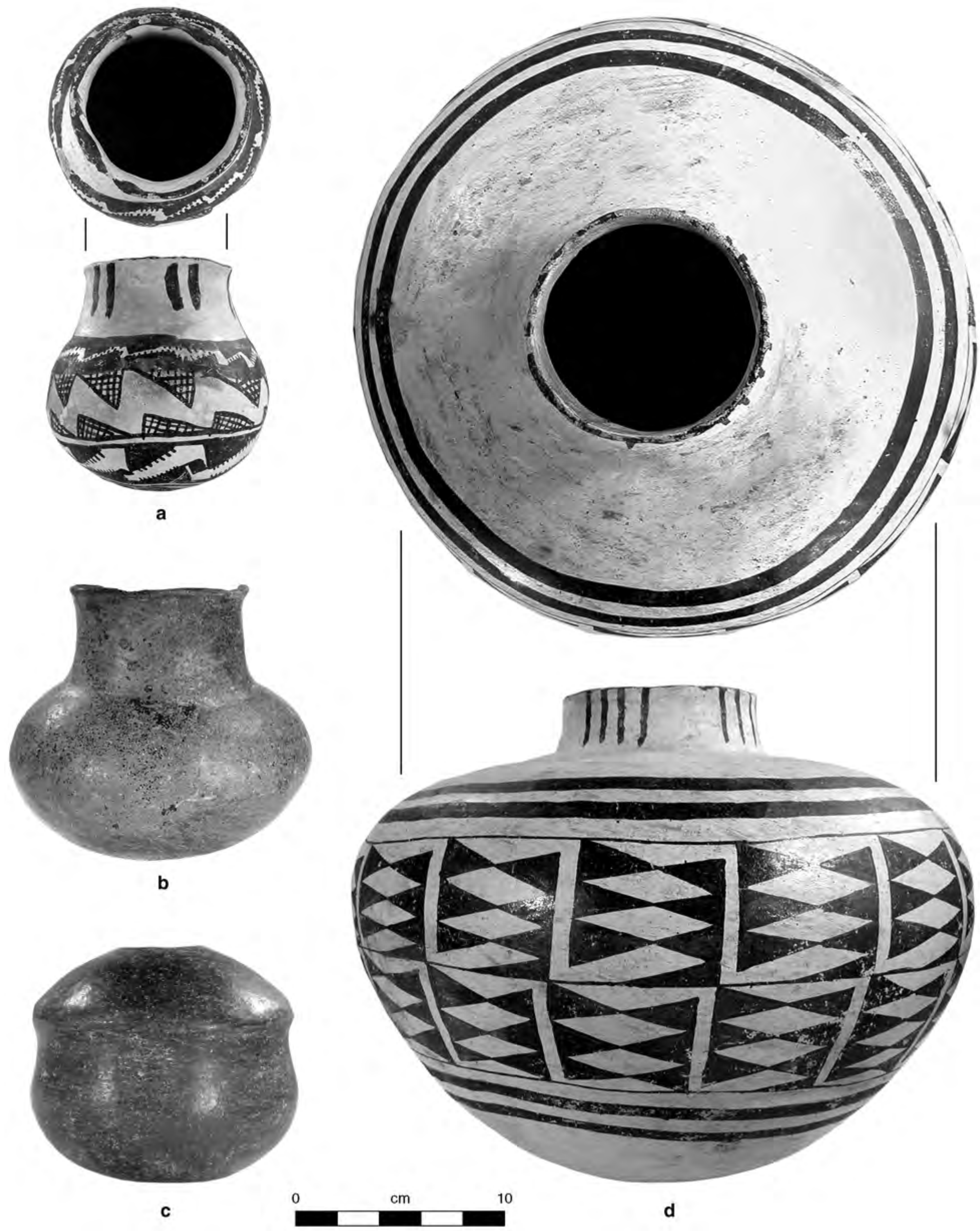


Figure 56. Examples of vessels suited for liquid-transfer/liquid-transport function; (*a*) Roosevelt Black-on-white (liquid storage); (*b*) red plain, smudged interior (liquid storage); (*c*) red plain, smudged interior (liquid carrier); (*d*) Snowflake Black-on-white (liquid carrier).

be classified as a bowl, if the curvature representative of an oval is not noticed or if there is no discernable evidence that a handle was attached. Nonetheless, these vessel forms are rare in the CCP collection.

It is likely that the unrestricted vessels that corresponded to the functional ratios consistent with food preparation/serving/eating and food preparation/cooking in the small-size-class category provided suitable containers for scooping and ladling (see Figure 55g–l). In fact, six of the whole and reconstructible vessels (small-size class) in the food-preparation/serving/eating and food-preparation/cooking functional categories exhibited use wear consistent with scooping (see Figure 55g–l). The use wear consisted of interior abrasions along the sidewalls near the rim. Perhaps this wear resulted from scraping the bottom or sidewalls of a storage container.

Smith (1985:Table 11.2) suggested that the containers suitable for serving food and eating from exhibit an unrestricted orifice that makes the contents readily visible and accessible. As a class of vessel, containers meeting these criteria are most abundant in the CCP collection from habitation sites. All of the sherds and vessels corresponding to the food-preparation/serving/eating and food-preparation/cooking categories (all size classes) meet the criteria (see Table 52). Consistent with the sites' functional interpretations, most of the containers suited for serving and eating were present at the habitation sites (see Table 52). Presumably, the limited-activity sites represent areas where food was prepared and not consumed, and the habitation sites represent areas where daily meals were prepared and eaten.

Finally, the suitability of ceramic containers for drinking and pouring liquids represents the last short-distance transference function for consideration. Smith (1985:Table 11.2) discussed the formal attributes that correspond with this function. Smith noted that spouts or handles enhance the performance and ease of pouring liquids (see Figure 55r and t). Further, containers used for short-distance transference of liquids usually correspond to small-volume vessels (see Figure 56). Smith provides no volumetric parameters, however. I suggest that the small and medium-sized liquid-storage vessels (see Table 51) with an average volume of 0.5 and 1.2 liters, respectively, and the small and medium-sized liquid carriers (see Table 54) with an average volume of 0.6–1.6 liters, respectively, represent containers most suitable in form and size for short-distance liquid transference (see Figure 55r–v). Although no spouts were identified in the CCP collection, 5 of the 42 whole or reconstructible vessels meeting the above criteria exhibited strap handles. The presence of handles suggests that the contents of the containers were meant to be poured as a means of retrieval. The ceramic vessels and rim sherds that exhibited attributes conducive to short-distance transport likely represent vessels used for drinking and serving beverages during meals and throughout the day (see Tables 51 and 53; Figure 55r–v).

Synthesis and Comparison Summary

The collection of rim sherds and vessels from the CCP habitation sites reflected a diverse array of culinary behaviors. Conversely, the limited-activity areas revealed a limited range of functional variation. The primary reason for the difference is that, by definition, only a small range of activities occurred at the limited-activity sites. Formation processes provide another contributing factor. The investigated limited-activity sites are components of larger habitation sites. Therefore, the discard of refuse associated with the activities may have occurred in the designated midden areas that were not sampled in data recovery. By contrast, the sampling or complete excavation of nearly all types of contexts and deposits at the two excavated habitation sites resulted in a reasonably representative sample of secondary and de facto refuse generated by the activities associated with those occupations.

The presence of dental caries in the mortuary population provided direct evidence that highly processed carbohydrate-rich plants were a major component of the diet. The diverse collection of ceramic containers suited to storing and processing carbohydrate-rich crops, such as maize and beans, represents an ideal tool for an agrarian economy. The containers and container fragments recovered during the CCP represent durable vestiges of the inhabitants' subsistence economy.

Comparison with the Phoenix Basin Collection

In this section, I present a comparison of the CCP collection from the two habitation sites—the Vegas Ruin and Crane site—with a collection of whole and reconstructed vessels from six Phoenix Basin sites recorded and reported by Patricia Crown (1983). Two questions governed the goals of the comparison. First, does the Phoenix Basin collection reflect similar or different functional variability? Second, do functionally equivalent containers from the two collections exhibit formal variability? I begin with a brief introduction to the Phoenix Basin collection.

Crown (1983:Table I.2.3) analyzed 603 vessels from the Classic period (ca. A.D. 1150–1450) Phoenix Basin sites of Los Muertos (n = 497), Las Acequias (n = 3), Sonoqui Pueblo (n = 28), Sonoqui Well (n = 6), Germann Ruin (n = 4), and Las Cenizas (n = 65). For the purposes of this comparison, I used the data from the bowl (n = 272) and jar (n = 179) formal categories that were assigned a function (Crown 1983:182–194). The Phoenix Basin collection had numerous vessels classified as scoops. Although this formal/functional category was represented in the CCP collection, it contained only 2 vessels, thus limiting any meaningful comparison. The absence of scoops in any appreciable numbers in the CCP collection did provide the first distinguishing factor between the two collections (see below).

Crown used the same functional ratios and similar use-wear observations to assign vessel function. Table 55 presents the recovery contexts for the two collections. All of the vessels in the Phoenix Basin collection represent de facto refuse from either a burial context (i.e., cremation or inhumation) or a house floor (i.e., domestic). This is also true of the CCP collection; however, most of the vessels from "domestic" contexts come from pits, with the exception of two from floor contexts. The fact that Crown used similar methods to assign vessel function, the relative contemporaneity of the collection with the CCP collection, and the similarity in recovery contexts make the Phoenix Basin collection ideal for comparison with the CCP collection.

Comparison Results

The first significant difference between the two collections was apparent in the contexts represented. Most (65.2 percent) of vessels from the Phoenix Basin collection were associated with cremation burials. This type of mortuary treatment did not occur in the CCP sample. Researchers often view profound differences in mortuary practice as potentially signaling a difference in ethnicity (Jones 1997).

Comparing the bowl-to-jar ratios from the three contexts represented by the Phoenix Basin collection reveals some differences. A ratio of 1.16:1 (bowls to jars) from cremation contexts stands in sharp contrast to a ratio of 2.8:1 from inhumations and a ratio of 2.4:1 from the domestic contexts. These ratios would suggest that jar forms were overrepresented in cremation contexts. The inhumation contexts from the CCP generated a ratio of 2.4:1, which is comparable to the 2.8:1 ratio calculated for the Phoenix Basin collection from inhumation burials. Ideally, these ratios should be evaluated against bowl-to-jar ratios that are representative from the respective sites as a whole. Unfortunately, this is not possible with the Phoenix Basin collection, and the 2.4:1 ratio from the domestic context provides the only available measure of bowls to jars in domestic contexts. The bowl-to-jar ratio for the CCP when using the rim sherds and vessels from all nonmortuary contexts was 2.6:1. This is comparable to the ratio of 2.4:1 generated for the inhumations. Using rim sherds from secondary refuse to provide a "representative" bowl-to-jar ratio presents some potential problems. First, bowls potentially break into more rim sherds than do jars, resulting in an artificially inflated bowl count. I mitigated this potential problem for the CCP by refitting rim sherds and counting them collectively as one. Another problem that is not as easily dealt with is vessel use life. Ethnographic data show that larger vessels usually last longer than smaller vessels within the same functional category (Longacre 1985). For this reason, bowls may potentially break more frequently than do large jars and, because of this factor, can potentially become overrepresented in the refuse. I present the figures with these cautionary notes in mind.

Table 56 presents the two collections by function and context. The Phoenix Basin collection, like the CCP collection, reflects similar functional diversity across all of the contexts. One difference already mentioned but not reflected in Table 56 was the common occurrence of scoops in all three contexts in the Phoenix Basin collection and the extremely low frequency of scoops in the CCP collection.

Table 57 provides a comparison of functional categories and volume ranges for the two collections. I used a formula for calculating volume for a cylinder ($V = \pi r^2 h$), and I calculated the volume for the Phoenix Basin collection using the maximum and minimum diameters and height measurements reported in Crown (1983:Tables I.2.24 and I.2.27). Clearly, the volume measurements grossly overestimate the true volume of the vessels represented by the diameter and height measurements. Therefore, using Crown's (1983:Figure I.2.2) scaled drawings of her nine formal categories, I was able to use the method described in Volume 2, Appendix A.1, to more accurately calculate volume. Briefly stated, volume was calculated by measuring the height and diameter at intervals along the vertical axis of each vessel and creating a three-dimensional object of

Table 55. Context Comparison of CCP Collection and Phoenix Basin Collection

Vessel Form, by Collection	Cremation	Inhumation	Domestic	Total
Cottonwood Creek Project[a]				
Vessels				
Bowls	—	131	10	141
Jars	—	47	3	50
Phoenix Basin[b]				
Vessels				
Bowls	158	60	54	272
Jars	136	21	22	179

[a] Does not include the 14 TCAP vessels.

[b] Data from Crown (1983:Tables I.2.34 and I.2.42).

Table 56. Function by Context for the CCP and Phoenix Basin Vessel Collections

Collection/Function	Context			Total
	Domestic	Cremation	Inhumation	
Cottonwood Creek Project[a]				
Cooking	3	—	14	17
Food preparation/serving/eating	3	—	59	62
Food preparation/ cooking	4	—	58	62
Liquid carriers	2	—	4	6
Liquid storage[b]	—	—	42	42
Liquid storage/dry storage	1	—	1	2
Total	13	—	178	191
Phoenix Basin				
Cooking	6	44	5	55
Food preparation/serving/eating	30	73	33	136
Food preparation/serving/cooking	19	65	24	108
Liquid storage	13	77	14	104
Liquid carrier/dry storage	8	35	5	48
Total	76	294	81	451

[a] Does not include the 14 TCAP vessels.
[b] CCP V 27 (classified as a liquid carrier/liquid storage vessel) is counted under liquid storage for comparability with the Phoenix Basin.

Table 57. Vessel Function and Volume Ranges Calculated by the Author from Crown's (1983) Data

Formal Groups	Group No.	Function	Liters		
			Minimum	Maximum	Mean
Crown's data[a]					
Bowls					
	1	food preparation/serving and eating	0.01	19.95	0.89
	2	food preparation/cooking	0.25	10.70	1.87
	3	food preparation/cooking	0.45	13.22	1.87
	4	cooking	0.20	2.52	0.70
Jars					
	1	dry storage/liquid carrier	0.33	20.45	2.11
	2	cooking	0.60	4.75	1.97
	3	liquid storage/pouring/drinking	0.01	1.86	0.58
	4	liquid storage	1.54	28.84	6.18
	5	liquid storage	2.09	10.70	5.15
Cottonwood Creek Project[b]					
		food preparation/serving and eating	0.58	8.53	3.49
		food preparation/cooking	0.19	5.12	1.74
		cooking	0.17	3.54	0.95
		liquid storage[c]	0.06	16.27	1.66
		liquid carrier	0.32	10.70	2.79

[a] Volume calculated using height and width measurements provided by Crown (1983:Tables I.2.24 and I.2.27) and corrected using the mean values (see text).
[b] Volume calculated using the method described in Volume 2, Appendix A.1; Crown's formal groups do not apply to the CCP.
[c] Includes only those vessels recovered from CCP, excluding the big vessels from Desert Archaeology's TCAP.

each vessel in AutoCAD. The volume of the object could then be calculated in AutoCAD. I then used the more-accurately calculated volume measurements to generate correction factors for each of the nine formal categories. I accomplished this by dividing the more-accurate volume measurement for the scaled vessels by the less-accurate volume generated with the formula for the volume of a cylinder. For example, Crown (1983:Table I.2.24) reported a mean height of 7.1 cm and a mean width of 16.08 cm for her formal category of "Group 1" bowls. The cylinder formula produced a volume of approximately 1.42 liters. This volume figure contrasts with the one generated using the method described in Volume 2, Appendix A.1, which produced a volume figure of 0.89 liters. I then divided the more-accurate volume value of 0.89 liters by 1.42 liters and obtained a correction factor of 0.624 for the Group 1 bowls. I then multiplied the correction factor to the minimum and maximum volume values generated using the cylinder formula to obtain the values reported in Table 57. I did this for all nine of Crown's formal categories.

The volume comparisons reveal some striking similarities between the two collections. Aside from a few maximum values that were much larger for the Phoenix Basin collection, the mean values all fall within a few liters for the equivalent functional categories between the two collections. Unfortunately, I was unable to evaluate how volume varied by context for the Phoenix Basin collection. The CCP vessels recovered from the mortuary context were, in general, smaller vessels. This was especially true for the jar forms. Perhaps the larger vessels represented in the volume ranges for the Phoenix Basin collection derived from domestic contexts.

In general, the two collections exhibit functionally equivalent vessels (see Table 56). One contrasting point in the functional comparison is the presence of dry-storage vessels in the Phoenix Basin collection. Recall that only a single vessel in the CCP collection was assigned to this functional category. Perhaps there is a morphological explanation for this particular difference. The Phoenix Basin vessels exhibited tall, cylindrical necks on most of the jar forms (Crown 1983:Figure I.2.2). This morphological trait may reflect a desired functional advantage. The consequence of this particular trait when using ratios to assign function resulted in a higher height-to-breadth ratio for these vessels and "pushed" them into the dry-storage category as defined in this and Crown's study. Using ratios to assign function, as is done in this and Crown's study, potentially obscures subtle and obvious morphological variation within functionally equivalent categories. The morphological variation potentially relates to differences in ethnic aesthetics or differences in food storage, processing, and transporting techniques and behaviors. Multiple studies have demonstrated a remarkable degree of consistency within ethnic groups pertaining to ceramic-vessel morphology (Kramer 1997; May and Tuckson 1982; Reina and Hill 1978; Longacre and Skibo 1994). This brings me to the final point in the comparison—vessel morphology.

I redrew Crown's "idealized" vessel forms for the nine defined formal categories. According to Crown (1983:168–179), these vessels represent the formal variability within the Phoenix Basin collection. In comparing vessel morphology between groups, it is important to control for vessel function. I present functionally equivalent vessels from the two collections for the morphological comparison (Figures 57 and 58). Although the comparison was limited to a single vessel from most of the functional categories, some interesting variation exists. The presence of flaring rims and the lack of acute angles among the CCP collection distinguished the functionally equivalent forms from the Phoenix Basin collection (see Figure 57). The jars possessed similar formal variability. The presence of flaring rims and relatively less-restricted forms in the CCP collection distinguished it from the straight, cylindrical necks seen on the more-restricted Phoenix Basin forms (see Figure 58).

Comparison Conclusions

The comparison provided some limited insights into the similarities and differences between the two collections. First, at a general level, the collections exhibited functionally equivalent vessels. The exception to this was the lack of dry-storage vessels in the CCP collection. As discussed earlier in this chapter, many of the liquid-storage vessels from the CCP may have served this function. Future investigations should explore this potential pattern more closely. Does the absence of vessels that corresponded to the parameters defined for dry storage relate to vessel morphology (see below) or does it reflect differences in media used for dry storage between the two groups compared in this study?

The inability to link volume figures to specific vessels in the Phoenix Basin collection precluded refining the functional assignments beyond what Crown reported and limited the scale of the comparison. Nonetheless, the volume ranges and, more importantly, the means for the functionally equivalent vessel categories provided an independent measure that reinforced the functional similarity between the two collections. Clearly absent in both complete-vessel collections were the extremely large vessels. Perhaps this reflects the similarity in recovery contexts. The collections of vessels for both groups derive primarily from mortuary contexts. The CCP mortuary contexts were biased toward smaller vessels.

The primary difference between the two collections relates to vessel morphology among functionally equivalent vessels (see Figures 57 and 58). This study focused on how intended vessel function influenced vessel form; however, there is a definite cultural component to vessel form. Arnold (1985) concluded that vessel shape is the ceramic unit most useful in identifying cultural processes. Watson Smith (1990:214) has suggested a similar conclusion in referring to his hypothetical "Happy Potter," stating that she

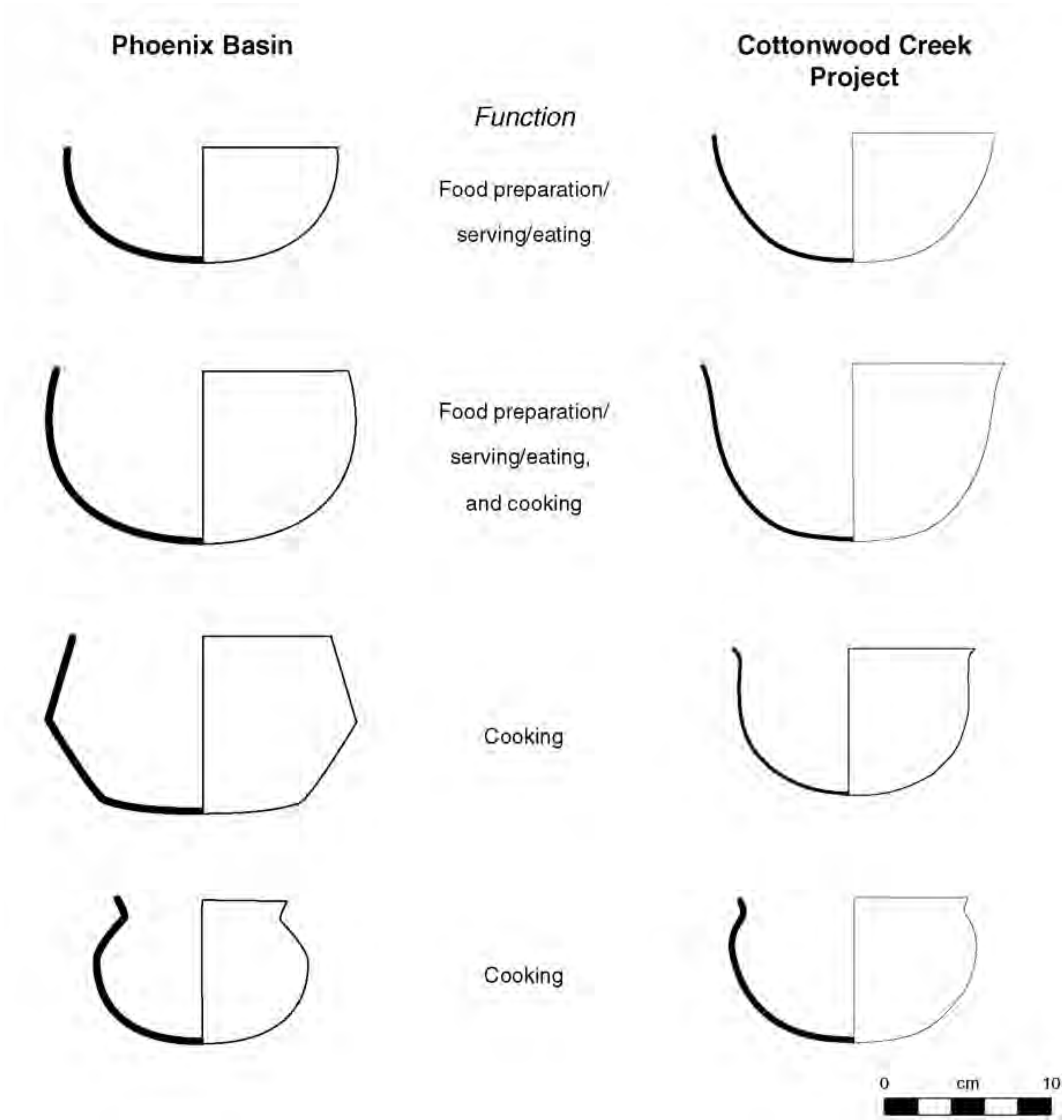


Figure 57. Comparison of bowl forms by function.

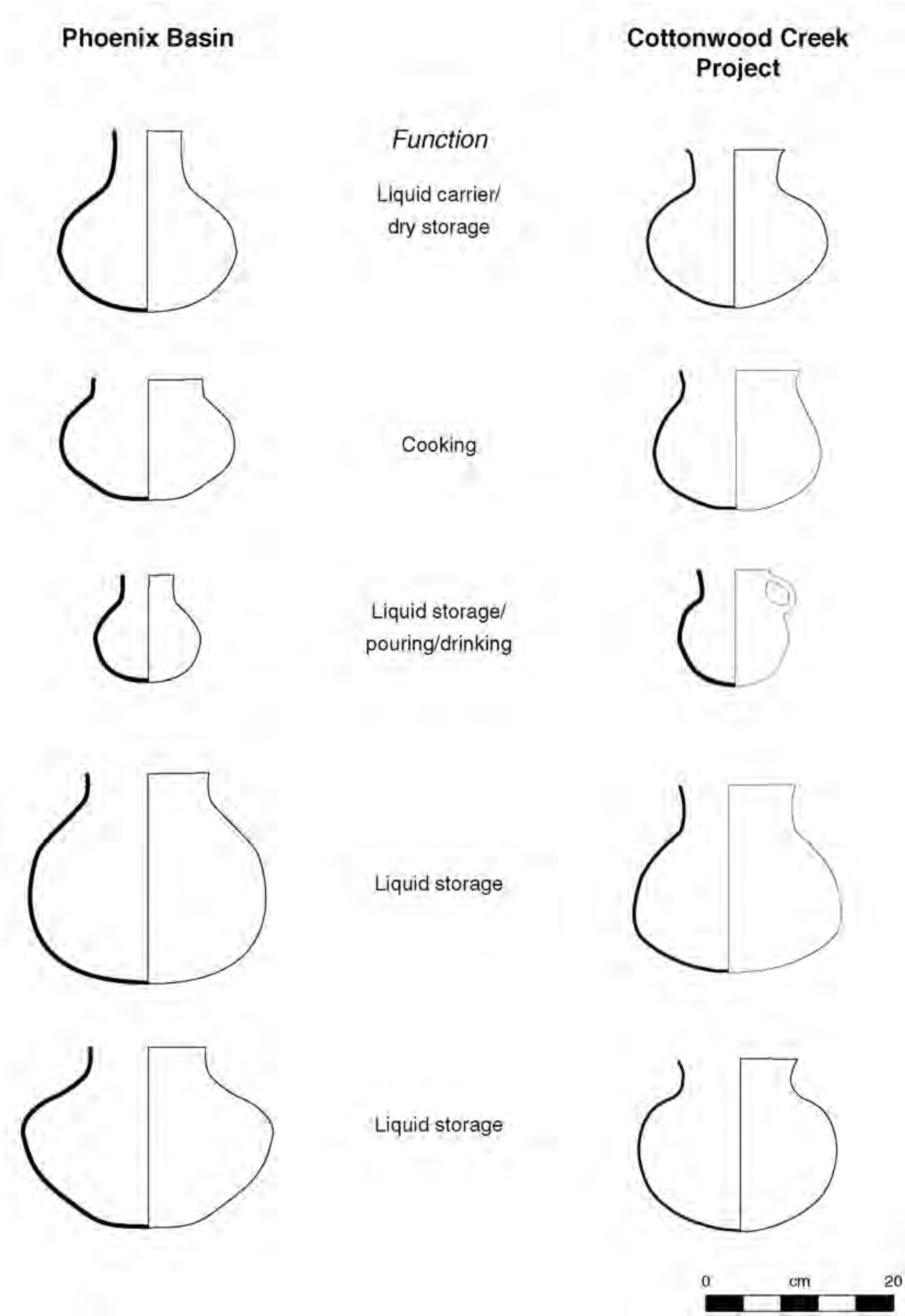


Figure 58. Comparison of jar forms by function.

has the resources at hand "to manufacture all the pottery in the world, achieving infinite variety from combinations of finite elements. This is not a mathematical paradox, as we shall see, but in point of fact she cannot really go so far. Her cultural heritage will operate as an intangible coercive force on her ideal potential and will limit severely the number of combinations that she may achieve."

Archaeologists routinely search for and use material correlates that represent cultural or ethnic groups. Perhaps the variability in vessel morphology seen between the two collections corresponds to a characteristic manner or way of producing ceramic containers that results in consistent vessel forms produced within distinct ethnic groups. The general theoretical concepts on style—in this case, "formal style"—and cultural affiliation are well represented in the literature (Childs 1991; Conkey 1990; Conkey and Hastorf 1990; Davis 1990; DeBoer 1990; Hodder 1990; Lechtman 1977; Sackett 1977, 1982, 1990; Smith 1990; Wiessner 1983, 1984, 1990). No single conceptual or theoretical framework addresses style in the same way, and for good reason. Conkey and Hastorf (1990:2) have made the point that "style is always grounded in some cultural context or frame of reference" and is "diverse, multivalent and elusive." The variability in style referred to here closely resembles Sackett's (1977, 1982, 1990) isochrestic model of style. "Isochrestic" literally means equivalent in use. The premise holds that there exists a spectrum of equivalent alternatives in manufacturing and using material items. Consider again the vessels in Figures 57 and 58. Each vessel from each group serves an equivalent function, yet some exhibited differences in morphology between the groups. Do these differences in morphology relate to ethnic differences? This is certainly a plausible hypothesis, and the different mortuary custom of cremating the dead represented in the Phoenix Basin collection provides an important independent variable likely related to differences in ethnicity. Certainly, this provides another potentially fruitful direction in future research. Do the differences in morphology represent a difference in ethnic aesthetics and/or do they represent ethnic differences in food storage, processing, and transporting practices? Conversely, it is possible there is a temporal component to the differences. I was only able to make comparisons with vessels that were contemporaneous at the phase and period level. Consequently, caution must be exercised in drawing any tentative conclusions. Answering these specific questions is beyond the scope of the present comparison, but hopefully the limited comparison and the larger study presented here will help focus and frame future research.

Concluding Remarks

The analysis of the ceramic material in conjunction with archaeobotanical and skeletal data allowed me to reconstruct the general culinary activities carried out at the CCP sites. The method used to record and analyze the vessel profiles resulted in a larger sample of vessels with volume measurements and allowed rim sherds to be "fitted" to the profile types. The profile types provided a proxy indication of the morphology of the original vessel for the portion of the sample represented only by rim sherds. Further, the metric attributes provided a means for modeling vessel size for the sample of rim sherds. Modeling vessel morphology and size for the rim sherds provided a much larger sample of vessels with functional determinations. With some notable exceptions, most ceramic functional studies in the Southwest focus on a sample of complete or nearly complete vessels. This study is among the minority of studies that used techniques to determine function for rim sherds.

The metric parameters (functional ratios) defined using the ethnographic data provided an initial and generalized functional determination for the complete vessels. The initial functional determination required further evaluation based on other morphological variables, such as size, and use-alteration observations, however. Examining the other variables allowed for a refinement of the general functional assignment. In some cases, the use-alteration observations provided conflicting functional determinations. For example, the reworked "liquid-storage" vessel had evidence of sooting, suggesting that it was used for cooking. The reworked vessel brings up two critical points concerning the contexts used in this study. First, although the mortuary contexts yielded well-used vessels representing diverse functional categories, there was a bias toward smaller jars. This required augmenting the sample with large jars, primarily recovered from house floors, to offset the bias. Second, one of the strengths of using the vessels from mortuary contexts was that I defined a functional category not found in the other contexts at the CCP—dry roasting. The dry-roasting vessel was identified primarily because it was recovered as a complete artifact. This type of ceramic-reuse behavior is difficult to identify in sherd collections. The success of my comparative methods for assigning function and proxy measures of volume to the rim sherds required that the mortuary vessels represent a subset of containers used on a daily basis. This may not be true of mortuary collections from other sites and requires a critical evaluation of the contexts prior to applying the methods used here.

One limitation of the study came from the lack of complete or nearly complete vessels from burnt contexts. Vessels from burnt contexts (e.g., house floors) often contain charred macrobotanical material. If present, the vessels from house floors would provide a excellent sample of vessel forms and functional categories to compare with the mortuary collection. Such a comparison might reveal differences in vessel function between the two contexts or corroborate that the mortuary collection represented a subset of domestic vessels. This type of data would be useful in independently evaluating the functional determination derived from the ethnographic model and in evaluating differences and similarities in context. In the absence of vessels from floor contexts and macrobotanical material associated with specific containers, other techniques and methods (discussed below) could provide similar independent data sets.

Future Research

In future research, I intend to incorporate some of the new techniques and methods used to derive functional determinations, specifically use-alteration observations and residue studies. Such analyses would provide independent corroboration of studies that rely on formal attributes. More importantly, they might provide alternative functional determinations that could not be obtained any other way.

Recent research by Beck (2001) identified a use-alteration signature of maize preparation—alkali processing. Beck inferred alkali processing of maize by identifying patterned salt erosion on the interior of vessels. If erosion and spalling occur only on the interior vessel wall and meet specific morphological criteria and exterior salt erosion is not observed throughout the collection, then alkali processing is likely responsible (Beck 2001:202). Clearly, Beck's use-alteration variables should be used in future studies.

Residue studies provide another potential means by which to refine vessel use and even determine what materials were cooked or processed in a specific vessel. Recent research targeting food residues (plant and animal) preserved on the surface and absorbed into the vessel wall of prehistoric ceramic containers offers some exciting interpretive potential (Dudd et al. 1999; Evershed et al. 1995; Malainey 1995; Malainey et al. 1999a, 1999b; Thompson et al. 1994). First, many of these studies used sherds. Second, the results provide direct evidence of those plant and animal materials that were processed or contained within the vessels. The chemistry required is complex and several confounding variables exist. Oxidation and other processes of degeneration of the residues can result from burial and standard artifact cleaning (Leach 1998; Tuross 1995). Nonetheless, Dudd et al.'s (1999) residue studies on Neolithic collections from the Welsh Borderlands, United Kingdom, led them to suggest that ceramic containers from two different traditions—Peterborough Ware and Grooved Ware—were each used to process different faunal materials.

Residue studies provide a powerful analytical tool if used cautiously and in conjunction with formal and use-alteration studies. The ability to independently evaluate, refine, and suggest alternative uses for ceramic containers would enhance any ceramic functional study. Further, residue analysis is easily applied to sherds. This is a decided advantage, because sherds constitute the largest sample from most archaeological collections. Also, use-alteration studies often require complete or nearly complete vessels so that use-alteration patterns can be fully understood.

In addition to reconstructing culinary behaviors and ancient foodways, the methods used here to document vessel morphology could be used to examine ethnic differences in vessel morphology. Once the functional determinations are made, researchers could compare the morphological differences in functionally analogous vessels. Approaching the data in this way might reveal subtle cultural or ethnic differences in vessel form. For example, the differences in profile for cooking and water-carrying vessels observed in the Kalinga studies correlate with different municipalities (M. Stark 1995a). Combined with other independent lines of data (e.g., architecture and mortuary practices), a clearer picture of the past might emerge.

Ceramic containers represent a single component subsumed within a complex system of cultivation, gathering, processing, storing, cooking, and consumption that sustained the prehistoric occupants of Tonto Basin. Presumably, ceramic containers also provided important facilities in the performance of religious ceremonies and other activities indirectly or unrelated to subsistence endeavors (e.g., Bunzel 1972; Cushing 1920; Fontana et al. 1962; Powell 1875). Traditionally viewed pragmatically as subsistence systems by archaeologists, a recent surge of literature explores the social and ideological implications of food and eating (Gumerman 1997; Mintz 1996; Sherratt 1999). For many cultures, the act of eating is charged with social meaning and governed by ritual beliefs. For example, Cushing described a particular early meal with the Zuni, whereby his unintended actions and ability to recover, as he put it, "decided the fate of my relations with the Zuni Indians" (Cushing 1920:550). Powell (1875) described strict rituals and taboos associated with preparing particular meals and dishes. The assumption follows that the inhabitants of Tonto Basin imbued the cultivation, gathering, processing, storing, cooking, and consumption of food with cultural meaning and ritualistic behaviors. It is within this larger context that the ancient inhabitants of Tonto Basin used ceramic containers.

CHAPTER 5

Formative Period Subsistence Practices in Tonto Basin, Surrounding Uplands, and Hohokam Core Area

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The Cottonwood Creek project (CCP) research design identified the historic context of "subsistence and settlement" as an integral aspect of the study (Ciolek-Torrello and Klucas 1999:17–20). Integrating the results of the CCP with those obtained from previous projects in Tonto Basin, the surrounding uplands, and Hohokam core area is a primary focus of the CCP. Human subsistence strategies are complicated phenomena that involve human-land relationships, storage and processing features, processing and hunting tools, and household-artifact assemblages. Here, our interests in Formative period subsistence focus on the inferences that can be made concerning prehistoric diet using the plant and animal remains analyzed as part of the CCP and a number of other projects in the region. The most-important issues are comparing plant and animal usage between the lowlands and uplands and highlighting notable changes in these over time from the pre-Classic to late Classic periods. Our review of the archaeobotanical and faunal records indicates that the importance of wild-plant foods lessened over time as emphasis on agricultural products increased, that large game populations were likely over-exploited, and that the plant and animal remains from lowland sites are substantially different from those obtained from upland sites. The shifts that we identified concerning the use of wild-plant foods, increased agricultural investment, and hunting occurred during or shortly after the poorly understood pre-Classic–Classic period transition, which has been conventionally identified as the Miami phase (A.D. 1150–1250). It is during this interval that the CCP habitations of the Vegas Ruin (AZ U:3:405/2012), the Crane site (AZ U:3:410/2017), and the Rock Jaw site (AZ U:3:407/2014) were occupied (see Volume 1).

For this study, lowland projects were defined as those situated in the Lower Tonto Basin, like the CCP, and near Rye Creek in the Upper Tonto Basin. In lowlands, prehistoric peoples had access to either extensive alluvial floodplains along the Salt River and, to a lesser extent, along Tonto and Rye Creeks, where both large-scale floodwater farming and irrigation farming was possible. Upland projects (except for the RCMP), include those in the Upper Tonto Basin, the Mazatzal Mountains, Globe highlands, Miami Wash, and other surrounding uplands. These areas are distinguished by their relatively small amounts of arable land along small and medium-sized drainages where small-scale runoff agriculture or overbank floodwater agriculture could have been practiced. These upland areas also contain potential areas for dryland agricultural fields. Previous research (see Homburg 1998; Klucas and Ciolek-Torrello 2003; Vanderpot 2009; Van West and Altschul 1998) has suggested these geographical differences had an important influence on subsistence practices.

This chapter represents our compilation of the most-salient results of select archaeobotanical and faunal studies in these regions. Our ultimate objective is to evaluate the importance of our subsistence data and to put the CCP data into a broad regional perspective. However, not all of the studies conducted in Tonto Basin, the surrounding uplands, and the Hohokam core area are directly comparable. Similarly, not all of the projects in the region produced archaeobotanical and/or faunal collections large enough for meaningful comparisons to be made concerning temporal or spatial issues. Using the region's project reports, we independently present the most-important trends concerning plant use, agriculture, and animal procurement in lowland and upland settings during the pre-Classic and Classic periods. The archaeobotanical and faunal data presentations are organized somewhat differently, based in part on how these data were presented by the various project specialists and their respective research designs and in part on the nature of subsistence issues that are generally addressed by archaeobotanists and faunal analysts. We conclude this chapter with a summary and discussion of our efforts.

Prehistoric Plant Use, Agriculture, and the Archaeobotanical Record

A select group of seven lowland and five upland projects have been synthesized here for archaeobotanical remains (Table 58). For these projects, site types differed considerably, ranging from platform mound communities to small, rural agricultural settlements including field houses and agricultural features. The time period of interest here is the pre-Classic through Classic (Miami, Roosevelt, and Gila phases) periods. Although some projects—among them the RCD (Miksicek 1995) and TCAP (Huckell 2002)—included archaeobotanical remains from time periods prior to the pre-Classic, those earlier periods have been excluded here. Also, only a single project (Adams 2003) focused on plant use within the pre-Classic–Classic period transitional Miami phase, and only a single project (Dering 1998) reported plant remains from the late Classic (Gila phase) period well, with very limited information available from a few other projects.

For this overview, evidence from flotation and macrofossil samples (when reported) is of primary interest. However, some researchers (Fish et al. 1985; Halbirt and Gasser 1987; Phillips 2003) combined larger plant remains with pollen results, and other researchers integrated highlights of pollen results reported elsewhere into their chapters. Therefore, some pollen highlights have been included here, including a strong case for the use of cholla (*Opuntia* sp.) flower buds in the region and, in rare cases, providing the only evidence of maize/corn (*Zea mays*) use.

Archaeobotanical data are robust for most projects, with flotation sample numbers as high as 617 (Dering 1998). Reports on six of the seven lowland projects and three of the five upland projects are each based on more than 70 flotation samples. A comparability issue exists in that two earlier projects (Ash Creek and Mazatzal Piedmont) do not list the presence of agave (*Agave* sp.), as both projects predate the widespread recognition of agave fibers. Previous archaeobotanical syntheses focusing on various groups of projects within the broader region have been consulted, among them those by Dering (1998), Huckell (2002), and Miksicek (1995).

The general plant-use patterns reported here do not take into account differences in site type, the range of features sampled for each project, or the differences in sample sizes or number of samples per site among the projects. Also, data varied in presentation by the specialists, who, in some cases, calculated the presence (ubiquity) of plant remains within samples from a given project or subproject and, in other cases, calculated the presence of plant remains within features. Ubiquity is expressed as a percentage of the total samples or features within which a specific plant taxon has been identified. Widespread recovery of a plant results in high ubiquity and a presumption of fairly common usage; restricted recovery results in low ubiquity and a presumption of infrequent usage. In those rare cases where plant taxon ubiquities were calculated both by sample and by feature (Huckell 2002), it became clear that both methods resulted in generally similar views of the relative level of representation of most plants.

Summary of CCP Archaeobotanical Analysis

The CCP sites yielded archaeobotanical materials in 83 flotation samples, 20 macrofossil samples, and 106 pollen samples (47 soil samples and 59 mortuary vessel washes) distributed among five of the nine prehistoric sites investigated (see Volume 2, Chapter 7). These sites include a possible satellite (AZ O:15:41/583) of the Ushklish Ruin; a small habitation known as the Rock Jaw site; a field house (AZ U:3:404/2011); a large, intensively occupied site known as the Vegas Ruin; and the Crane site, a smaller cobble-adobe-foundation compound and pit house habitation. Charred reproductive parts and wood representing a minimum of 24 plant resources were identified, including both agricultural products and wild plants. These specimens were primarily collected from pre-Classic, pre-Classic–Classic transition (Miami phase), and Classic period (Roosevelt phase) contexts.

Differences are apparent in the plant record through time. Pre-Classic period contexts preserved the widest variety of plant resources suggestive of everyday subsistence and wood needs. Domesticates included cotton (*Gossypium* sp.) and beans (*Phaseolus* sp.), along with managed indigenous plants, such as agave and little barley (*Hordeum pusillum*). A large diversity of wild plants suggests occasional gathering within the region. Commonly burned wood types included juniper (*Juniperus* sp.), mesquite (*Prosopis* sp.), and creosote bush (*Larrea tridentata*). Features representing the Miami phase preserved fewer foods or other crops, including cotton, agave, maize, and cheno-ams (representing plants including *Chenopodium* and/or *Amaranthus*). Features of the Miami to Roosevelt phase (early Classic period) preserved maize, cheno-ams, grasses, and hedgehog cactus (*Echinocereus* sp.) remains, along with the same wood types common in the pre-Classic period. The pattern of declining plant-resource diversity continued, with Roosevelt phase groups focusing primarily on maize and cotton. In summary, a pre-Classic–Classic period subsistence shift that appears to have begun in the Miami phase was one of declining emphasis on wild plants and managed resources, coupled with increasing concentration on maize and cotton crops. This shift suggests

Table 58. Projects Consulted for Archaeobotanical and Faunal Data and Utilized for the CCP Study

Projects	Archaeobotanical and Faunal References	Pre-Classic	Early Classic (Miami/Roosevelt Phases)	Late Classic (Gila phase)	Type(s) of Sites	Flotation Samples (n)	Macrofossil Samples (n)	Analyzed Faunal Specimens (n)
Lowlands								
Ash Creek	Fish et al. 1985; Bayham and Hatch 1985	Sedentary	no	yes	habitations, agricultural features, suspected field areas	23 (plus 90 pollen samples)		1,019
SR 188–Cottonwood Creek Project (CCP)	Volume 2, Chapter 7; Volume 2, Chapter 5	Colonial and Sedentary	yes (includes some Miami phase deposits)	no	hamlet, pit house, small cobble-adobe-foundation compounds and extramural features	83	20 construction-beam samples	2,992
Roosevelt Community Development Study (RCD)	Miksicek 1995; James 1995	Colonial and Sedentary	yes	no	small habitations, field houses, and agricultural fields and features, including compounds in early Classic period	173	357	6,530
The Roosevelt Rural Sites Study (RRSS)	Adams 1994; Cairns 1994	Sacaton phase	yes	no	small habitations, field houses, agricultural fields and features, including compounds in early Classic period	72	>50	303
Roosevelt Platform Mound Study (RPMS)	Dering 1998; Cameron 1998		yes	yes	farming villages and platform-mound communities	617	75	20,090
Rye Creek Mitigation Project (RCMP)	Kwiatkowski 1992; Kwiatkowski and Miksicek 1992; Szuter 1992	Sacaton	yes	no	permanent and seasonal habitations, including both pit houses, and pit rooms in the early Classic period	97	8, plus 128 wood-charcoal samples	2,785
Tonto Creek Archaeological Project (TCAP)	Huckell 2002; Waters 2002	Colonial and Sedentary	yes	yes (limited)	pit-house farmsteads in pre-Classic period; compounds in early Classic period	451	19, plus 1,909 fragments of structural wood and fuelwood	2,146
Uplands								
Mazatzal Rest Area	Bohrer 1996; Bilsbarrow et al. 1996		yes	yes	habitation, field house, and outdoor processing features	32		7
Mazatzal Piedmont	Ciolek-Torrello, ed. 1987; Halbirt and Gasser 1987		yes (includes Miami phase deposits)	no	homesteads, courtyard sites, and field houses, all spread over three valleys	119, plus 59 pollen samples		66

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Projects	Archaeobotanical and Faunal References	Pre-Classic	Early Classic (Miami/Roosevelt Phases)	Late Classic (Gila phase)	Type(s) of Sites	Flotation Samples (n)	Macrofossil Samples (n)	Analyzed Faunal Specimens (n)
SR 88–Wheatfields	Phillips 2003; Glass 2003	Colonial and Sedentary	yes	yes (limited)	pit-house villages and compounds	144, plus 140 pollen samples		7,223
Pine Creek Project	Hutira 1990; James 1990	Colonial and Sedentary	no	no	larger settlements and smaller habitations	50		1,493
Sycamore Creek Project (SCP)	Adams 2003; Maxwell and Shelley 2003	Colonial and Sedentary	yes (includes Miami phase deposits)	no	hamlets, limited-activity roasting sites, farmsteads, and field house	163	24 construction-beam samples	3,313

increasing efforts to intensify production of a small number of the most dependable resources.

The pollen evidence reinforces and fills out the record of prehistoric plant use documented in the charred-plant record. The pollen assemblages were dominated by cheno-am and Compositae. Three of the major cultivated and managed plants were also identified in the pollen record: agave, maize, and cotton. Maize was especially widespread, although it usually occurred in trace frequencies. Native economic plants identified in the pollen samples included *Cereus*, cholla, yucca (*Yucca* sp.), and jojoba (*Simmondsia*). Pollen weeds such as *Eriogonum*, *Boerhavia*, *Euphorbia*, *Kallstroemia*, *Sphaeralcea*, and *Tidestromia* were also common to abundant in both soil and vessel samples. Modern disturbance was indicated by the presence of exotic species such as *Eucalyptus*, mulberry (*Morus*), elm (*Ulmus*), pecan (*Carya*), and filaree (*Erodium cicutarium).* Overall, the pollen washes exhibited greater evidence of contamination than did the soil samples.

The CCP archaeobotanical record provides additional insights. The range of subsistence strategies practiced included low levels of floodwater farming of maize, cotton and, likely, little barley, as well as dryland farming of agave stands. The plants gathered or farmed by the CCP groups represent both the warm and cool seasons, together spanning many months of the calendar year. It is possible that the pre-Classic period groups were primarily sedentary, based on their focus on both cool- and warm-season crops and cool- and warm-season wild plants of the region and that the Classic period groups farmed warm-season maize and cotton in the area but were more mobile in the other seasons of the year. Presence of weedy plants, including cheno-ams, suggests some level of landscape disturbance, which undoubtedly included agricultural fields.

Previous Research

Tonto Basin Lowlands

Ash Creek

Staple plant foods of the Ash Creek Project (Fish et al. 1985) were a mix of agricultural products (maize) and wild plants (prickly pear [*Platyopuntia* sp.] and grasses), some of them likely managed (cheno-am seeds and cholla). Most resources probably came from the basin floor. Use of agave was not reported, but the Ash Creek analysis was accomplished prior to general recognition of agave remains. Only a single grain of little barley was recovered.

Roosevelt Rural Sites Study

Staple plant foods of the Roosevelt Rural Sites Study (RRSS) were agricultural products (maize and agave) and field weeds (cheno-am seeds), likely grown nearby in *bajada*-slope fields (Adams 1994). Cotton and jack beans (*Canavalia ensiformis*) were also grown. Groups gathered wild plants, most from Lower Tonto Basin elevations; uplands did provide structural timbers in the form of conifer beams (piñon [*Pinus edulis*], juniper, and Douglas fir). Temporal comparisons suggest that (1) agave exploitation intensified in the early Classic period and (2) there was a shift between the Sacaton phase pre-Classic and early Classic period to increasing dependence on agricultural-field weeds and other wild-plant foods. Evidence of little barley was lacking from rural sites. Cotton was recovered only in limited amounts in two pre-Classic and one early Classic period context. Record of cactus fruit use is relatively small.

Roosevelt Community Development Study

Staple plant foods of the RCD (Miksicek 1995) were agricultural products (maize and agave) and field weeds (cheno-am seeds). Farmers also grew common beans, cotton, squash, and grain amaranth. Wild-plant use was widespread, but most resources were recovered in relatively low amounts, suggesting occasional use. Temporal comparisons suggest that (1) Sedentary phase groups relied on maize and agave, and a diversity of other plants, both domesticated and wild; (2) agave exploitation intensified in the early Classic period Roosevelt phase, as reliance on maize remained high; and (3) the final middle/late Roosevelt phase samples preserved high ubiquities of maize, agave, and cotton, and contained less mesquite and more upland woods (juniper, oak [*Salix* sp.], and piñon) and montane woods (ponderosa pine [*Pinus ponderosa*], Douglas fir [*Pseudotsuga* sp.], and white fir [*Abies concolor*]). A high level of recovery of agave stalks (as roofing materials) in the middle Roosevelt phase suggests that agave plants were probably being grown in the immediate vicinity. Cotton was likely grown for exchange of fiber or cloth in the Sedentary period, and this trend continued into the early Classic period. Groups did not rely on mesquite pods or saguaro (*Carnegiea gigantea*) fruit for food. Grain amaranth was added to the list of domesticates in the middle/late Roosevelt phase of the early Classic period.

Roosevelt Platform Mound Study

Staple plant foods of the RPM were agricultural products, especially maize (Dering 1998). Wild plants were occasionally used, most from Lower Tonto Basin elevations; uplands provided some structural timbers in the form of conifer beams. Temporal comparisons showed little change in reliance on staple crops between the Roosevelt and Gila phases of the Classic period. Little barley was quite important in the Tonto Creek arm of Tonto Basin (with ubiquities of up to 40 percent), where it remained an important food resource during the later years of the Classic period. Cotton was important in the Salt Creek arm (ubiquities between 22 and 56 percent), where production for exchange was very likely and on a par with many Hohokam sites in the core area. Agave was also an important resource, documented in ubiquities of up to 46 percent. Cholla cactus was likely planted near dwellings, based in part on high pollen presence (21–100 percent) within some site samples. Groups did not rely on mesquite and saguaro for food. Grain amaranth was possibly present in the Classic period.

Rye Creek Mitigation Project

Staple plant foods of the RCMP were managed agave, little barley, other wild plants, and to a lesser extent, domesticated maize (Kwiatkowski 1992). Only a single seasonally occupied site (Arby's) contained maize in relatively high ubiquity. Average little barley presence was high (42 percent) for all Rye Creek sites, among the highest ever recorded. Use of wild plants was important, including cheno-ams, tansy mustard (*Descurainia* sp.), various cacti, grasses, and purslane (*Portulaca* sp.). Woods regularly used for fuel by Rye Creek groups included mesquite, creosote bush, and juniper; the latter was preferred for construction timbers (Kwiatkowski and Miksicek 1992). Temporal comparisons suggest that (1) the subsistence base varied little through time, except for a decreased reliance on little barley in the early Classic period, and (2) early reliance on juniper wood in the pre-Classic period was replaced by a focus on mesquite wood in the early Classic period. Cotton is absent from the assemblages. Mesoamerican beans, squash (*Cucurbita* sp.), and gourd (*Lagenaria* sp.) are also missing from the assemblages. Evidence of mesquite pod and saguaro fruit use is essentially absent from Rye Creek sites.

Tonto Creek Archaeological Project

Staple plant foods of the TCAP were agricultural products (maize and agave), field weeds (cheno-ams), and grasses (Huckell 2002). Common beans, jack beans, possibly lima beans (*Phaseolus lunatus*), cotton, gourds, and squash were also grown. An extensive inventory of wild-plant foods were gathered in relatively small amounts, most from the local area. There was a small presence of upland or exotic plants in the assemblage, primarily conifers (pines and juniper). Temporal comparisons of major plant resources suggest that there was (1) a drop in maize presence between the Colonial and Sedentary periods, accompanied by an increasing presence of agave; (2) an increased use of both maize and agave in the early Classic period, accompanied by a drop in the use of weedy cheno-ams and other wild plants; and (3) a continuity of resource use between the early Classic and the late Classic periods, based on very limited data available from the late Classic period. Evidence of little barley use was relatively low during the pre-Classic and early Classic periods. Cotton was grown in increasing amounts from the Colonial to Sedentary period to the early Classic period, reaching its highest presence in the early Classic period. Jack beans appear for the first time in the early Classic period. Cholla cactus fruit use focused on the flower buds. Mesquite was never heavily used, and saguaro preserved only in very small amounts. An increase in storage rooms and other storage features during the early Classic period likely was linked to the increasing production of cultigens; many compounds burned with large quantities of usable items left on floors. Increased storage efforts may indicate efforts to stockpile food to buffer shortfalls or reflect the necessity of feeding rapidly increasing local populations.

Upland Locales

Pine Creek

Major staples of the Pine Creek Project (Hutira 1990) included maize and field weeds (cheno-am seeds). Wild plants gathered included dropseed grass (*Sporobolus* sp.) and cactus fruit. No agave, little barley, or cotton evidence was identified, but numerous tabular tools were recovered, which is suggestive of agave use. Poor preservation resulted in a fairly low recovery rate of plant specimens.

Mazatzal Piedmont

Major staples of the Mazatzal Piedmont Project included maize and field weeds (cheno-am seeds), wild legumes, and grasses (Halbirt and Gasser 1987). Resources gathered occasionally included cacti, manzanita (*Arctostaphylos* sp.), and a member of the lily family. Little barley was not identified, nor was there evidence of agave, but this project predates a general, widespread recognition of agave by researchers. A temporal trend was a gradual decrease in the number of resources exploited. Most resources were likely gathered locally, except perhaps for piñon wood. Occupants of courtyard sites and homesteads practiced a mixed subsistence strategy based on both wild plants and domesticates, as did occupants of field houses.

SR 87–Sycamore Creek Project

Major staples of the SR 87–Sycamore Creek project (SCP) (Adams 2003) included maize, agave, and field weeds (cheno-am seeds). Wild plants gathered included grasses and a variety of annual and perennial plants. No cotton evidence was identified. Woods most frequently sought for fuel and other needs were juniper and mesquite. Construction beams were fashioned of juniper, ponderosa pine, and other tree types. Temporal trends suggested that (1) pre-Classic period groups relied on domesticated and managed plants, while still gathering a variety of wild plants; (2) during the Miami phase, there appears to have been a shift away from agave and maize use and an increasing emphasis on wild plants, especially annuals; and (3) early Classic period groups continued to shift away from agave and maize toward wild-plant use and ceased use of little barley. The plant record suggested a mixture of low levels of floodwater farming and dryland land-management strategies.

Mazatzal Rest Area

Major staples of the Mazatzal Rest Area project included grasses (but not little barley), prickly pear fruit, cheno-am seeds, and other wild plants, including spring greens (Bohrer 1996). Maize was recovered only in the pollen record. Sites were occupied early in the growing season to harvest agave, yucca, and greens. There is no evidence of imported food products. A comparison of systems of land management along Hardt Creek and Rye Creek suggests Hardt Creek farmers dryland-farmed maize and collected wild legumes, grasses, and chenopod seeds from semidesert grasslands. In contrast, Rye Creek farmers focused on cool-season disturbed ground resources (tansy mustard and little barley grass) and floodwater-farmed maize.

SR 88–Wheatfields Project

Major staples of the SR 88–Wheatfields Project (Phillips 2003) included maize and field weeds (cheno-am seeds). Occasionally, groups gathered cacti and wild legumes. Agave was poorly represented in the assemblage, as was little barley. Presence of cotton was low, and may not have been grown locally. The most abundant cactus-pollen type was cholla pollen. Commonly used fuels included juniper, pine, mesquite, cottonwood/willow (*Populus/Salix* sp.), and monocot (e.g., maize stalks). Temporal trends suggested that the Santa Cruz phase diet of the pre-Classic period emphasized maize over wild foods, and the Sacaton and Roosevelt phase diets emphasized a diversity of domesticates and wild plants, especially cholla flower buds and cheno-am seeds.

Regional Trends

Primary archaeobotanical reports on each project listed in Table 58 have been examined for highlights relevant to subsistence and for any temporal trends among the pre-Classic, early Classic, and late Classic periods within the lowlands and uplands, as defined earlier.

Basis of Subsistence

A suite of Mesoamerican domesticates, focused on maize/corn and including common beans (*Phaseolus vulgaris*), tepary beans (*P. acutifolius*), jack beans, lima beans, pumpkin/summer squash (*Cucurbita pepo*), butternut squash (*C. moschata*), cushaw squash (*C. mixta*, formerly *C. argryosperma*), cotton, and bottle gourds (*Lagenaria siceraria*) were added through time, many of them by the pre-Classic period. Grain amaranth was added to the list in the Classic period (Dering 1998; Miksicek 1995), and by the 1400s, this entire suite of Mesoamerican crops was being grown (Bohrer 1962).

Managed or cultivated plants indigenous to the Southwest were also important Tonto Basin subsistence resources. Primary among these were agaves and little barley grass, both available in the "cool season" of late winter/early spring. Summer/fall ripening cheno-ams appears to also have been very important, along with other weedy plants and cholla cactus.

A broad diversity of additional wild plants was gathered through time by Tonto Basin groups. These included grasses, weedy plants of disturbed habitats and of irrigation canals, and some perennial plants of stable landscapes. Emphasis on wild plants varied by location and through time (as discussed below).

Agricultural Strategies

Two major agricultural strategies were practiced in Tonto Basin. These include (1) farming of annual warm-season domesticated crops, such as maize, beans, squash, cotton, and bottle gourds and (2) the management of native cool-season resources, such as little barley grass, agave hearts, and cholla flowers. Farming involved clearing fields, planting and tending crops, and usually involved some form of irrigation, whereas management was restricted largely to tending naturally occurring plants. Water needs and frost-free-season requirements differ for the two strategies.

Warm-season crops do best in the lowlands, along major streams, where irrigation was dependable. Cool-season resources thrive in higher and cooler locations, given sufficient winter rains. Yet, they could also be transferred to the lowlands and do well there.

The nature of available arable land is another factor influencing subsistence strategies adopted in the lowlands vs. the uplands. The presence of expansive Holocene terraces along both Tonto Creek and the Salt River provides ample acreage for large fields that could be floodwater farmed or irrigated. In these locations, corn and other cultigens could have been grown in large quantities. In contrast, relatively small amounts of arable land are available along smaller drainages in the uplands, where overbank flooding and dryland farming would have been among the options available for farmers.

Lowlands

In the Tonto Basin lowlands, irrigation agriculture was practiced along both Tonto Creek and the Salt River. Maize, beans, and cotton were all grown in the lowlands, along with squash and, eventually, grain amaranth. Tonto Creek likely flowed nearly permanently, suggested by the presence of cattail (*Typha* sp.) pollen (Fish et al. 1985). Lowland groups also relied on agave and little barley grass. Agave fields may have been planted in drier nonfloodplain locations, and little barley grass could easily have been broadcast onto the floodplains to provide an available springtime harvest.

Uplands

Dryland and floodwater farming were practiced in the uplands until they became less dependable in the Classic period, possibly owing to climatic shifts. Based on plant remains recovered from upland sites, Bohrer (1996) recognized two different forms of land management in two adjacent tributaries of Tonto Creek. Hardt and Rye Creeks both drain southeastward across the Mazatzal piedmont until joining Tonto Creek. Along Hardt Creek, ancient groups supplemented maize agriculture with native resources available from the semidesert grassland, including grass grains, cheno-ams, and legumes. In contrast, people living along Rye Creek practiced an agricultural cycle that included maize but also relied heavily on cool-season resources, such as little barley and tansy mustard, along with later-maturing cheno-ams and purslane. Both groups included agave as part of their plant husbandry system. Bohrer suggested that these very different records may reflect an emphasis on dryland farming along Hardt Creek and floodwater farming in the Rye Creek Valley, which integrated productive native annuals into the agricultural cycle.

General Temporal Trends

Maize

Maize agriculture appeared during the Early Agricultural period (Huckell 2002) and formed the basis of subsistence until depopulation of the area in the fifteenth century A.D. Emphasis on maize, however, varied by location and by time, as discussed in more detail below.

Agave

Agave use generally increased through time, and eventually, ubiquity values of agave equal or exceed those of maize in the lowland projects, including the RCD (Miksicek 1995), the RPM (Dering 1998), TCAP (Huckell 2002), and the RCMP (Kwiatkowski 1992). In RPM sites, agave is clearly important in both early and late Classic period contexts, and it may have been used for feasting and fiber production (Dering 1998), as well as providing a source of carbohydrates. At rural sites (RRSS) in the lowlands, situated above the Salt River floodplain, effort was intensified on agaves in the early Classic period. Agave reports from upland projects are variable. Some projects reported no agave remains, such as Mazatzal Piedmont and Pine Creek, but these projects were conducted prior to widespread recognition of agave fibers. It is possible that agave was present at these sites but was not recognized by the analysts. Low agave use seems the only explanation for its very low presence in the SR 88–Wheatfields Project. Miami and Roosevelt phase groups at the SCP sites appear to have been shifting away from tending agave fields.

Little Barley

Little barley has been identified as early as the Late Archaic period along Sycamore Creek (Adams 2003; Bohrer 1996). In lowland locations, little barley grains were recovered in 48 percent of all pre-Classic period samples from the RCMP but drop to 10 percent by the early Classic period (Kwiatkowski 1992). A similar decline occurred in the TCAP study (Huckell 2002). These patterns mimic those of the Hohokam Core area, where little barley grains are most often recovered in pre-Classic period contexts and diminish in presence during the Classic period (Gasser and Kwiatkowski 1991a, 1991b). In some lowland areas, however, little barley appears to remain quite important, even into the late Classic period, where it was recovered in 40 percent of the RPM samples from the Tonto Creek arm of the basin (Dering 1998). In the uplands, nearly all projects identified scant or no little barley remains. Only the SCP (Adams 2003) reported little barley use up through the pre-Classic period, but that use had essentially ceased by the early Classic period.

Cotton

Cotton steadily increases in ubiquity through time in the lowland TCAP (Huckell 2002), CCP (Volume 2, Chapter 7), and RCD (Miksicek 1995) communities but not in the RCMP (Kwiatkowski 1992) or RRSS (Adams 1994) communities. The most reasonable explanation for this is the location of Rye Creek up and away from the major bottomlands, and the restriction of the RRSS sites to terraces overlooking the Salt River. High cotton ubiquities in Classic period lowland RPM communities in locations along the Salt River arm of Tonto Basin (Dering 1998) suggest production for exchange. Cotton, however, is absent or barely present within all upland sites, suggesting it was not an agricultural crop in these locations.

Wood Use

Wood use for fuel, construction timbers and other purposes appears to reflect use of relatively available trees. In the RCMP (Kwiatkowski 1992) and TCAP (Huckell 2002), juniper wood was heavily used. Sites closer to creek bottoms and the Salt River arm of Tonto Basin regularly brought in mesquite wood (Dering 1998; Miksicek 1995). Fuelwood acquisition included whatever plants grew locally, including mesquite, creosote bush, cottonwood/willow, and others. Although the record generally indicates a preference for juniper, mesquite, and cottonwood as construction elements, use of higher-elevation conifers, such as ponderosa pine and Douglas fir, occasionally served some construction purposes, especially within platform mounds and Pueblo-like settlements composed of rectangular roomblocks consisting of contiguous coursed-masonry rooms, such as Griffin Wash (Miksicek 1995).

Local and Nonlocal Resource Use

There is no method currently available for distinguishing whether nonlocal plant resources were obtained through trade or procured by groups for themselves via distant trips. However, the archaeobotanical record suggests very little nonlocal usage of plant resources in the Tonto Basin lowlands and uplands. Upland plants such as piñon nuts, acorns (*Quercus* sp.), and manzanita fruit were not routinely preserved in basin-floor sites, nor much in sites above the basin floor (Adams 1994; Dering 1998; Halbirt and Gasser 1987; Huckell 2002; Kwiatkowski 1992), leaving open the question of whether lack of use or preparation/preservation biases explain these patterns. There is a general lack of use of upland plants within Tonto Basin, with the notable exception of higher-elevation conifers, such as juniper and pines, for construction purposes as reported above; such a Puebloan-like habit is one of the few to suggest the influence of Puebloan migrants into the region.

Pre-Classic and Classic Period Subsistence Strategies

Lowlands, Pre-Classic–Early Classic Period

Most of the lowland projects, with the exception of the RPM, have good records of pre-Classic and early Classic period subsistence. Temporal trends generally suggest the diversity of agricultural and wild-plant resources is highest in the pre-Classic period. However, by the early Classic period, there is a general focus on agricultural resources, in that (1) CCP farmers focused on maize and cotton, as their use of agave and little barley declined; (2) TCAP and RCD farmers focused on maize and agave; and (3) inhabitants of rural sites of the RRSS began to increasingly depend on agricultural field weeds and other wild plants, likely owing to the sites being located above the major floodplains. Along Rye Creek, the subsistence base varied little through time, except for a decreased reliance on little barley grass by the early Classic period. These differences in resource emphasis between the pre-Classic and Classic periods may reflect farmers focusing on the agricultural products that do best in their particular locations.

Lowlands, Early–Late Classic Period

The only project with adequate subsistence for the late Classic period is the RPM, where spatial variation was detected in subsistence systems between the Tonto Creek arm and the Salt River arm. However, the general list of crops changed little between the early and late portions of the Classic period (Dering 1998). It appears that no new crops were introduced during the late Classic, and no crops lessened in importance. The varied types of subsistence strategies that focused on warm-season crops and cool-season resources allowed maximum use of landforms differing in soil traits and in available moisture. Similarly, no major shift in a low-level use of wild plants occurred between the early and late Classic period.

Uplands, Pre-Classic to Transitional to Early Classic Period

Shifts in subsistence between the pre-Classic and early Classic periods are notable in the uplands. Maize and field weeds were important in all upland projects, except perhaps for the Mazatzal Rest Area project, where major staples included grasses (but not little barley), agave, and many other wild plants. In the Mazatzal Piedmont area, the general trend was a restriction in the number of resources exploited by the early Classic period. At the SCP sites, early Classic period groups continued a shift away from agave, maize, and little barley that had begun in the Miami phase toward an increase in wild-plant use. The SR 88–Wheatfields Project had yet another response, in that a pre-Classic period emphasis on maize over wild foods was replaced in the early Classic period by a concentration on a diversity of domesticates and wild plants, especially cholla flower buds and cheno-am seeds. These diverse upland shifts in subsistence between the pre-Classic and Classic periods again are likely to reflect farmers focusing on the agricultural products that do best in their particular locations.

Comparison to Phoenix Basin Groups

Tonto Basin groups of the pre-Classic and Classic periods were agriculturalists who used the Hohokam crop complex and appeared to have used Hohokam solutions to food production problems (Bohrer 1991; Gasser and Kwiatkowski 1991a, 1991b). This included a Mesoamerican crop complex, exploitation of a broad range of wild plants, and efforts to manage/cultivate selected wild plants, among them agave, little barley, and cholla. The dominance of cultigens in some Classic period sites in Tonto Basin is at times greater than that recorded for Phoenix Basin sites (Dering 1998). Castetter and Bell (1942) estimated that agricultural foods contributed between 50 and 60 percent of the modern Akimel O'odham (Pima) diet.

Unlike Hohokam records to the south, Tonto Basin use of mesquite pods and saguaro fruit is quite small. Small, permanent Hohokam villages in the Phoenix and Tucson Basins can have mesquite seed/pod ubiquities of 20–70 percent and saguaro seed ubiquities of 5–10 percent (Gasser and Kwiatkowski 1991a, 1991b; Miksicek and Gasser 1989). Despite the relative abundance of mesquite charcoal in many of the projects discussed here, the presence of mesquite reproductive parts barely registers. This remains a mystery, if these Tonto Basin groups were in fact familiar with Hohokam subsistence strategies. Reduced use of saguaro fruit has an environmental explanation, in that some travel would have been required to reach large stands of saguaro cacti. The methods used to process mesquite and saguaro products, as documented in the ethnographic record, are not always conducive to preservation in the archaeological record. Thus, reliance on these resources may have been more than is indicated by these data. These preservation problems, however, do not seem to have affected Hohokam plant assemblages to the same degree.

Faunal Resource Use

This section compares the results of the CCP study with those obtained from previous projects in Tonto Basin, surrounding upland locales, and the Phoenix Basin. Data collection and compilation focused on detecting temporal changes in the use, or perhaps availability, of faunal resources during the pre-Classic and Classic periods and an evaluation of previously identified patterns in butchering and food processing. When temporal changes have been noted, we then examined whether they were the result of cultural practices or changes in the surrounding environment(s). Cultural practices of particular interest included changes in prey selection through time and the possible relationships between settlement history and the availability of faunal resources. An examination of these topics provided insight concerning the subsistence practices and the environment inhabited by the occupants of the study area. This section begins by discussing selected projects that have been conducted in Tonto Basin, surrounding upland locales, and the Phoenix Basin.

Data compiled by J. Cameron (1998), recently presented by Waters (2002) and the CCP study (see Volume 2, Chapter 5), indicate that archaeologists have recovered over 50,000 faunal specimens from over 120 prehistoric sites in Tonto Basin. As with the archaeobotanical record discussed in the previous sections, the types of sites containing faunal remains are varied and have been interpreted as habitations, limited-activity loci, and ceremonial sites (see Table 58). This said, projects in Tonto Basin that produced large, comparable faunal collections used in this study included the Ash Creek Project (Rice, ed. 1985), the RCMP (Elson and Craig 1992a), the RRSS (Ciolek-Torrello and Welch 1994), the FLEX Tonto Basin Project (Cameron 1997a), the RPM (Rice, ed. 1998), the RCD (James 1995), and the TCAP (Clark 2000).

Similar to James (1995), we were also interested in potential differences in faunal exploitation between sites located in Tonto Basin vs. those situated in the surrounding uplands and the nearby Phoenix Basin. Several projects in the uplands surrounding the Roosevelt Lake region produced relatively large faunal collections that were analyzed in the same manner. These upland projects include the Miami Wash Project (Doyel 1978), the Mazatzal Piedmont

Project (Ciolek-Torrello, ed. 1987), the Pine Creek Project (Green 1990), the SR 88–Wheatfields Project (Doyel and Hoffman 2003b), and the SCP (Klucas et al. 2003). For reasons of comparability, the same Phoenix Basin collections used by James (1995:149–154, Table 20.27) are used here and include Las Colinas (Szuter 1989), Pueblo Grande (James 1994), Verde Bridge (at La Escuela Cuba [James 1992]), and Water Users (James 1991). Faunal specialists have used these collections to investigate not only prehistoric subsistence patterns but also to assess site function, the presence of redistribution networks, and paleoenvironmental fluctuations.

Summary of CCP Faunal Analysis

The CCP sites yielded a collection of 2,999 faunal specimens that represented all five vertebrate classes. Fish, amphibian, reptile, bird, and mammal remains were included, and together they represented a minimum of 32 vertebrate taxa (see Volume 2, Chapter 5). Mammal remains dominated this collection, which was distributed among six of the nine prehistoric sites investigated—Site 41/583, AZ O:15:103/2061, the Vegas Ruin, the Rock Jaw site, AZ U:3:408/2015, and the Crane site. The specimens were primarily collected from pre-Classic–Classic period transition (Miami phase) or Classic period (Roosevelt phase) contexts, although the sites primarily dated to the Miami phase (A.D. 1150–1250). Specimens were most numerous at the Vegas Ruin.

Postoccupational contexts, particularly trash-filled houses, extramural pits, and thermal features, contained the greatest densities of faunal remains. These remains consisted primarily of small, unburned diaphysis fragments that were rarely more than 15 mm long. Specimens from pit structures tended to exhibit the greatest degree of weathering, which suggests that these pit structures were among the oldest features from which faunal materials were recovered, or that the fill of these structures was disturbed more often compared to other contexts.

Comparing observed vs. expected values of identified leporid (rabbits and hares) bones (see Volume 2, Table 80) suggested that leporid skeletons were routinely crushed as a part of meal preparation, owing to the conspicuous overrepresentation of long-bone articular ends. The large quantities of small, severely fragmented, leporid bones recovered from the sites also suggested that the skeletons were crushed. This technique was likely similar to that documented for ethnographic groups in the Southwest, the Great Basin, and Africa. During the CCP, little direct evidence of artiodactyl-butchering techniques was recovered. Interestingly, the frequency of specific artiodactyl (deer, elk, big-horned sheep, and pronghorn) skeletal elements failed to confirm or refute established transport models based on measures of economic utility (e.g., Szuter and Bayham 1989:90–91). Major meat-bearing portions of the carcass were apparently transported to Site 41/583. A mixture of low- and high-utility elements characterized the artiodactyl elements recovered from the Rock Jaw site and Site 408/2015. The greatest diversity of artiodactyl skeletal elements was recovered from the Miami phase settlements at the Crane site and the Vegas Ruin, where many of the artiodactyl elements were fashioned into tools interred with deceased individuals.

Riparian resources formed a minor component of the prehistoric diet at the CCP sites. Lagomorph index values for the CCP sites indicate a greater number of cottontails (*Sylvilagus* sp.) were dispatched during the pre-Classic–Classic period transition compared to the following Roosevelt phase. This may reflect a reduction in available cottontail habitat or perhaps communal hunts favoring the collection of jackrabbits (*Lepus* sp.) over cottontails were conducted with greater frequency. Overall, it is unclear whether environmental change, hunting techniques, or a combination of these factors were responsible for the observed shift. However, if habitat was the controlling variable, then the decline of conditions suitable to the shrubby habitat favored by cottontails must have occurred during the Miami phase. Inspection of the large-game index indicates that artiodactyl availability steadily increased during the Classic period. A possible explanation is that the relatively high artiodactyl index and dramatic increase in the large-game index during the Classic period is perhaps a consequence of the CCP sites being positioned near the juncture of the Upper and Lower Tonto Basins. Larger human populations and settlements characterize the Classic period in Tonto Basin. Therefore, it seems reasonable to assume that a concomitant increase in the demand for artiodactyl meat, bones, and hides may have occurred.

Previous Research

Using the published reports listed below, faunal ratios and indexes were compiled for the pre-Classic and Classic period faunas. When appropriate, the faunal analysts that worked on these projects calculated riparian (James 1994:313), lagomorph (Bayham and Hatch 1985:207), artiodactyl (Szuter and Bayham 1989:90), and large-game indexes (Szuter and Bayham 1989) (see Volume 2, Chapter 5 for detailed descriptions of these indexes). Generally speaking, greater riparian index values represent a greater number of specimens from riparian creatures from a specific site or project. The lagomorph index is considered to be a good measure of the local availability of cottontails vs. jackrabbits, and it has been used to interpret differences in lagomorph assemblages from Hohokam and Salado sites (Szuter 1991:174–209; Szuter and Bayham 1989:92–93). Artiodactyl and large-game index values measure the relative abundance of artiodactyls to lagomorphs and allow comparisons of the dietary contributions made by these animals (Bayham 1982; Szuter and Bayham 1989:90).

Tonto Basin Lowlands

Ash Creek and FLEX Tonto Basin Projects and Roosevelt Rural Sites Study

These projects are situated near one another in the Lower Tonto Basin and are comparable with respect to the types of sites investigated and their setting. Most of the sites mitigated as part of these projects consist of small farmsteads or hamlets situated on the Pleistocene terraces overlooking the agriculturally productive Tonto Creek floodplain. Many of the sites involved in these projects also share temporal components, and the faunal collections were analyzed in a comparable manner.

Examination of lagomorph ratios suggests that cottontails were more numerous than jackrabbits before A.D. 1200, whereas jackrabbits increased in importance after this time (Bayham and Hatch 1985:207–209). This implies that, prior to A.D. 1200, the local environment supported more perennial shrubs and dense vegetation suitable for cottontails (see discussion on rabbits and hares in Volume 2, Chapter 5). Potential causes for this environmental change include reduced effective annual precipitation, increased human population and subsequent predation, and increased agricultural investment. Bayham and Hatch (1985:209) concluded that increases in the human population of Tonto Basin and the subsequent expansion of intensive agricultural practices best explained the apparent decline in cottontail populations after A.D. 1200.

Based on edible-meat estimates, deer (*Odocoileus* sp.), followed by lagomorphs, provided the bulk of the animal protein at the RRSS sites between A.D. 950 and 1320 (Cairns 1994). As with the Ash Creek collection, the RRSS lagomorph index values indicated a shift in the number of cottontails and jackrabbits, with cottontails having decreased in number around A.D. 1200, whereas jackrabbit populations increased after this time. As identified at the Ash Creek sites, this shift likely signals the degradation of the local environment around A.D. 1200, a probable consequence of increased field preparation in the floodplains. Both the RRSS and Ash Creek Project sites are located in transitional settings situated between lowland and upland resources. These sites were also functionally similar in that they consisted of agricultural sites, field houses, farmsteads, and hamlets.

At Ash Creek and the RRSS sites, examination of lagomorph ratios suggests that cottontails were more numerous before A.D. 1200, whereas jackrabbits increased in importance after this time (Bayham and Hatch 1985:207–209). In contrast, at the FLEX Tonto Basin sites, jackrabbits were the most commonly dispatched leporid species, and there was no significant difference in the number of cottontail remains at sites occupied during the pre-Classic and Classic periods. Cameron (1997a:376, Tables 16.9 and 16.10) speculated that differences in physical setting likely accounted for this, because the FLEX Tonto Basin Project area was located in a relatively flat area, whereas the Ash Creek and RRSS project areas consisted of an often rugged Pleistocene terrace overlooking Tonto Creek. Cameron suggested that these topographic differences best explained the overall greater abundance of jackrabbits at the FLEX Tonto Basin sites when compared to those in the Ash Creek area—an observation that also applies to the RRSS sites. Bayham and Hatch (1985) have also concluded that upland sites in other areas of south-central Arizona with dissected terrain supported greater numbers of cottontails.

The general paucity of artiodactyl remains in the Ash Creek, Flex Tonto Basin, and RRSS collections suggests that few artiodactyls roamed the lowlands. This situation, coupled with the artiodactyl elements identified, suggested that high-meat-bearing elements (e.g., femurs and innominates) were transported back to the lowland sites from kill sites, perhaps from distant upland locales.

Roosevelt Community Development Study

Situated around the southeastern shore of Roosevelt Lake and near many of the RPM sites, the RCD recovered faunal remains from 19 sites representing about 1,200 years of prehistory, starting with the early Ceramic period at A.D. 100 and ending with the early Classic Miami/Roosevelt phases (James 1995). Leporid bones numerically dominated the RCD collections; however, the ratio of cottontails and jackrabbits fluctuated in a pattern nearly opposite to that identified at the Ash Creek and RRSS sites. Lagomorph index values of 0.40–0.43 suggested that cottontails were fairly numerous between A.D. 100 and 850. The index value declined to about 0.30 during A.D. 850–1050, indicating environmental degradation that perhaps favored jackrabbits more. By A.D. 1150, however, conditions changed rapidly, perhaps in response to the development of more vegetative cover, as reflected by a much higher lagomorph ratio of 0.63. The Classic period (A.D. 1150–1350) witnessed a return to conditions similar to the A.D. 100–850 period with an index value of 0.41. James (1995:143–144) cautioned, however, that these fluctuations could be the result of small sample sizes from contexts dating to A.D. 850–1050.

Artiodactyl index values essentially mirrored the lagomorph index values during the early Ceramic and pre-Classic periods; however, a dramatic decline in the availability of artiodactyls appears to have occurred during the early Classic period among the RCD sites (James 1995:145, Figure 20.5, Table 20.25). This decline in artiodactyl populations was a probable consequence of increased human population and hunting pressure, coupled with the settlement history of particular sites. Increased human population and aggregation during the Classic period would have resulted in increased hunting pressure. Similarly, some sites first occupied intermittently during the Colonial or Sedentary periods were occupied permanently during the Classic period. Such prolonged and permanent settlement could very well have contributed to the rapid depletion of local artiodactyl populations.

Riparian index values clearly demonstrated that riparian fauna made dietary contributions during all prehistoric periods but that riparian taxa were most abundant during the transitional Colonial/Sedentary periods (James 1995:146). This prevalence of riparian fauna testifies to the paleoeconomic importance of the riparian resources associated with the Salt River. A radiocarbon date from a corn cupule recovered from the floor of a structure that contained a charred right maxilla from a relatively large Gila coarse-scaled sucker suggests that riparian fauna were collected as early as A.D. 410–540 in the RCD vicinity (James 1995:133).

Roosevelt Platform Mound Study

The RPM faunal collections were distributed among small habitation sites, large roomblock sites, and platform-mound sites and include the largest late Classic period faunas from Tonto Basin (Cameron 1995, 1996, 1997b, 1997c, 1997d, 1997e, 1998). These sites were primarily situated along the Salt arm of the Lower Tonto Basin and consisted primarily of several pit houses during the pre-Classic period and Miami and Roosevelt phases. Large, permanently occupied roomblock sites characterized the Gila phase. Platform-mound sites were occupied during both the Roosevelt and Gila phases, and these sites functioned as either ceremonial centers with few permanent residents, like Pyramid Point, or as primarily domestic sites with as many as 100 permanent residents, such as Cline Terrace and Pinto Point mounds.

The number of specimens assigned to taxon per cubic meter was the primary analytical unit used in the RPM analysis, and pre-Classic period and Roosevelt phase sites yielded the lowest densities for all identified taxa, whereas the larger, Gila phase roomblock and platform-mound sites contained the greatest density of faunal remains. Artiodactyl remains were far more numerous at Roosevelt and Gila phase platform-mound sites, and Gila phase sites contained the greatest diversity of taxa. Cameron (1998:141–142) interpreted these patterns to be a consequence of population aggregation during the Gila phase, which is consistent with the fact that Gila phase sites are larger than earlier Roosevelt phase settlements. The greater number of taxa and increased density of fish, ground-dwelling birds, and rabbits at Gila phase sites signals an increase in diet breadth that was perhaps a response to dietary stress.

Rye Creek Mitigation Project

Eleven of the RCMP settlements, which were established in the Upper Tonto Basin along Hardt Creek, Deer Creek, Clover Wash, and Rye Creek, contained faunal remains. These 11 sites were occupied between A.D. 750 and 1450 and contained a total of 2,785 analyzed faunal specimens that represented a minimum of 24 taxa (Szuter 1992). The Boone Moore site yielded nearly 70 percent of the collection, and it and Rye Creek Ruin produced the greatest diversity of vertebrate taxa. Both sites were occupied during the Classic period.

Low lagomorph index values typified the RCMP sites (Szuter 1992:427), and the hunting of large game was an important activity among some of the RCMP sites. Deer mandibles from newborns to very old individuals indicate that the inhabitants of the Boone Moore site hunted deer during the fall and winter months (Szuter 1992:427, Table 21.9). Similarly, the inhabitants of the Sedentary period Clover Wash site brought deer and also bear (*Ursus* sp.) carcasses back to the site. The large numbers of bone fragments and diversity of vertebrate taxa recovered from these sites suggest that large-game hunting was an important, if not primary, activity for some occupants of these sites.

Tonto Creek Archaeological Project

Located immediately south of the CCP area, 14 of the TCAP sites contained faunal remains (number of identified specimens [NISP] = 2,146) that represented a minimum of 32 vertebrate taxa (Waters 2002). As with the RCD and RPM collections, early Classic period components contributed the greatest number of specimens and taxa, and the TCAP lagomorph index values showed a slight decline over time. This gradual decline may signal slight environmental degradation; however, the use of 1/4-inch screens or perhaps the frequency of communal rabbit drives may have biased against the recovery of cottontail remains.

Based on artiodactyl index values, the inferred availability of artiodactyls increased slightly during the pre-Classic period, particularly when all possible large-mammal bones are considered. This suggests that greater numbers of artiodactyls were available during the Sedentary vs. the Colonial period; a trend also encountered by James (1995) during the RCD and by Cameron (1997b, 1997c, 1997d, 1997e) at ceremonial centers among the RPM sites. As documented for the RPM, RCD, and CCP faunas, the inferred availability of artiodactyls declined dramatically during the pre-Classic–Classic period transition.

Riparian taxa made a minor dietary contribution for the occupants of the TCAP sites based on riparian index values. The inhabitants of the TCAP sites certainly used riparian taxa, but terrestrial species met nearly all of their daily animal-product needs.

Upland Locales

Pine Creek, Mazatzal Piedmont, and SR 87–Sycamore Creek Projects

Faunal remains (NISP = 1,493) were recovered from seven of the Pine Creek Project sites. These sites represent Colonial and Sedentary period occupation of a segment of the Mazatzal Mountains located south of Sunflower and about 60 km northeast of Phoenix (James 1990). Two Sedentary period sites contained 94 percent of the collection, and the bulk of the analysis focused on these two sites. Leporid bones dominated the collections from both sites; however, a relatively large number of artiodactyl remains were also present. Specifically, artiodactyls formed between 40 and 50 percent of the site faunas (James 1990:506). This large number of artiodactyl remains can be interpreted as evidence of intensive upland hunting activities. A general paucity of high-meat-bearing skeletal elements, coupled with the presence of numerous low-utility elements, suggested that the sites may represent upland hunting locales where butchery took place, but the meatier body parts were transported back to lowland village sites.

A total of only 66 specimens from six upland sites were collected as part of the Mazatzal Piedmont Project (Ciolek-Torrello, ed. 1987:399–401). Mazatzal House (NA16,486), which is an early Classic period compound, contained 85 percent of the collection and included reptile, bird, and mammal remains. Indeterminate rodent- or rabbit-sized and large-mammal bone fragments were the most numerous specimens. Two mule deer (*Odocoileus* cf. *hemionus*), three indeterminate leporid, and one jackrabbit bone fragment were also reported. Although the collection was small, it appears that leporids and artiodactyls were the primary game animals sought by the inhabitants of these upland project sites.

A total of 3,313 faunal specimens, which represented a minimum of 21 taxa, was collected from 9 of the 29 SCP sites (Maxwell and Shelley 2003:Table 8.1). These sites date to the Colonial through early Classic periods. Identified temporal patterns were similar to those reported for the Pine Creek sites for the pre-Classic period, with an emphasis on upland game—particularly deer. Long-term environmental stability was inferred based on the taxonomic composition of the faunal collections. The inferred subsistence system in the area of the SCP sites consisted of a distinctive pre-Classic–Classic period emphasis on upland big-game hunting by people who had little interaction with the Hohokam (Maxwell and Shelley 2003:294).

People inhabiting the SCP sites routinely relied on cottontails and deer to meet their animal-product needs. A overall proportion of 45 percent artiodactyl and 55 percent lagomorph remains was calculated for the nine SCP sites that yielded faunal remains (Maxwell and Shelley 2003:289, Figure 100). Significant patterns distinguished the earlier and lower-elevation southern sites from the later and higher-elevation northern sites. Collections from the southern sites contained a greater number of taxa, including the remains of amphibians, reptiles, and birds, and the greatest proportion of leporid remains, including the only jackrabbit bones. Cottontail remains were the only leporid specimens found in the higher-elevation northern sites, which were also distinguished by significantly greater numbers of artiodactyl and large-mammal bones and bone fragments.

Lagomorph index values for the SCP sites range from 0.69 to 0.86, which are exceptionally high values (Szuter 1991:199), and indicate that cottontails were pursued opportunistically in a densely vegetated setting. Maxwell and Shelley (2003:294) suggested that this scenario indicates that leporids did not make a crucial dietary contribution but that artiodactyls were the primary source of dietary protein. Large numbers of artiodactyl remains were recovered from the late Sedentary to early Classic period at the Sunflower Valley and O'Neil Tank sites. These sites, like others identified along Pine Creek, Miami Wash, and in the Upper Tonto Basin, are situated at higher elevations, where preparation for deer hunts and carcass processing were important site activities. Maxwell and Shelley (2003:283) concluded that the inhabitants of the SCP sites relied on the exploitation of deer and cottontail rabbits to a much greater extent than their Hohokam neighbors in the southerly desert basins.

The Globe Highlands and the Miami Wash and SR 88–Wheatfields Projects

Faunal remains were recovered from eight of the Miami Wash Project sites, but only those recovered from the Columbus site, the type site for the Miami phase (Doyel 1978:194–195), are discussed here. The Columbus site is located on a low ridge and overlooks Pinal Creek in the Globe Highlands. Faunal remains from the site consisted of 740 specimens that represented a minimum of 24 taxa (Sparling 1978:Table 41). Deer and leporids dominated the site fauna, forming 22.5 and 19.5 percent of the collection, respectively. Calculation of a lagomorph index value for the site resulted in a value of 0.35, which indicates that cottontails were relatively numerous. The artiodactyl index value was exceedingly high at 0.66 and indicates that the inhabitants of the Columbus site had ready access to artiodactyls. Artiodactyls were certainly the primary meat source for the people(s) who occupied the site between A.D. 1150 and 1200—the primary occupation of the site.

Also located in the Globe Highlands, the SR 88–Wheatfields Project resulted in the analysis of 7,223 faunal specimens from seven sites (Glass 2003:391–420). Analysis of this collection revealed little patterning in faunal indexes over time. For example, artiodactyl index values were 0.03–0.13 and 0.11–0.20 for pre-Classic and Classic period contexts, respectively. The lagomorph index values for the pre-Classic period contexts were 0.60–0.83, and they ranged from 0.34–0.63 for the Classic period contexts. Thus, it appears that artiodactyls contributed more to the overall Classic period diet, and the contribution of cottontails decreased compared to jackrabbits. Regardless, the primary game animals sought by the site inhabitants included deer and rabbits. Cottontail remains, however, were more numerous at pre-Classic compared to Classic period contexts (Glass 2003:420). It is unclear, however, if this was the result of environmental degradation, differences in hunting strategies, or sampling error. That deer remains were relatively common at the project sites is not unexpected, given their upland location. Based on the artiodactyl bones recovered, it appears that pre-Classic period hunters tended to bring only partial carcasses back to their habitations, whereas Classic period hunters more frequently returned with the entire carcass (Glass 2003:417).

Comparison to Phoenix Basin Groups

Located in the Phoenix Basin, the Colonial through Classic period components at Las Colinas contained a total of 10,289 faunal specimens, which represented a minimum of 49 taxa (Szuter 1989:123). Artiodactyls, carnivores, birds, reptiles, and fish were represented. Lagomorph and artiodactyl index values were calculated for each temporal component (Szuter 1989:137). The Colonial period component, which likely represented a small farmstead, had the highest index value at 0.33. This value dropped to 0.24 as the settlement grew during the Sedentary period. Contrary to the hypothesis that continued occupation of a site results in a decrease in the lagomorph index, the index value unexpectedly increased to 0.31 during the Classic period. The relative abundance of artiodactyls followed a similar pattern, with Sedentary–Classic and Classic period contexts having the highest index values (Szuter 1989:Table 8.11). Identified artiodactyl remains consisted primarily of cranial and foot elements.

Also situated in the Phoenix Basin, the Pueblo Grande Project resulted in the collection of 25,858 specimens that represented at least 58 taxa (James 1994:255). The bulk of the collection dated to the Classic period, a time in which people had already overexploited artiodactyl populations along the nearby Salt River. James (1994:250, 316–319) interpreted a dramatic increase in the number of riparian species, compared to collections from earlier time periods, as a response to subsistence stress during the Classic period at Pueblo Grande.

Lagomorphs composed 34 percent of the collection, and the lagomorph index for the Pueblo Grande collection is 0.21, which suggests that relatively few cottontails were available in the local environment. Artiodactyl remains formed just a little over 1 percent of the collection, and nearly half of the artiodactyl remains were made into bone tools. Surprisingly, beaver and muskrat bones were recovered, and fish remains composed 27.5 percent of the vertebrate remains identifiable beyond the level of class. Fish ranked second in dietary importance, exceeded only by lagomorphs, which provided the bulk of the animal protein. The importance of riparian taxa, particularly fish, and the inferred availability of artiodactyls during the pre-Classic–Classic period transition were negatively correlated. For example, the riparian index for the pre-Classic period is 0.08 compared to 0.30 for the early Classic, whereas the artiodactyl index continued a decline that began in the Sedentary period (James 1994:Figure 7.5). James (1994:313) viewed this shift as representing an increase in diet breadth that was likely a response to the overexploitation of locally available artiodactyl populations. This inferred reduction in artiodactyl populations may have led to subsistence stress at the site.

Located along the Salt River below Stewart Mountain, the Water Users Project fauna consisted of 5,519 specimens that represented a minimum of 24 taxa (James 1991:10-2). Most of the collection dated to the Colonial period. Lagomorphs accounted for about 45 percent of the identified remains and represented the primary source of meat, fat, and furs. A lagomorph index value of 0.36 can be calculated from the data presented by James (1991:Table 10.1). Artiodactyl elements formed only 3.4 percent of the collection and represented both deer and bighorn sheep. Computing the artiodactyl index value for the Water Users Project results in a surprisingly low value of 0.07. Rodent bones were the second most numerous category of specimens, which even included the remains of muskrat (*Ondatra zibethicus*) and beaver (*Castor* sp.). Fish bones were the third most numerous category of specimens and composed 12.6 percent (NISP = 443) of the collection. Other identified riparian taxa included Sonoran mud turtle (*Kinosternon* sp.) and raccoon (*Procyon lotor*). It appears that the Colonial period occupants of the Water Users site routinely hunted lagomorphs and collected fish, but artiodactyls appear to have been rarely encountered.

The Verde Bridge Project excavations at the multicomponent site of La Escuela Cuba resulted in the recovery of 894 faunal specimens that represented a minimum of 17 taxa (James 1992:294, Table 13.1). People occupied La Escuela Cuba from A.D. 200–1100, but most of the faunal remains dated to the Sedentary period. Lagomorphs numerically dominated the project fauna, regardless of archaeological period. The first exploitation of riparian taxa appears to have taken place during the Colonial period (James 1992:307). Identified riparian taxa included beaver, fish, and Sonoran mud turtle. A greater number of specimens from riparian taxa were recovered from Sedentary period contexts; however, lagomorphs still provided the bulk of the meat diet.

Prehistoric Hunting

Several past studies have identified differences in lowland vs. upland faunal-procurement strategies. In particular, many upland sites surrounding Tonto Basin likely functioned as large-game-hunting staging loci (James 1990; Maxwell and Shelley 2003) similar to some sites identified in the Hohokam core area (James 1994). These studies also indicate that a greater number of taxa were pursued during the Classic period in the Lower Tonto Basin (Cameron 1998:142), at Pueblo Grande (James 1994:313), and along the lower Salt River (James 1991:10-2). The greater number of taxa and increase in the remains of fish and ground-dwelling birds at Gila phase sites likely signals dietary stress in response to overhunting near these larger lowland settlements (James 1995:145).

The prolonged settlement of the Lower Tonto Basin should have had striking environmental ramifications compared to the less intensively occupied upland locales. Widespread declines in lagomorph and artiodactyl index values perhaps signal the point at which significant changes in local environments occurred (Szuter 1991:174–209; Szuter and Bayham 1989:90–93; Waters 2002:752) (see Volume 2, Chapter 5). Cultural modifications to the environment would have included field preparation, village construction, gathering firewood, and the use of fire to retard plant succession and promote the growth of economically important weedy annuals such as little barley, cheno-ams, amaranths, or tansy mustard. Most upland settlements in the study area consisted of small hamlets, farmsteads, or limited-activity loci. The occupants of these upland sites routinely hunted cottontails and artiodactyls, which were apparently present in greater numbers when compared to the areas surrounding the larger, lowland villages. It appears, therefore, that site location largely determined which animals were most available and which animals were most often hunted. With these insights in mind, general patterns in faunal use are summarized below by physiographic region and temporal period. These discussions focus on basic trends and are not meant to be exhaustive treatments. Projects conducted in the Tonto Basin lowlands are discussed first, followed by projects involving upland locales and projects in the Hohokam core area.

Pre-Classic and Classic Period Hunting Patterns

Lowlands, Pre-Classic to Transitional to Early Classic Period

Rabbits and hares undoubtedly provided an invaluable source of meat, fat, and furs throughout the Tonto Basin lowlands. These creatures could be obtained in a number of ways by most of the population. Jackrabbits appear to have been particularly important, and lagomorph index values for lowlands projects show a consistent decline over time, indicating that proportionately more jackrabbits were hunted over time in comparison to cottontails.

Deer were the primary large-game animal sought by the prehistoric peoples of Tonto Basin. They likely provided the bulk of the animal protein and provided skins for clothing and bone and antler for tools, ornaments, and ritual paraphernalia. The artiodactyl elements identified suggested that high-meat-bearing elements (e.g., femurs and innominates) were transported back to the lowland sites from kill sites, perhaps from distant upland locales. The overall pattern among lowland sites is a continued increase in the number of artiodactyl bones from sites dating to the pre-Classic period and a dramatic decline during the Miami phase, followed by a dramatic increase during the Roosevelt and Gila phases. This pattern is more evident when all possible large-mammal bones are used to calculate a large-game ratio. Overall, lowland projects indicate that more artiodactyls were available during the Sedentary vs. the Colonial period. This pattern is consistent with the data from the CCP.

Lowlands, Early–Late Classic Period

Pre-Classic period and Roosevelt phase contexts at the RPM and RCD sites yielded the lowest densities for all identified taxa, whereas the larger Gila phase roomblock and platform-mound sites contained the greatest density of faunal remains. Artiodactyl remains were far more numerous at Roosevelt and Gila phase platform-mound sites, and Gila phase sites contained the greatest diversity of taxa. Cameron (1998:142) interpreted this pattern as a consequence of population aggregation during the Gila phase, which would explain why Gila phase sites were larger than earlier Roosevelt phase settlements. Even though artiodactyl remains are numerous at sites dating to this interval, the greater number of taxa and increased density of fish, ground-dwelling birds, and rabbits at Gila phase sites signals an increase in diet breadth that was perhaps a response to dietary stress.

Uplands, Pre-Classic to Transitional to Early Classic Period

Hunting in the uplands between the Colonial and early Classic periods focused on deer and cottontail rabbits, and sites situated in the uplands generally contained significantly more deer bones compared to lowland sites. The large number of artiodactyl remains at many upland sites appears to indicate that upland-hunting activities were practiced by lowland villagers. A general paucity of high-meat-bearing skeletal elements, coupled with the presence of numerous low-utility elements, suggests that the sites may represent upland hunting locales where butchery took place, but the meatier body parts were transported back to lowland villages.

Identified temporal patterns among the Pine Creek and SCP sites are very similar, indicating an emphasis on upland game—particularly deer—during the pre-Classic period, Miami phase, and early Classic period (James 1990; Maxwell and Shelley 2003). Long-term environmental stability at these locations can be inferred based on the taxonomic composition of the faunal collections. The inferred subsistence system in these areas consisted of a distinctive pre-Classic–Classic period emphasis on upland big-game hunting, perhaps by people who had little interaction with the Hohokam (Maxwell and Shelley 2003:294).

People inhabiting upland sites routinely relied on cottontails and deer to meet their animal-product needs. Lagomorph index values for these sites typically range from 0.60 to 0.80, which are exceptionally high values, indicating that cottontails were pursued opportunistically in a densely vegetated setting (Szuter 1991:199). Maxwell and Shelley (2003:294) have concluded that this scenario indicates that leporids did not make a crucial dietary contribution and that artiodactyls were the primary source of dietary protein at upland sites where deer hunts and carcass processing were important site activities. This is supported by the exceptionally high artiodactyl index values commonly reported for upland sites. For example, tabulating an artiodactyl index for the Columbus site, the type site for the Miami phase (Doyel 1978:194–195), produced an exceptionally high value of 0.66. Similarly high values have been reported from the SCP and Pine Creek sites, and it appears that artiodactyls were certainly the primary meat source for the peoples that occupied these areas during the pre-Classic, pre-Classic–Classic transition, and Classic periods.

Overall, deer remains were relatively common at these project sites, which is not unexpected given their upland location. Based on the artiodactyl bones recovered, it appears that pre-Classic period hunters tended to bring only partial carcasses back to their habitations, whereas early Classic period hunters more frequently returned with the entire carcass (Cameron 1998; Glass 2003; Waters 2002).

Comparisons with the Phoenix Basin

During the Colonial through Classic period, lagomorph and artiodactyl index values from large villages such as Las Colinas follow closely those reported for the Tonto Basin lowlands over time. The general trend in the Phoenix Basin over time is a general decline in lagomorph index values, coupled with an intriguing increase in artiodactyl remains in Sedentary–Classic and Classic period contexts (Szuter 1989:Table 8.11). The increase in artiodactyl remains is likely a response to human population being concentrated in larger, lowland village sites during the Classic period. As such, more artiodactyl bones tended to be brought back to these sites compared to earlier and smaller settlements.

Of particular interest at Las Colinas, Pueblo Grande, and many of the platform-mound communities in Lower Tonto Basin is the fact that over 50 taxa are commonly represented in the collections. Ground-dwelling birds, riparian taxa, and fish increased in importance at these Classic period villages. Fish were particularly important along the lower Salt River during the pre-Classic period at the Water Users sites and at La Escuela Cuba along the Lower Verde River. This apparent broadening of the diet, starting as early as the Sedentary period, can be interpreted as a response to subsistence stress in both the Phoenix and Tonto Basins. Evidence for this in the Phoenix Basin can be found in the fact that the importance of riparian taxa, particularly fish, and the inferred availability of artiodactyls during the pre-Classic–Classic period transition were negatively correlated at Pueblo Grande (James 1994:Figure 7.5). It appears, therefore, that this shift represents an increase in diet breadth in response to the overexploitation of locally available artiodactyl populations. Similarly, Gila phase villages in Lower Tonto Basin also contain the remains of far more taxa compared to earlier settlements, and fish and riparian taxa increased in importance.

Summary and Conclusions

For the CCP sites, the range of subsistence strategies practiced included low levels of floodwater farming of maize, cotton, and little barley, and dryland farming of agave stands. The plant record suggests that the pre-Classic period CCP farmers were primarily sedentary, farming both cool- and warm-season crops, and gathering cool- and warm-season wild plants of the area. In contrast, the Miami phase CCP farmers focused heavily on growing warm-season maize and cotton, allowing them increased mobility during the other seasons of the year. This pre-Classic–early Classic period subsistence shift is characterized by a declining emphasis on wild plants and indigenous, managed resources and an increasing emphasis on maize and cotton crops. This shift suggests increasing efforts to intensify production of a small number of the most-dependable agricultural crops. Some level of local landscape disturbance in areas, such as agricultural fields, is suggested by the frequent recovery of weedy plants, including cheno-ams.

The CCP sites can be examined within a regional framework. An extensive archaeobotanical record from 12 archaeological projects in Tonto Basin and surrounding region reveals important patterns associated with the lowlands and uplands during the pre-Classic period, the Miami phase, and through the Classic period. These projects include sites ranging from platform mounds to field houses, with variability in sample size, features sampled, sample-collection strategies, and sample analysis and presentation. Despite these differences, robust subsistence patterns are evident.

In the lowlands of Tonto Basin, irrigation agriculture was a focus along both the Salt River and Tonto Creek. Warm-season maize, beans, squash, and cotton were important crops, eventually supplemented with grain amaranth. Lowland groups also managed indigenous cool-season crops, including little barley, agave, and cholla. Little barley could have been broadcast onto the broad alluvial floodplains, and agaves and chollas could have been transplanted close to hamlets and villages. In contrast, groups in the uplands practiced a varied subsistence economy that included farming of smaller floodplains and of rain-fed fields, and of reliance on wild plants. Agave and little barley use in the uplands was variable.

Most lowland and upland groups appear to have been fairly self-sufficient and responsible for growing and gathering the bulk of their foods. In both the lowlands and the uplands, there seems to have been little use of plants from nonlocal areas. The only significant travel for nonlocal resources occurred occasionally for upland-conifer construction timbers. The majority of Tonto Basin foods, including Mesoamerican domesticates, indigenous domesticates, and wild foods, are shared in common with Hohokam groups to the south. The most notable differences are the low level of recovery of evidence of mesquite pod and saguaro fruit use in Tonto Basin and surrounding uplands, given that they are so common elsewhere in the Sonoran Desert.

Shifts through time in subsistence emphasis occurred in both the lowlands and in the uplands. The shift seems to have started in the Miami phase, based on evidence from the CCP, and included a reduction in food diversity. In the lowlands, reliance on a diversity of agricultural and wild-plant resources was replaced by a focus on two or three staple crops (maize and/or cotton and/or agave). At times, the shift was toward use of agricultural field weeds and other wild plants. Little barley decreased in most locations except for a few within the Tonto Creek area. In the lowlands, the single project (RPM) with good late Classic period subsistence information experienced little change in reliance on staple crops between the Roosevelt and Gila phases. In the uplands, the shift to a reduction in food diversity also started in the Miami phase, based on evidence from the SCP project. In some upland locations, the shift was toward greater use of wild plants and a decreasing emphasis on growing crops. In other upland locations, reliance on both agricultural and gathering efforts continued. The diversity of subsistence strategies practiced in the uplands in the Miami and Roosevelt phases suggests groups were focusing on the strategies that worked best for their particular locations.

Patterns identified in the CCP fauna are mainly consistent with those identified by past Tonto and Phoenix Basin projects—particularly concerning the aboriginal use of leporids and artiodactyls. Classic period hunters in the Tonto Basin and Hohokam core area dispatched fewer cottontails and artiodactyls compared to their predecessors or contemporary upland populations. Explanations for this include the effects of increased human population and overhunting, along with extensive cultural modifications to lowland, riverine environments. Many upland sites were seasonally occupied farmsteads or limited-activity loci that often functioned as staging areas for big-game hunting. The environments surrounding these upland sites most certainly supported larger artiodactyl populations and more cottontails in comparison to jackrabbits.

Based on lagomorph index values, cottontails were fairly abundant in the Lower Tonto Basin around A.D. 800. Their numbers declined by A.D. 900, but then rose dramatically by A.D. 1150. Lagomorph index values were also highest during the Colonial period at the Water Users site (James 1991:Table 10.1) and Las Colinas (Szuter 1989:137). Cottontail populations then plummeted during the pre-Classic–Classic period transition; a pattern similar to that identified in the CCP fauna, which dates primarily to the Miami phase. A prolonged decline in the inferred availability of cottontails starting during the Miami phase and culminating during the Classic period was documented at the FLEX Tonto Basin, RRSS, RPM, and TCAP sites south of the CCP area. Examination of faunal collections from Pueblo Grande also indicated that cottontails were rare compared to jackrabbits during the Classic period, although the exact opposite scenario typified the collection from nearby Las Colinas. Therefore, settlement history may not play as large a role in the availability of cottontails vs. jackrabbits as previously thought.

Lagomorph index values were higher at upland sites during all archaeological periods. This suggests that cottontails were more numerous in these upland settings and were hunted more frequently. The greater vegetative cover that characterizes the upland environment, coupled with a smaller human population, most likely explains the differences between lowland and upland sites reflected in their lagomorph index values. Overall, the sites investigated as part of the Pine Creek Project, Miami Wash Project, SCP, and SR 88–Wheatfields Project represent significantly smaller settlements than the Classic period platform-mound communities of the Tonto and Phoenix Basins. The extensive agricultural systems that supported these large villages would have also reduced the amount of vegetative cover preferred by cottontails.

Artiodactyl index values in the Lower Tonto Basin followed the lagomorph index values during the early Ceramic and pre-Classic periods; however, a dramatic decline in artiodactyls occurred during the Miami and Roosevelt phases at the RCD, RPM, and TCAP sites. This scenario contrasts sharply with the upland regions, where artiodactyl remains actually increased in number at the Pine Creek sites and in the Upper Tonto Basin among the RCMP sites during the Sedentary period. This potential increase in artiodactyl availability during the Sedentary period at the TCAP and RCMP sites did not involve the RPM sites, where the artiodactyl index actually declined in the Sedentary period. These results perhaps suggest that the Upper Tonto Basin afforded better artiodactyl habitat and that big-game hunting was more profitable in the Upper Tonto Basin during much of the pre-Classic period. Big-game hunting continued to increase in importance at upland sites during the Classic period.

Artiodactyl bones and bone fragments at pre-Classic and Classic period upland sites consist primarily of low-utility skeletal elements, which suggests that the meatier segments of the carcasses were transported elsewhere—likely to lowland villages. The presence of both low- and high-utility skeletal elements at the CCP site of the Vegas Ruin and at many of the TCAP, RCD, and RPM sites supports the inference that people occasionally processed complete carcasses at lowland villages. What is unclear, however, is whether the occupants of lowland villages primarily hunted artiodactyls themselves or regularly traded for carcasses and hides with upland groups. Larger proportions of high-utility elements at Roosevelt phase platform-mound communities does suggest the transport of high-utility segments of the carcass and possible trade. Overall, lowland populations in Tonto and Phoenix Basins likely hunted artiodactyls in the lowlands and uplands whenever possible, because artiodactyls contributed the greatest amounts of dietary protein, workable bone, and hide.

Riparian taxa were also sought by prehistoric people in the Tonto and Phoenix Basins but to a much lesser degree than terrestrial taxa. Very few specimens representing riparian taxa, primarily fish bones and Sonoran mud turtle carapace fragments, were collected as part of the CCP and TCAP projects (see Volume 2, Chapter 5; Waters 2002:Tables 13.6 and 13.9). The almost exclusive use of 1/4-inch screens has likely resulted in the underrepresentation of fish remains in faunal collections from sites in the Southwest (Casteel 1972; James 1994). This aside, significant patterns in the exploitation of riparian resources are evident when the regions are compared. Archaeologists have recovered relatively few faunal remains from riparian creatures in Tonto Basin, but it does appear that riparian taxa were more available along the Salt River arm vs. the Tonto Creek arm of Tonto Basin. Riparian taxa would have been less plentiful along Tonto Creek because of its lower annual flow; a situation that likely existed throughout the Formative period (Waters 1998:23–28). Riparian index values generally declined over time throughout Tonto Basin; however, fish were routinely captured by the Colonial period occupants of the Water Users sites and by Sedentary period people living at La Escuela Cuba in the Phoenix Basin. Similarly, riparian taxa were vitally important to the Classic period inhabitants of Pueblo Grande, where fish were the second most important source of animal protein, exceeded only by leporids.

Analysis of the CCP fauna indicates clearly that jackrabbits and artiodactyls were regularly available to the Miami phase occupants of the Vegas Ruin and the Crane site. In comparison, the Roosevelt and Gila phase occupants of the larger villages situated in the Lower Tonto Basin and Phoenix Basin relied on a greater variety of animal taxa. This broadening of the subsistence base may signal a response to the overexploitation of locally available artiodactyl populations that led to dietary stress among the Classic period peoples of the Lower Tonto Basin. Plant and animal remains alone, however, cannot be easily used to distinguish whether the inclusion of new animal taxa in the Classic period diet was the result of overhunting, environmental degradation, or population movements.

CHAPTER 6

SR 188–Cottonwood Creek Project Mortuary Practices and Society

Chris Loendorf

This chapter summarizes aspects of mortuary practices and presents a quantitative analysis of variation in burial treatment among interments recovered as part of the CCP. Skeletal remains from 46 individuals were identified at three sites during Phase 1 and Phase 2 data recovery investigations, 45 of which were excavated. Burial features were identified within the project ROW at the Vegas Ruin (AZ U:3:405/2012) (n = 38), the Crane site (AZ U:3:410/2017) (n = 7), and at AZ U:3:408/2015 (n = 1). One of the burials identified at the Vegas Ruin extended under the roadbed and was not excavated; this burial (Feature 187) was excluded from the mortuary analysis. Detailed descriptions of the burial features at these sites can be found in Volume 1.

Patterning in the CCP collection is compared and contrasted with data obtained during excavations conducted as part of the RPM in Tonto Basin. CCP excavations resulted in the recovery of burial data from small residential sites that were abandoned prior to the late Classic period. The RPM investigations sampled a wider range of site types, including small residential compounds that are similar to the CCP sites, large roomblock sites, and integrative sites such as platform-mound villages. The RPM sample includes both early and late Classic period burial assemblages, whereas the CCP assemblage does not include late Classic period interments. The quantitative analysis presented in this chapter primarily focuses on synchronic variation in burial treatment. Early Classic period burials from the CCP sites are compared and contrasted with early Classic period interments from RPM sites.

Appendix C lists the 525 interments that were examined in this analysis. Vandalism and extensive prehistoric disturbances were common at the RPM sites, and only 269 of the 479 individuals that were recovered during the project lacked these types of disturbances. Further, burial vandalism was particularly severe at late Classic period sites. Although 93 late Classic period unvandalized burials were excavated as part of the RPM, these features were largely juvenile burials from below room floors or interments from isolated areas that were not part of central cemeteries at sites. These factors complicate characterization of late Classic period burial practices in Tonto Basin; however, it is still possible to observe a number of similarities and differences in burial treatment between the early and late Classic periods.

The Tonto Basin-Globe-Miami region is generally considered to be the heartland of the Salado (e.g., Doyel 1976b; Gladwin and Gladwin 1935; Wood 1983, 1986). This area has therefore played a central role in debates concerning the “Salado culture concept” (Ciolek-Torrello 1987c; Doyel and Haury 1976; Lekson 1992). Although the cultural affinity of the Salado is an important issue, detailed discussion of the nature and validity of the Salado phenomenon is beyond the scope of this chapter, and the term “Salado” is used here simply to refer to the Classic period inhabitants of Tonto Basin.

Considerable variation has previously been identified in Salado mortuary practices (Crown 1994:201; Doyel and Hoffman 2003c:61; Hall et al. 2001; Hohmann 1985, 1992; Hohmann, ed. 1985; Hohmann and Kelley 1988; Loendorf 2001; Rice 1990c). Differentiation in Salado mortuary treatment is apparent within sites, among sites and regions, as well as through time. Recognition of this variability has engendered considerable debate concerning its implications for understanding social structure. Until recently, researchers investigating social organization in prehistoric Tonto Basin could be divided into two groups: those who viewed variability in Salado burial practices as evidence for regional integration and unitary social hierarchies and those who suggested that Salado mortuary treatment most closely reflects an egalitarian form where differential recruitment to social positions is explained by an individual’s personal abilities and the biological parameters of age and sex.

In the late 1980s, all but the most polemic archaeologists on both sides of this debate realized that these two simplistic models were equally untenable (Kintigh 1998). Nevertheless, the debate has continued and remains largely unresolved (McGuire and Saitta 1996:197). The focus of this debate, however, has largely shifted toward discussion of the strategies prehistoric leaders used and the basis for control of ritual knowledge in Southwestern societies (Kintigh 1998). Many recent characterizations of social organization in the prehistoric Southwest (Howell 1996, 2001; Kintigh 1998; Loendorf 2001; McGuire and Saitta 1996; Mitchell and Brunson-Hadley 2001) have suggested that hereditary power and authority existed but were balanced by a strong communal ideology that limited the extraordinary accumulation of wealth or power by any individual or group of individuals.

Social Organization Dimensions

The analysis of Salado social organization presented in this chapter uses two primary assumptions. First, formal cemeteries for the disposal of the dead are generally associated with social units such as corporate groups, and these groups had collective rights (probably land-use) that were maintained through ancestral ties (Charles and Buikstra 1983:117; Goldstein 1981; Saxe 1970:119). Second, variability in the treatment of deceased individuals is related to their social standing in life (Binford 1971; Carr 1994; O'Shea 1984; Ravesloot 1988:15; Saxe 1970; Tainter 1978). This assumption is based on the ethnographically attested relationship between social organization and burial treatment and provides a way to link aspects of social organization to variability observed in mortuary treatment. The relationship between grave goods and social status is complex, however, and the people buried with greater quantities of grave goods were not necessarily a higher rank or class.

Archaeological mortuary analyses generally use the hypothesis that the treatment of the deceased reflects the social standing of the person in life. Binford (1971:23), for example, argued that "the form and structure which characterizes the mortuary practices of any society are conditioned by the form and complexity of the organizational characteristics of the society itself." This important premise has been established through ethnographic research and used to interpret ethnographic and archaeological data sets. Burial accompaniments, context (location and grave type), postmortem body treatment (pigments, orientation, wrapping, and position), and aspects of the skeletal remains themselves have all been used to infer facets of prehistoric social organization (Doyel and Hoffman 2003c:61; Effland 1988; Hohmann 1985; Mitchell 1989:290, 1994a, 2003; Whittlesey 1978; Wilcox 1987).

Most archaeologists consider sociopolitical complexity as a dimensional phenomenon, with multiple aspects that do not necessarily vary in concert (Blanton et al. 1981:21–22; Braun 1981; Gumerman et al. 1994:8; McGuire 1983:100–105; Nelson 1995:599; Ravesloot 1988:68). Therefore, in any investigation it is necessary to specify the particular dimensions of social complexity that are to be modeled (Nelson 1995:599).

This analysis considers three cultural facets that may have been central factors in social organization. These interrelated issues are economic differentiation, political control, and social status. These factors have been characterized as different types of power by some, and numerous researchers have stressed the heuristic importance of one or more of these elements. The data presented here suggest that separate aspects of Salado burial treatment are more closely related to different dimensions of social organization. Quantitative and ethnographic data suggest that vessel accompaniments are more closely associated with the social relationships of the deceased, whereas most non-vessel artifacts appear to be better indicators of personal wealth of the deceased. A third aspect of burial treatment (symbols of authority) may more closely reflect political authority (Loendorf 2001).

CCP Mortuary Practices

The following sections consider aspects of mortuary practices observed in the CCP burial collection. Because excavations were restricted to the ROW, the sample of burial features we investigated during the CCP may not represent the entire assemblage of burial features that was originally present at any of the sites. However, a relatively large combined sample of burials was collected from the Vegas Ruin and Crane site, so it is possible to suggest the range of variation in burial treatment at these sites. These observations are compared and contrasted with burial data from RPM excavations in Tonto Basin.

Disturbances

Disturbance to burial contexts resulted from both prehistoric human activities and natural postdepositional processes. In contrast to most prehistoric sites in Tonto Basin where pothunting has extensively destroyed cultural resources, none of the burials in the CCP collection was impacted by looting. Pothunting was also minimal throughout the TCAP area (Hall et al. 2001:22). The proximity of these sites to a major thoroughfare makes it difficult to conduct illicit excavations without detection, which probably accounts for the lack of substantial looting at these sites.

Only 3 of the 46 burials (6.5 percent) identified during the CCP investigations were disturbed prehistorically. The low incidence of prehistoric disturbance contrasts with some other sites in Tonto Basin where, for example, more than 40 percent of the burials were impacted by prehistoric disturbances (Loendorf 1996a). Cemeteries with the most severe disturbances were located at sites that continued to be occupied during the late Classic period, suggesting that much of the variation in the degree of prehistoric disturbance may relate to the length of time over which cemeteries were used.

Form of Interment

Interments identified during the CCP consist exclusively of inhumations. Individuals were largely placed in an extended supine position with the arms frequently positioned along the body. Other burial positions were rare.

Inhumation was the predominant or exclusive method of interment at Salado sites throughout Tonto Basin (Doyel 1978; Hall et al. 2001; Hartman 1987; Hohmann 1985, 1992; Loendorf 1996a, 1997a, 1997b, 1997c; Ravesloot 1994). By the advent of the early Classic period, cremation was practiced for only a small segment of the population and appears to have occurred at only a few sites that also had large inhumation cemeteries. A limited number of early Classic period cremation cemeteries have been identified in Tonto Basin; one was present at the Schoolhouse Point site (Loendorf 1996a), a similar cremation cemetery was found at the Bass Point Platform Mound (Loendorf et al. 1995), and early Classic period cremations also were found at the Meddler Point Mound (Swartz et al. 1995). Cremation appears to have been virtually discontinued by the late Classic period (Loendorf 2001:127).

Burial Locations

Salado burials in the Lower Tonto Basin were usually placed in formal cemeteries (i.e., in burial pits that were generally evenly spaced and arranged in rows). Cemeteries in Tonto Basin are frequently located within walled areas of the site that were not roofed. Nearly half of the inhumations at the Vegas Ruin, however, appear to be outside walled areas, and other large cemeteries in Tonto Basin have been found outside compounds (Doyel and Hoffman 2003c:61; Hall et al. 2001; Loendorf 1996a; Ravesloot 1994). Interments were also occasionally placed in the fill of abandoned pit houses or middens (Doyel 1978; Doyel and Hoffman 2003c:61; Hall et al. 2001; Hohmann, ed. 1985; Loendorf 2001), as represented by several inhumations at the Vegas Ruin.

Burials placed below the floors of occupied rooms were not identified during the CCP, and it appears that inhumations were rarely intentionally placed below room floors during the early Classic period throughout the lower basin. Subadult burials excavated during the CCP were found in the same burial areas as adults, but age related variation in burial treatment is present, as discussed further below.

Juvenile burials, however, were commonly interred below occupied rooms during the late Classic period, and some rooms had large numbers of infants buried below the floor (Loendorf 1996a). Late Classic inhumations that were placed below room floors were generally infants less than 1 year old, and these individuals were usually not interred with any accompaniments.

Form of Grave Facility

Burial facilities in Tonto Basin exhibit substantial variation in form (Loendorf 2001). The morphology of burial pits appears to have been conditioned, in part, by the nature of the underlying geologic deposits (Loendorf 1996a). Some sites with similar substrates, however, had different forms of burial facilities, and there is variation in burial pit forms within a given site, as is the case at the Vegas Ruin. Forms identified at this site include simple U-shaped subrectangular pits, stepped pits, and pits with undercut sides.

Undercutting of one or more sides of the pit was one of the more common attributes of subrectangular pits (Hall et al. 2001:24). Even pits with generally straight walls frequently belled out slightly at the base. In some cases, the undercutting was pronounced, creating an alcove or chamber on the side of the burial pit where the inhumations were placed. Pieces of wood found in one of the undercut pits (Feature 145) at the Vegas Ruin suggest that, in at least some instances, wood was used to close and/or support the undercut pit edge. In some examples, the base of the alcove was at the same depth as that of the main shaft. In other cases, the base of the alcove was deeper than the bottom of the main shaft.

The long-axis side of subrectangular pits was sometimes stepped inward (Hall et al. 2001). There also were examples where both sides of the pit were stepped. The inward setting created benches, and in at least some instances, wood was laid across the step or steps to cap the burial below. The preservation of organic materials was generally very poor. In those instances where wood was observed, the wood usually consisted of small isolated fragments, and it is unclear if wood was used in all of the stepped or undercut pits.

Orientation

Orientation data was recorded for 41 of the CCP inhumations. Approximately eastern head orientations were by far the most common; 33 individuals had orientations between

66° and 114°. The mode was 93° with 6 individuals, and 15 individuals had orientations between 89° and 97°. A single individual with a roughly northern orientation (18°) was identified. Seven individuals had roughly western orientations (between 241° and 289°).

In historic Pueblo mortuary practices, head orientation reflects the direction toward the land of the dead (Ellis 1968:64; Merbs and Brunson 1987; Parsons 1939:70; Tyler 1986:54). Based on the observation that individuals in the same cemetery tended to have similar head orientations, Hohmann (1992:492) suggested that body orientation relates to kinship and/or societal divisions. There appears to be a similar pattern for the CCP interments and in the RPM assemblage where burials in a given location were largely oriented in one direction; a small subset of individuals exhibited head orientations that were roughly 180° opposite of the majority (Loendorf 1996a, 1997c).

Early Classic period inhumations in the Lower Tonto Basin were generally placed with the head to the east, but individuals with roughly northern, southern, and western orientations have been recorded (Hall et al. 2001:24–25; Loendorf 2001). By contrast, all but two of the late Classic period extramural inhumations from residential compounds excavated at RPM sites had roughly eastern head orientations (Loendorf 2001). A significant difference (chi-square, $p < .01$) was identified between early and late Classic period head orientations for extramural burials from the Schoolhouse Point site (Loendorf 1996a). If orientation was related to kinship and/or societal divisions, then the greater uniformity in head orientation observed for late Classic period burials suggests an increased level of societal integration. Head orientations of late Classic period interments at Cline Terrace Platform Mound, however, differed from contemporaneous burials at residential sites and instead were almost evenly distributed between the four intercardinal positions, suggesting greater social diversity (Loendorf 2001:127).

Burial Accompaniments

A relatively limited range of ornamental grave goods were interred with Salado burials, and many utilitarian artifacts that were commonly recovered from habitation contexts were rarely associated with interments. Artifact types that were common in habitation contexts but rarely (or never) intentionally associated with burials include metates, manos, tabular knives, polishing stones, shaft straighteners, hammer stones, flaked or ground stone axes, unifaces, flakes, and cores. With the prominent exception of ceramic vessels and projectile points, most of the items commonly associated with burials were nonutilitarian artifacts, largely ornaments. Ceramic vessels, projectile points, shell or stone ornaments, bone awls/hairpins, ceramic or stone disks, crystals, pigments, ceramic or stone effigies, painted baskets, and painted sticks were sometimes associated with Salado burials.

Ceramic vessels were the most common funerary accompaniment in the CCP sample and were generally placed with inhumations (89 percent had 1 or more vessels). Substantial variation, however, exists in the numbers (counts ranged from 0 to 18 for the CCP interments) and types of ceramics placed with Salado inhumations both within and among different cemeteries. Whole vessels were generally placed around inhumations and were rarely placed atop the body. Ravesloot suggested that ceramic vessels "held offerings of food and water that were buried with the deceased for the journey of death to the future world" (Ravesloot 1994:841). This interpretation is reasonable; however, the position of some vessels (e.g., closely nested vessels) suggests that some could not have held offerings. One possibility to account for the presence of these vessels is that they may have been used in the mortuary ritual and subsequently included with the interment.

Red-slipped vessels were the most common ceramic type, and bowls were more prevalent than jars (Figure 59). See Chapter 4 for a detailed discussion of ceramic vessels in the CCP burial collection. Substantial variation exists in vessel frequencies for assemblages collected from different portions of Tonto Basin (Hall et al. 2001:27–28; Loendorf 2001). Figure 60 shows percentages for vessel types associated with early Classic period interments in the RPM and CCP collections. Red ware bowls are more common in the CCP assemblage, and plain wares are less common than in the RPM collection. The CCP collection and the RPM sample from the Tonto arm of the basin have similar proportions of vessels with painted designs, whereas the RPM collection from the Salt arm of the basin has the highest proportion of this vessel type. Corrugated vessels appear to be more common accompaniments in the Tonto arm of the basin; both the CCP collection and the RPM collection from the Tonto arm have higher proportions of this vessel type.

An examination of the source of these funerary objects is a fundamental issue that may provide insight into patterning within the burial assemblage. Do these artifacts represent items manufactured specifically for use in burial rituals, personal possessions of the deceased, and/or offerings brought by friends and relatives? Each of these possibilities has different implications for the interpretation of patterning in the burial assemblage. They are not mutually exclusive, however, and support is presented below for the latter two possibilities. It is unlikely that most accompaniments were made specifically for use in funeral ceremonies, because many of the burial assemblage artifacts have evidence of use wear, including artifacts that broke prehistorically (Loendorf 1997b). Further, with the exception of painted sticks and eccentric vessels, artifact types in the burial assemblage were recovered from a variety of contexts, including house floors and midden deposits, suggesting that their use was not restricted to burial rituals. Similarly, Heckman demonstrates in Chapter 4 that the burial vessel collection is representative of the smaller vessels found in typical domestic contexts at the CCP sites.

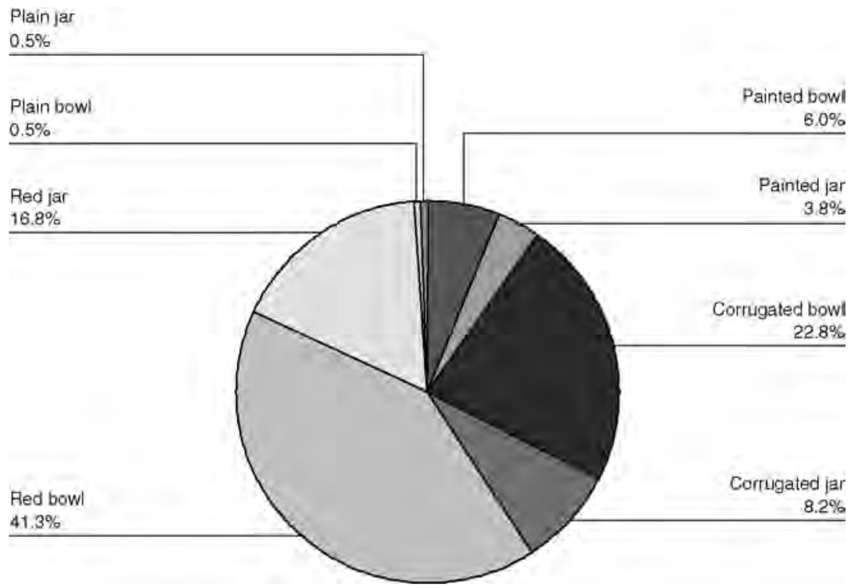

Figure 59. Vessel surface treatment proportions, CCP burial assemblage.

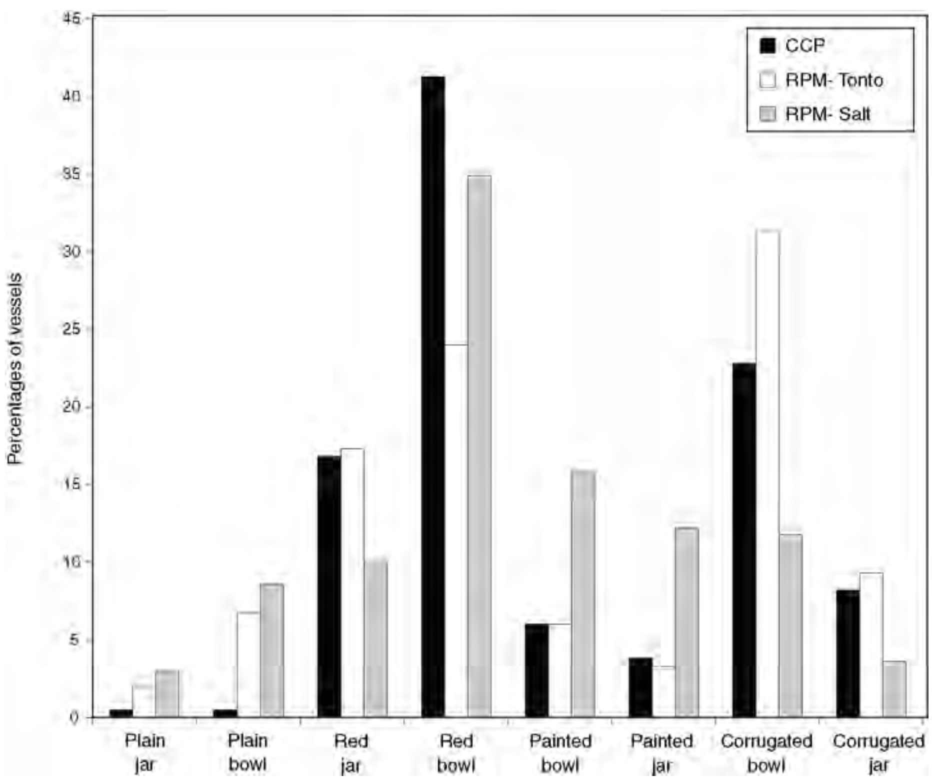

Figure 60. Vessel surface treatment, CCP and RPM burial assemblages.

Quantitative Methods

Quantitative variation in Classic period mortuary behavior is examined using exploratory data analysis (EDA) techniques and bivariate statistical procedures. The EDA approach emphasizes visual displays of data rather than summary statistics derived from the assemblage (Shennan 1990:22). EDA techniques are used in this analysis, because the burial data do not conform to assumptions underlying many summary statistics. Furthermore, in contrast to many other statistical analyses, this research is directed toward the identification of outliers in the numbers and types of burial accompaniments, and EDA techniques are well suited for this purpose.

Prehistorically disturbed and vandalized inhumations are excluded from the quantitative sample, because it is not possible to ascertain the numbers and types of associated funerary objects that were originally present. However, when possible, disturbed burials are included in discussions of Salado mortuary practices.

As a result of postdepositional disturbances, some potentially important mortuary practices can only be considered in descriptive or qualitative terms. Because the generally poor preservation of organic materials makes it impossible to determine their presence or absence consistently, it is inappropriate to include them as variables in quantitative analyses. Although there is evidence that the deceased was associated with organic materials (e.g., basketry) in instances with atypical preservation, in most other cases the complete deterioration of organic remains precludes evaluation of whether these accompaniments were once present. If materials that are substantially affected by differential preservations (i.e., most organic remains) are included as variables in quantitative studies, then postdepositional processes may erroneously be recorded as variation in mortuary treatment. Consequently, this quantitative analysis of mortuary accompaniments only includes items that are largely unaffected by differential preservation.

Economic, Political, and Social Power

The following discussion uses terms such "power," "authority," "ranking," and "stratification" in order to discuss certain facets of social organization. However, it must be emphasized that in small-scale societies such as those considered here, the degree of social variation among individuals may have been relatively minor. At the same time, social complexity is not a presence/absence phenomena, and differentiation among individuals occurred in even the simplest societies. Further, it is appropriate and necessary to use the same terminology for social organizational principles in small-scale as well as much more complex societies.

Patterning identified in recent mortuary documentation suggests that it may be possible to relate different aspects of mortuary treatment to different types of power that existed in prehistoric societies (Loendorf 2001). Specifically, ceramic accompaniments may better measure the societal power of the deceased, and all other artifact types may more closely reflect economic power, whereas probable symbols of authority are the best measures of the political power of the deceased. This section begins with a discussion of the nature of power in prehistoric societies. Aspects of Salado mortuary practices that may relate to these different types of power are then considered.

Yoffee (1993) has argued that the development of social complexity is based largely on the cumulative accretion of power by individuals in prehistoric societies. Further, he maintains that power can be divided into possibly only three dimensions: economic power, societal power, and political power. These three dimensions of power reinforce one another, and all three are necessary for the existence and maintenance of social organizations. These factors are also interrelated, such that alterations to one dimension may cause changes in one or both of the others. For example, economic power has been suggested to provide a mechanism for the direct development of political power. Specifically, long-distance trade has been argued to provide the symbols of political power and the "currency" that allows the accumulation of this power (Kipp and Schortman 1989). This perspective suggests that the source of differential access to political power, in at least some instances, may largely result from economic factors. Despite this and other interrelationships between these three types of power, it still useful to consider them separately for heuristic purposes.

Economic power is defined as control over the production of subsistence resources and wealth. This type of power can be increased through the specialization and/or diversification of production. The accumulation of economic power requires the development and/or elaboration of mechanisms for the storage and distribution of surpluses. Two main sources of economic power exist. Yoffee articulated that in the first, "the means from agricultural production to economic power lies in the conversion of stored wealth to a system of dependencies arising from differential access to land and labor" (Yoffee 1993:69). The second primary source of economic power is based on mercantile actions.

Societal power refers to horizontal segmentation of social structures (Yoffee 1993:70). This type of power also relates to the establishment of territorial interactions, and the adoption of certain symbols of cultural commonality. These symbols provide a mechanism to unite people not closely related through kinship and confer prestige on those who maintain them. "The people who have unequal access to these items that legitimize social life beyond face-to-face interactions, and who are thus able to command goods ostensibly on behalf of the community, but especially for their own ends, exercise societal power" (Yoffee 1993:70).

Political power relates to the ability of certain individuals or a small group of individuals to impose their will throughout a community. Permanent administrators undertake this imposition of structure on communities. Political power is exercised by administrative decision-makers, but societal power may still be exercised in arenas (e.g., the distribution of resources within households) that do not directly involve the ruling elite.

Many "prime" movers that have been suggested as causes for the development of social complexity can be subsumed under one of these three types of power. For example, warfare has been suggested to be one important factor for societal change (e.g., Carnerio 1970). Warfare, however, is an integral element of political power. Some other types of power (e.g., religious) may crosscut these three types in ways that are difficult to subsume under only one type of power. Yoffee argued that religious power is part of societal power and did not focus on this aspect of social organization in his research; however, communally accepted supernatural beliefs (i.e., ideology) may be argued to play a more fundamental role in the differential acquisition of all three types of power that Yoffee considered. For example, the work of Netting (1972) and McIntosh (1997) suggested ideological power may operate in ways that are commonly ascribed to political power. It has been argued that, in certain circumstances, religious power literally transcends political authority (Netting 1972:233).

The distinction between ideology and other bases for action is an etic one, and as such, what is considered to be ideological will vary based on the observer. Crops may be planted, wars fought, and alliances made for reasons many outside observers would classify as "ideological." From the perspective of the participant, however, this distinction may be made in a radically different fashion.

Communal knowledge of the world may be based largely on faith, presumably the basis of most prehistoric worldviews, or observation, as modern science attempts. This distinction between faith and observational knowledge is greatly oversimplified, because individual participants may, for example, accept scientific observations on faith—in fact, this may generally be the case. The general lack of this separation on the part of participants calls into question the extent to which it is possible to separate bases for knowledge in prehistoric society. Seen from this perspective, all human knowledge is essentially ideological. This distinction is not merely semantic and will affect how modern researchers frame these issues. In particular, outside observers commonly consider "ideological" factors to be epiphenomenal, whereas this is certainly not the case for the participants.

To summarize, the control over sources of wealth and its distribution (i.e., economic power), the segregation and maintenance of communities (i.e., societal power), and the ability to impose obedience through coercive force (i.e., political power) are all seen to be fundamental factors in social organization. These three types of power reinforce one another and alterations to all three are necessary for the formation of highly complex social organizations. As stated in the introduction to this chapter, however, recent characterizations of Southwest social organization (e.g., Kintigh 1998; McGuire and Saitta 1996) have posited that political power was balanced by a strong societal ideology that limited the extraordinary accumulation of both economic and political power.

Measuring Power in Mortuary Assemblages

Ethnographic reports concerning native Southwest peoples have suggested that, in many cases, personal possessions were interred with the dead (Ellis 1968:71; Loendorf 2001:130; Ortiz 1969:51–52; Russell 1908; Tyler 1986:52–56). The mortuary assemblage, however, differs substantially from those recovered in domestic contexts, which suggests that all of an individual's personal possessions could not have been included. It is still reasonable to suggest, however, that at least some artifacts included with burials were highly prized personal possessions of the deceased.

Based on Pueblo mortuary practices, Whittlesey (1978:150) suggested that offerings of pottery "reflect the composition of the mourning group, in particular female members of the deceased's household." Simon and Ravesloot (1995) investigated this possibility by examining patterning in the paste composition of vessels from burials in Tonto Basin. They concluded that patterning in the distribution of vessels made from different clay sources "strongly supports the interpretation that burial pots and their placements may reflect the social relationships of the deceased within the larger community" (Simon and Ravesloot 1995:122).

Thus, separate factors may have structured the inclusion of different artifact classes. Some items, largely ornaments, may have been personal possessions of the deceased. Ceramic vessels, on the other hand, may have been offerings that more closely reflect the composition of the mourning group. If these observations are correct, then most nonvessel artifacts may be better indicators of economic power, whereas ceramic accompaniments may be more closely associated with the societal power.

Individuals associated with the largest vessel assemblages were generally buried with few nonvessel artifacts. Conversely, burials with large collections of nonvessel artifacts generally had small vessel assemblages. This relationship is presented graphically in Figure 61 for individuals in the CCP and RPM assemblages with more than 15 vessel or nonvessel artifacts. A negative linear relationship is present between these two variables (Pearson correlation coefficient, $r = -.70$). With the removal of one outlying individual (Feature 75, AZ U:8:450/14b, a compound near the Schoolhouse Point Mound), the Pearson correlation coefficient improves to −.85.

The negative linear relationship between these two variables supports the suggestion that they are related to different dimensions of burial treatment. At least two factors may have operated together to produce this patterning. First, for deceased individuals with large vessel assemblages (who, by inference, had a large mourning group), many individuals may have been entitled to the personal possessions of the deceased, which were therefore not interred with them. Ethnographic support for this possibility is provided by Hopi burial practices, in which individuals involved in the burial ceremony are entitled to more of the deceased's possessions. "At death a man is buried by a son if one is available. For performing this office a son gets a somewhat larger share of the father's property" (Titiev 1992:18). Conversely, artifacts may have been interred with individuals who had large nonvessel assemblages, because they had few social obligations (as reflected by their small vessel assemblages) and consequently, fewer individuals could claim these items. Second, Salado society may have discouraged the accumulation of wealth by individuals with high social status. In addition, burying wealth (e.g., shell jewelry) with deceased individuals may be a mechanism for maintaining the scarcity (and therefore value) of durable goods that otherwise accumulate and may thereby decrease in value.

Symbols of Authority

This section presents ethnographic evidence and quantitative observations that suggest three aspects of burial treatment may have been symbols of political power. Other possible symbols of authority (e.g., turquoise mosaics and shell trumpets) are represented in the RPM burial assemblage; however, this analysis is concerned only with the distribution of symbols of authority among cemeteries, which may be considered using only a few examples. Furthermore, only one individual was associated with a shell trumpet, and most other possible symbols of authority were associated with too few individuals for comparisons to be made. Because these artifacts are rare and the CCP collection is relatively small, it is necessary to combine the RPM and CCP data for the numerical comparisons presented in this section.

Ethnographic observations and patterning in the burial assemblage suggest that pigment staining on the skeletal material, some painted wood artifacts, and certain eccentric ceramic vessels were symbols of authority. Pigment staining on the skeletal material was the most common postmortem body treatment identified. Pigment staining was found on individuals of both sexes and all age groups. Pigment staining on skeletal material is commonly thought to have resulted from painting or dusting the body with pigments.

Ethnographic observations may provide insight into the possible cultural relevance of this practice (Eggan 1950:266; Parsons 1939:70; Titiev 1992:64). Historical-period Pueblo groups used facial painting to symbolize leaders of some clans and ceremonial societies (Whittlesey 1978:148). For example, during burial rituals, the Tewa painted the bodies of "Made People," who were religious leaders, to distinguish them from the "Dry Food People," the ordinary individuals (Ortiz 1969:96).

The CCP burial population has a comparatively high incidence of pigment staining (Table 59). The high rate of pigment staining in the CCP assemblage suggests that this form of burial treatment may have been used for more than one reason, including the possibility that some forms of pigment, such as ochre, may have been used in curing rituals (Velo 1984). This possibility suggests that the presence of pigment staining alone does not demonstrate high political status.

Pigment-stained individuals were generally associated with larger burial assemblages. The median counts for vessels are higher for pigment-stained individuals than for individuals without staining (Figure 62). Because these data are discontinuous and nonnormal, a Wilcoxon Rank Sum W test was performed to compare vessel counts by the presence or absence of pigment staining. A significant difference exists for vessel counts of individuals with pigment staining and those without staining ($p < .01$). Based on these data and the ethnographic observations, it is reasonable to suggest that the Salado, in at least some instances, used pigment staining to distinguish important people, perhaps the leaders of ceremonial societies, and/or to signify membership in certain social groups.

Titiev (1992:64) reported for the Oraibi Hopi that the "village chief comes into possession of a symbol of authority called a *mongkoho* [chief stick]." These sticks were placed on or in the grave of a deceased leader, where it marked the person as a member of a particular society and a leader in that group (Wright 1979:92). The Hopi *mongkoho* may have differed in appearance from the sticks collected in Tonto Basin, but "certain prayer sticks [which are more similar in appearance to painted wood in Tonto Basin assemblage] and small animal effigies may also be called by this term [and] it is usually taken to mean the badge of office carried in the hand of a society member" (Wright 1979:92).

Ferg (2001:518) concluded in his comprehensive consideration of painted wooden artifacts recovered from Tonto Basin and surrounding areas that "prehistoric staffs may have been an emblem of secular or ceremonial leadership, badges of membership in secular or religious associations,

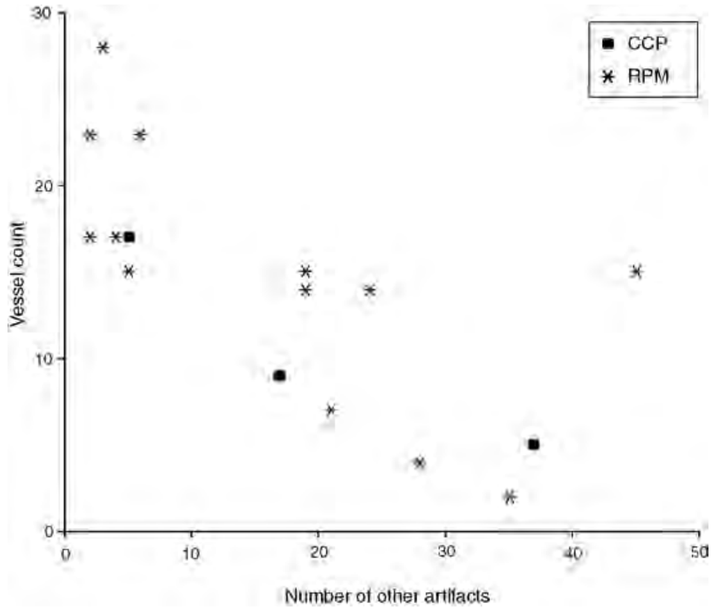

Figure 61. Vessel count by number of other artifacts for interments with more than 15 vessels or nonvessels, CCP and RPM burial assemblages.

Table 59. Pigment Staining for Undisturbed Burials in the CCP and RPM Assemblages

Pigment Staining	Salt RPM		Tonto RPM		CCP		Total	
	n	%	n	%	n	%	n	%
Present	23	12	18	22	16	38	57	18
Absent	167	88	62	78	26	62	255	82
Total	190		80		42		312	

Key: CCP = SR 188–Cottonwood Creek Project; RPM = Roosevelt Platform Mound Study.

or all of the above." Data suggest that several artifact types are represented in Tonto Basin painted wood collections, including sticks that may have symbolized authority and bows (Ferg 2001; Loendorf 1996b, 1997a, 1997b). Because of the fairly poor preservation of these objects, it is difficult to distinguish between these artifact types in some instances. In an agrarian society, however, a painted bow is a weapon that may also be a symbol of authority; thus, all painted wooden artifacts are coded as symbols of authority for the quantitative analysis.

A Hopi *tiponi* is a fetish of stone or wood belonging to a clan or society. Etymologically, *tiponi* is derived from the words for "person," "altar," and "authority" (Waters 1963:139). A *tiponi* was considered to be the most important item pertaining to rites conducted by the leader (Titiev 1992:103), and "as a badge of chieftaincy it is carried by the chiefs on certain occasions of initiation and public exhibitions" (Fewkes 1897:267n). The Zuni have similar fetishes, termed *etowe*. "A large part of Zuni ceremony centers about the veneration of sacred objects. Some of these, like the fetishes of the rain priests, are of indescribable sanctity, and in them rests the whole welfare of the people" (Bunzel 1992:490). These fetishes were given an offering of food each day and were kept with an assortment of other items, including pigments, *Olivella* shells, obsidian knives, and arrow points. The role of these effigies as symbols of authority and the general importance placed on fetishes suggests that it is reasonable to classify ceramic effigies in the burial assemblage as symbols of authority.

One way to evaluate if these items were associated with higher status is to compare vessel counts of individuals associated with eccentric vessels or painted wood to those of interments without them (Figures 63 and 64). In both instances, individuals with painted wood or eccentric vessels were associated with comparatively large vessel assemblages, which supports the suggestion that they

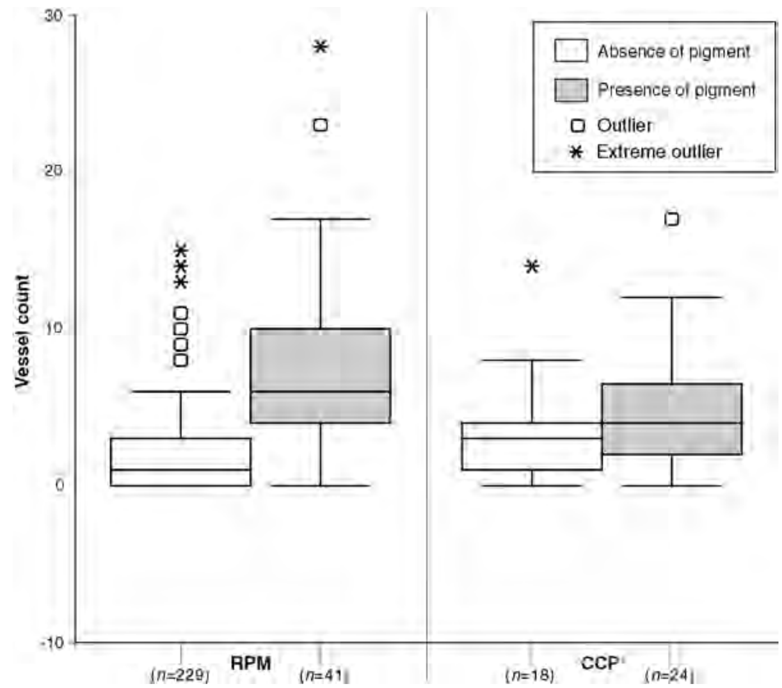

Figure 62. Vessel counts by pigment staining presence, CCP and RPM burial assemblages.

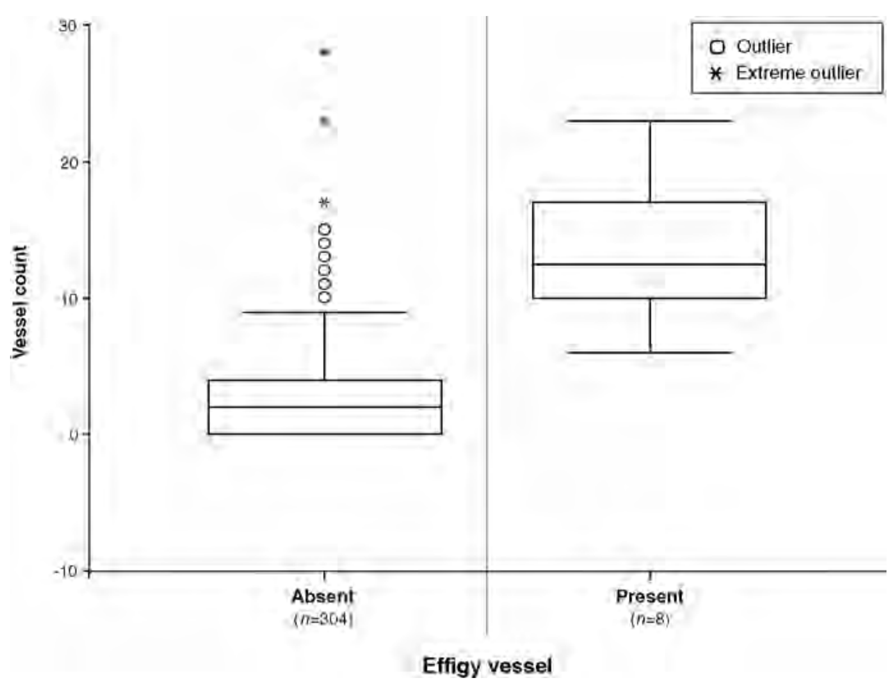

Figure 63. Vessel counts by eccentric vessel presence, CCP and RPM burial assemblages.

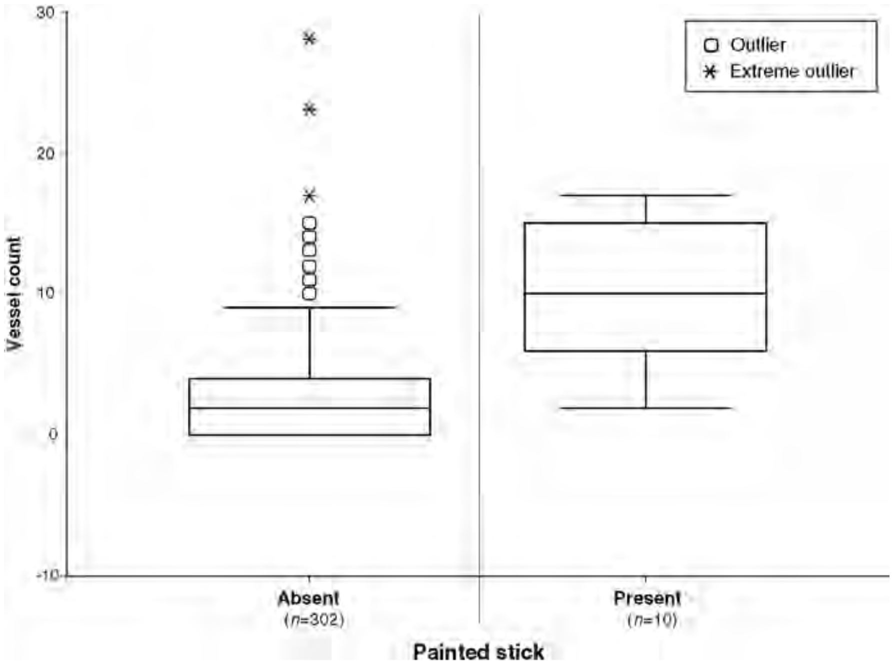

Figure 64. Vessel counts by painted stick presence, CCP and RPM burial assemblages.

were symbols of authority. Furthermore, the distribution of artifacts thought to be symbols of authority should be restricted primarily to burial contexts or contexts associated with their production or use (Braun 1981:412). Painted sticks were only collected from burial contexts and were never found on room floors or in middens (Loendorf 1996c). Similarly, although small fragments of eccentric vessels were collected from a variety of contexts, complete vessels were only collected from burial contexts.

Quantifying the Burial Assemblage

Because this analysis is based on the assumption that higher-ranking individuals should have received more-elaborate burial treatment, it is necessary to address ways to compare burial assemblages that include different types of artifacts. This process involves the assignment of values to different artifact types. Value is difficult to assign objectively, however, because it is a culturally based construct.

Artifacts counts are the most straightforward method for quantifying assemblages; the counts of different artifact types are simply added together. Artifact counts include ceramic vessels, as well as objects of shell, bone, painted wood, turquoise, and other stone. Broken artifacts and objects composed of a number of small pieces are counted as one; for example, a bracelet made from hundreds of small steatite beads is given a count of one.

The use of artifact counts as a summary of burial assemblages has a fundamental problem: it is unreasonable to assume that all different artifact types had equal value, and under this system, all types are weighted equally. In addition, because social organization is multidimensional, it is not possible to assign a single measure of value to burial assemblages. As a partial response to these problems, counts of vessels, of nonvessel artifacts, symbols of authority, and all other artifacts are considered separately.

Artifact counts do have important advantages over methods for assigning relative worth to artifact types. First, counts are an objective measure that avoid subjective and potentially tautological methods for assessing the relative value of different types. Second, this method involves the fewest assumptions, and therefore, the interpretation of results presents the least difficulties.

Results of the Quantitative Analysis

The quantitative analysis is separated into two parts. In the first, I consider variation in burial treatment based on age and sex. In the second part, I evaluate the distribution of elaborate burials within communities. These analyses suggest evidence that there was both ascribed and achieved status in Salado society. High-status positions, however, do not appear to have been exclusively restricted to any portion of the population. At the same time, patterned status differentiation appears to have existed between different types of sites in Tonto Basin.

Assemblage Variation by Age and Sex

This section evaluates patterning in burial treatment by age and sex. None of the more common artifact types was exclusively restricted to a particular sex or age group, but substantial differences do exist between these groups that suggest age and sex related patterning in burial treatment (Table 60).

Age-Related Patterning

Because adolescents are underrepresented in the CCP collection, age comparisons were made between juveniles (0–9 years) and adults (18 or more years). The relatively small size of the CCP sample complicates comparison of the different groups, particularly for individual variables.

For the RPM collection, all of the vessel types have significant differences between adults and juveniles at the 5 percent level, but for the nonvessel types, only projectile points and bone awls have significant differences between adults and juveniles. Interestingly, these two types were the only artifact categories that may have been weapons; although bone awls or hairpins are commonly interpreted as ornaments, morphological and contextual evidence (e.g., an awl tip was found embedded in the back of an inhumation at the Schoolhouse Point mound) suggests that some "awls" were also used as weapons (Loendorf 1996a).

Similar patterning is apparent in the CCP assemblage, where a significant difference exists between adults and subadults for the total vessel count but not for the total count of artifacts other than vessels. This patterning, where vessel accompaniments have significant differences based on age whereas other artifacts do not have significant differences based on age, supports the suggestion that these aspects of burial treatment are related to different dimensions of social organization. This difference is consistent with the suggestion that vessel accompaniments are better measures of societal power that is more likely to have been achieved and that most nonvessel accompaniments are more closely associated with economic power, which may have been more frequently ascribed (in the form of ornaments or jewelry offerings) to juveniles. However, adults also may have achieved the accumulation of economic power, and juveniles may have had ascribed societal power.

In both assemblages, adult burials have higher median counts than juvenile interments, and artifact counts tend to increase with age (Figure 65). This observation is consistent with the achievement of status; however, other data suggest that the ascription of status occurred in Salado society.

Although significant differences exist between adults and juveniles in the CCP and RPM assemblages, certain juveniles in the RPM assemblage were associated with comparatively large vessel assemblages, suggesting that they may have had ascribed societal status. For example, an approximately 7-year-old child (Feature 81, AZ U:4:9/295, a site on Indian Point) was interred with 10 vessels, several shell ornaments, over 1,500 steatite beads, and 2 turquoise pendants. Feature 92 at AZ U:8:450/14b is another example from the RPM assemblage of an elaborately treated early Classic period juvenile burial. This roughly 3-year-old child was associated with 13 vessels and 2 shell bracelets. Interestingly, in both cases, these juveniles were also associated with nonvessel artifacts. As will be discussed further below, similarly elaborate subadult burials were not identified in the CCP assemblage, which suggests that ascribed status was less important at these sites.

Sex-Related Patterning

Substantial differences appear to exist in the treatment of males and females in the CCP assemblage (see Table 6.2). Although variation between males and females is not significant at the 5 percent level for most artifact types, the median artifact count is higher for males, and the highest-scoring adults in the CCP assemblage were all males (Figure 66). Variation in the treatment of males and females of the similar ages also suggests differences in status existed between these groups.

Figure 67 is a scatter plot of artifact counts by the midpoint of the age estimate for individuals of known sex in the RPM and CCP burial assemblages. Examination of the figure suggests the presence of age-related patterning within the male and female groups, but there was also variation in the burial treatment of similarly aged males and females. The highest-scoring males tend to be middle-aged, with younger and older males generally having smaller artifact assemblages. In contrast, middle-aged females generally have smaller artifact assemblages than young or old adult females.

At least two possibilities could account for this patterning. First, males and females may have generally attained status in different fashions, and males may have gained higher status earlier in life than females. Male status may also have tended to decline after middle age, whereas female status may have increased in later life. Second, because they were involved in dangerous tasks (e.g., conflict) high-ranking males may have had shorter life expectancies than females or low-ranking males.

Table 60. Wilcoxon Rank Sum W, Chi-Square, and Fisher's Exact Tests for Artifact Types by Age and Sex

Artifact Type	RPMS Collection				CCP Assemblage			
	Sex (Male = 57; Female = 48)		Age (Juvenile = 120; Adult = 134)		Sex (Male = 16; Female = 16)		Age (Juvenile = 9; Adult = 31)	
	Test Statistic	*p*	Test Statistic	*p*	Test Statistic	*p*	Test Statistic	*p*
Artifact count	U = 1,133.0	.13	U = 5,082.0	< *.01*	U = 90.5	.16	U = 38.0	< *.01*
Vessel count	U = 1,147.0	.15	U = 4,797.0	< *.01*	U = 98.5	.16	U = 46.5	< *.01*
Plain bowl	U = 1,345.0	.82	U = 7,214.0	*.02*	U = 120.0	.32	U = 139.0	.59
Plain jar	U = 1,314.0	.51	U = 7,466.0	*.03*	U = 120.0	.32	U = 139.0	.59
Red bowl	U = 969.0	< *.01*	U = 6,345.5	< *.01*	U = 114.5	.60	U = 81.5	.05
Red jar	U = 1,277.5	.47	U = 6,508.5	< *.01*	U = 108.5	.42	U = 94.5	.11
Corrugated bowl	U = 1,365.5	.99	U = 6,617.0	< *.01*	U = 116.0	.63	U = 99.0	.15
Corrugated jar	U = 1,300.0	.54	U = 7,200.0	< *.01*	U = 102.5	.22	U = 109.5	.21
Painted bowl	U = 1,020.0	*.01*	U =6,407.5	< *.01*	U = 110.5	.38	U = 99.0	.07
Painted jar	U = 1,149.0	.07	U = 6,765.5	< *.01*	U = 88.0	.02	U = 137.0	.88
Nonvessel artifact count	U = 1,031.5	*.02*	U = 6,568.5	< *.01*	U = 92.0	.12	U = 109.5	.25
Projectile points	U = 1,071.5	*.01*	U = 6,794.5	< *.01*	U = 105.0	.17	U = 117.0	.21
Bone awl	U = 1,302.0	.54	U = 6,990.5	< *.01*	U = 104.0	.07	U = 126.0	.34
Pigment	U = 1,167.0	.06	U = 7,647.0	.27	U = 120.0	.32	U = 135.0	.59
Shell ornaments	U = 1,220.0	.14	U = 7,990.0	.89	U = 128.0	1.0	U = 133.0	.75
Turquoise ornaments	U = 1,213.0	.08	U = 7,659.0	.17	U = 126.0	.90	U = 122.0	.26
Other stone ornaments	U = 1,334.5	.46	U = 7,947.5	.62	U = 111.5	.28	U = 123.0	.26
Disk	U = 1,358.5	.85	U = 7,999.5	.81	U = 128.0	1.0	U = 140.0	1.0
Crystal	U = 1,330.5	.52	U = 8,031.0	.97	U = 120.0	.32	U = 135.0	.59
Symbols of authority count	U = 1,233.0	.27	U = 7,026.5	< *.01*	U = 105.0	.79	U = 94.5	.09
Eccentric vessels +/-	Fisher's Exact	.62	Fisher's Exact	.22	Fisher's Exact	.48	Fisher's Exact	1.0
Painted stick +/-	Fisher's Exact	*.04*	Fisher's Exact	< *.01*	Fisher's Exact	1.0	Fisher's Exact	1.0
Pigment +/-	Chi-Square = .005	.94	Chi-Square = 3.05	.08	Chi-Square = 0.0	1.0	Fisher's Exact	.25

Note: Bold items are significant at the .05 level.

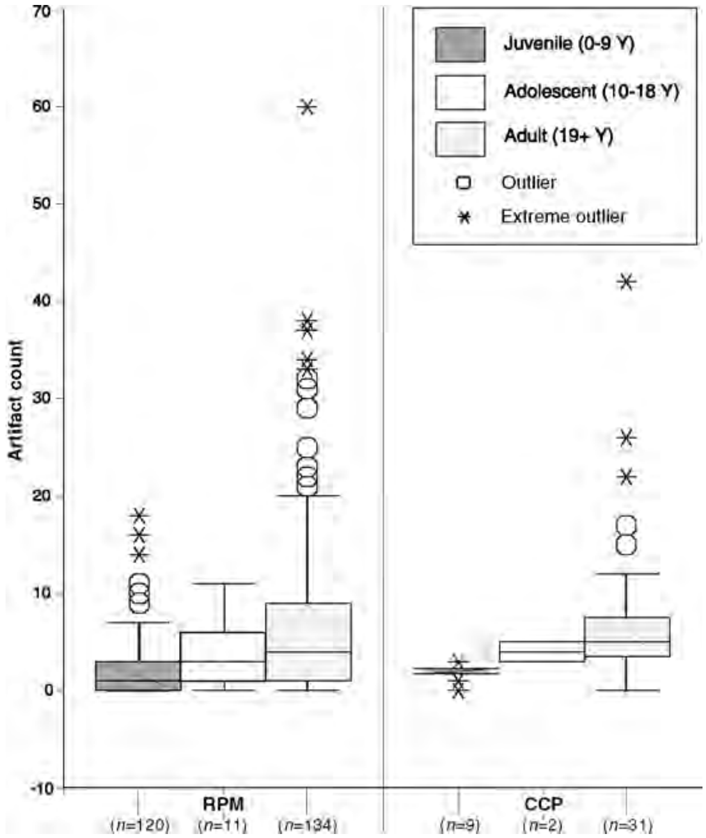

Figure 65. Artifact counts by age, CCP and RPM burial assemblages.

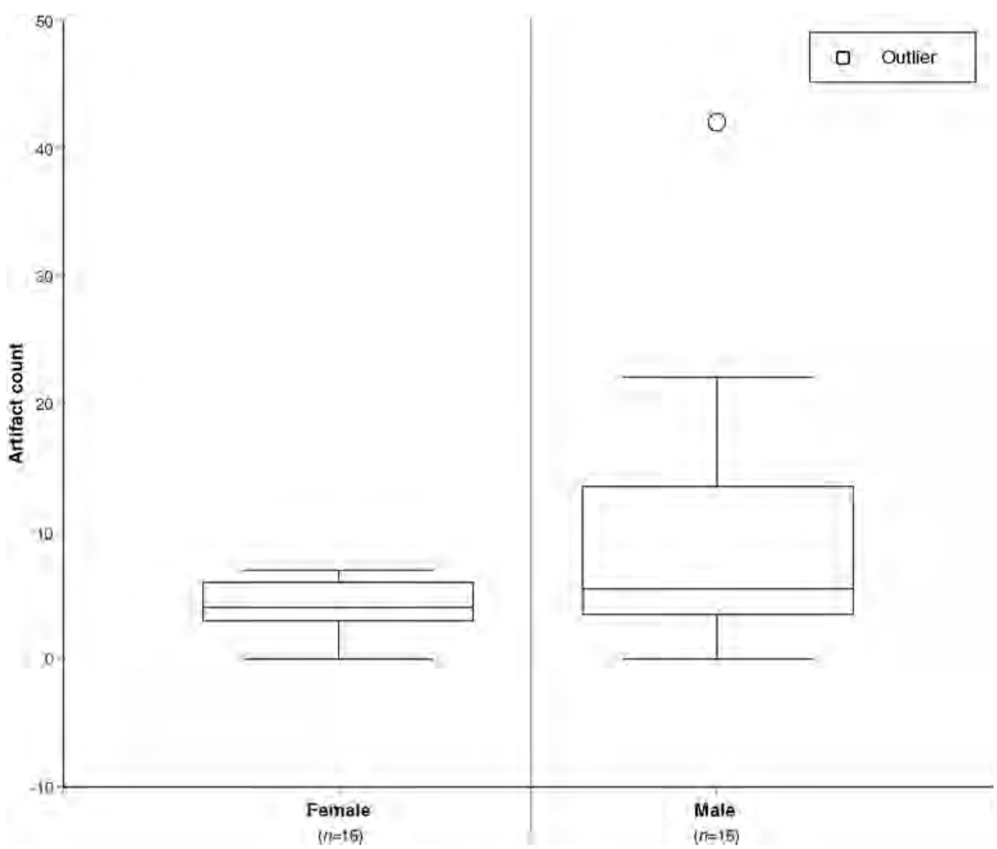

Figure 66. Artifact counts by sex, CCP burial assemblage.

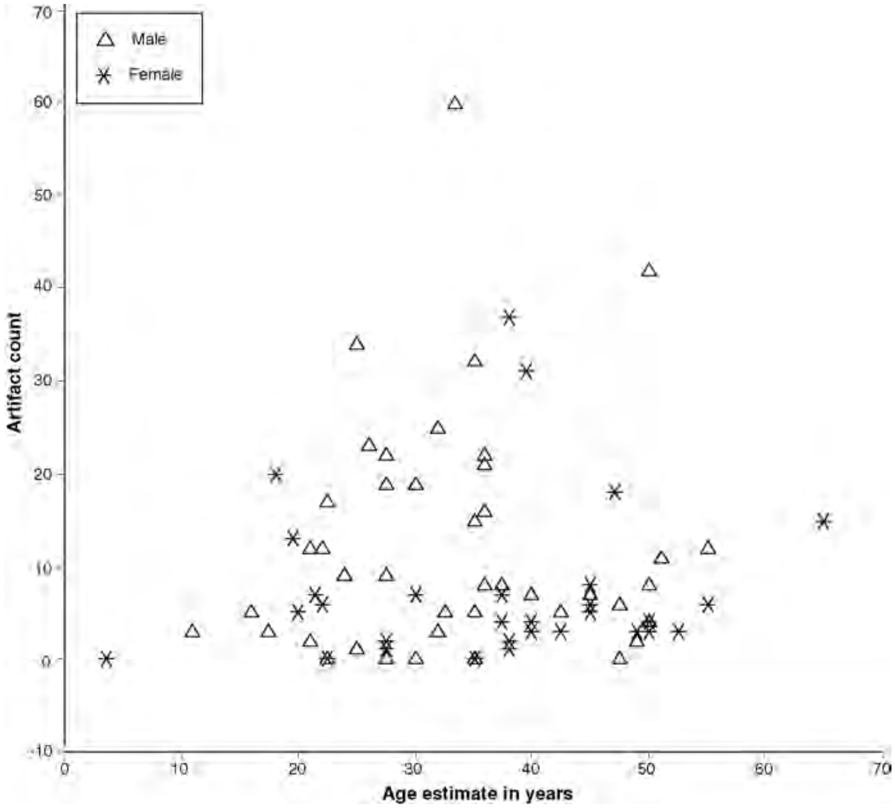

Figure 67. Artifact count by midpoint of age estimates for males and females, CCP and RPM burial assemblages.

Assemblage Variation by Site Type

In order to consider the largest samples possible, it is useful to combine burials from similar site types. All early Classic period interments in the RPM and CCP collections were assigned to one of three groups, lumping similar sites from the Tonto and Salt arms of Tonto Basin. The primary distinction used to group sites was between integrative sites and residential compounds. Residential compounds were then divided into two groups based on the assumption that aggregation during the late Classic period should have occurred at sites where higher-ranking corporate groups resided. Aggregation is thought to have been most likely at the settlements of higher-ranking groups for two reasons. First, higher-ranking groups should have been in a better position to control the location of aggregation and are more likely to have chosen their own settlements because of the stress involved in relocating. Second, the most-powerful segments of society are more likely to have controlled the best farmland and occupied the most-favorable locations for habitation, which are also generally focal points for aggregation (Kintigh 1985:103–109; Levy 1992).

The first group consists of early Classic period burials from small residential compounds where permanent residential occupation appears to have ended before the advent of the late Classic period, a group that includes the CCP sites. The second group includes early Classic period inhumations from residential sites where the population eventually aggregated in the late Classic period; these sites were also generally in areas where several contemporaneous compounds were closely clustered together, whereas compounds in the first category were generally isolated. The terms isolated and clustered are used for convenience to refer to these two groups. The third category consists of early Classic period burials from integrative sites—those with platform mounds.

Figure 68 presents box plots of assemblage scores for interments from these three contexts, and Table 61 contains Wilcoxon Rank Sum W tests. For most measures, a greater range of variation exists for individuals from integrative sites and clustered compounds, and the highest-scoring individuals generally were found at these sites. The most-distinct difference among the three groups appears to be in nonvessel counts, which suggests by inference that distinctions in economic power were most pronounced. Symbols of authority, on the other hand, appear to have been relatively evenly distributed among these groups, suggesting that positions of political authority were not exclusively restricted to any segment of the population.

These observations suggest that economic, societal, and political power were not controlled by any single group.

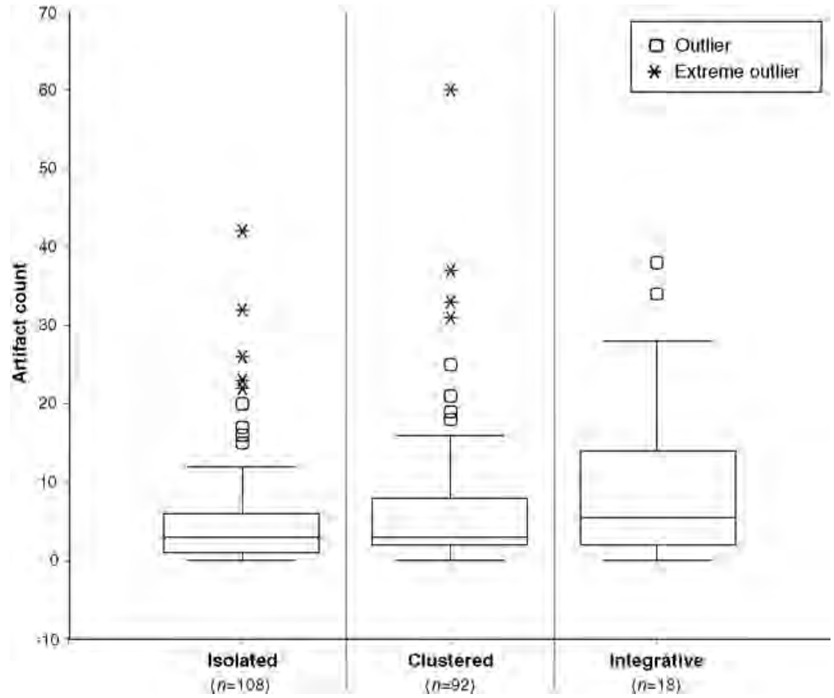

Figure 68. Artifact counts by site type, early Classic interments in the CCP and RPM burial assemblages.

Table 61. Wilcoxon Rank Sum W Tests by Early Classic Site Type

Assemblage Measures	Test Statistic	*p*
Isolated compounds and clustered compounds		
Artifact count	U = 4,750.5	.59
Vessel count	U = 4,746.0	.58
Nonvessel artifact count	U = 3,656.0	*< .01*
Symbols of authority count	U = 4,282.5	*.03*
Clustered compounds and integrative sites		
Artifact count	U = 667.5	.19
Vessel count	U = 710.5	.34
Nonvessel artifact count	U = 765.5	.60
Symbols of authority count	U = 774.5	.55
Isolated compounds and integrative sites		
Artifact count	U = 731.5	.92
Vessel count	U = 854.0	.41
Nonvessel artifact count	U = 710.5	*.04*
Symbols of authority count	U = 904.0	.57

Note: Bold items are significant at the .05 level.

At the same time, each site type included individuals of all age and sex groups, but measurable differences still exist between segments of the community. These data suggest that each group had leaders and nonleaders, but the highest-status positions were more concentrated at the integrative sites.

Examples of the largest and most elaborate burial facilities identified during the RPM investigations (Type 2 multiple burials) were not found in the CCP burial assemblage. Type 2 multiple burial facilities contained the remains of up to nine individuals, along with large numbers of accompaniments, including probable symbols of authority (Loendorf 1998a). The elaborate nature and artifact assemblages of these facilities suggest they were used by the highest-ranking members of Salado society. These multiple burials were found at clustered compounds but not at small residential compounds that were abandoned during the early Classic period, which also suggests that there were differences in power among these site types.

Sex-based variation in burial treatment at isolated compounds and clustered compounds suggests evidence for the ascription of status (Table 62; Figure 69). The sample of burials from integrative sites is insufficient to allow comparison of these groups. Substantial differences exist between males and females from isolated compounds, whereas males and females at clustered compounds received remarkably similar treatment. Significant differences also exist between juveniles and adults buried at isolated compounds but not between juveniles and adults at clustered compounds (Figure 70; see Table 62).

This pattern, in which there is greater similarity in burial treatment between the sexes and age groups in higher-scoring cemeteries, is consistent with the ascription of status. It also suggests that achieved status played a more important role in the lower-ranking groups.

Conclusions

Patterning in the CCP burial assemblage is consistent with the suggestion that vessel accompaniments are more closely associated with the societal power of the deceased, whereas most nonvessel artifacts may be better indicators of differences in economic power. Although significant differences exist in the numbers of vessels associated with adults and juveniles, there is greater similarity in the number of other artifact types interred with individuals of different ages. These differences support the suggestion that these artifact classes are associated with different dimensions of social organization. Further, the negative linear relationship between vessel and nonvessel accompaniments also suggests that they reflect different aspects of mortuary ritual. This patterning is consistent with the presence of leveling mechanisms that prevented the extraordinary accumulation of economic or societal power in Salado society.

Both ascribed and achieved status appeared to have played a role in structuring Salado social organization. In the burial assemblage excavated as part of the CCP, artifact counts tended to increase with age, which suggests the achievement of status. Males in the CCP assemblage were generally associated with larger burial collections than females. At some other sites in Tonto Basin that also generally had more elaborate burial treatment, however, males and females did not differ substantially in burial treatment and comparatively elaborate subadult interments were identified. These observations suggest that ascribed status occurred in some portions of the Classic period Tonto Basin population.

Intracemetery variation in burial treatment in Tonto Basin suggests that ranking occurred within corporate groups, and all cemeteries included individuals who received nominal treatment. This observation suggests that evidence for a high degree of vertical segregation of power is lacking in Salado mortuary practices.

Analyses presented here suggest that the Classic period Salado may have used pigment staining, painted sticks, and eccentric vessels as symbols of political authority. Although pigment staining may have been a symbol of authority in some cases, the high incidence of this form of treatment at the CCP sites suggests that it may have been used for more than one reason, possibly including the use of pigments were in curing ceremonies (Velo 1984). Consequently, the presence of pigment staining alone may not symbolize political authority.

These three possible symbols of authority have been identified at the full range of site types in Tonto Basin, including small residential compounds (e.g., the CCP sites), large roomblock sites (e.g., Schoolhouse Point mound), as well as at community integrative facilities such as platform mounds (e.g., Cline Terrace mound). This observation suggests that no segment of the Tonto Basin population exclusively held political power. Instead, each site appears to have had its own leaders and nonleaders. At the same time, the highest-ranking positions appear to have been concentrated at integrative sites, where these symbols were found more frequently (Loendorf 2001).

The greatest difference in burial treatment between community segments appears to be in the number of nonvessel artifacts, suggesting by inference that distinctions in economic power were greater than societal or political power. This differentiation in economic power does not appear to have been sufficient to translate into a high degree of stratification in societal or political power, which is also consistent with the existence of leveling mechanisms in Salado society that prevented the extraordinary accumulation of any type of power. As Levy (1992:56) has suggested for the Hopi, stratification in the Salado society may have operated to manage scarcity rather than economic surpluses.

Table 62. Wilcoxon Rank Sum W Tests by Age and Sex for Early Classic Site Types

Assemblage Measures	Sex (Females and Males)		Age (Juvenile and Adult)	
	Test Statistic	*p*	Test Statistic	*p*
Isolated compounds				
Artifact count	U = 280.0	*.01*	U = 661.5	< *.01*
Vessel count	U = 321.0	*.05*	U = 660.0	< *.01*
Nonvessel artifact count	U = 295.0	< *.01*	U = 942.5	*.03*
Symbols of authority count	U = 442.0	.83	U = 864.5	< *.01*
Clustered compounds				
Artifact count	U = 186.5	.92	U = 713.0	.50
Vessel count	U = 186.5	.92	U = 695.5	.40
Nonvessel artifact count	U = 187.5	.95	U = 749.0	.73
Symbols of authority rarity count	U = 184.5	.88	U = 743.0	.59

Note: Bold items are significant at the .05 level.

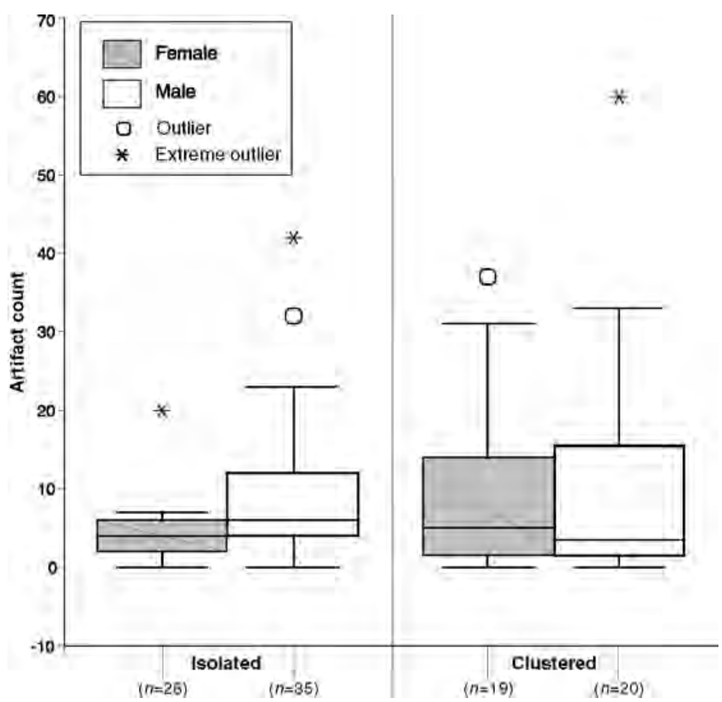

Figure 69. Artifact count by sex for early Classic interments from sites abandoned during early Classic (Isolated) and site occupied into late Classic (Clustered), RPM and CCP burial assemblages.

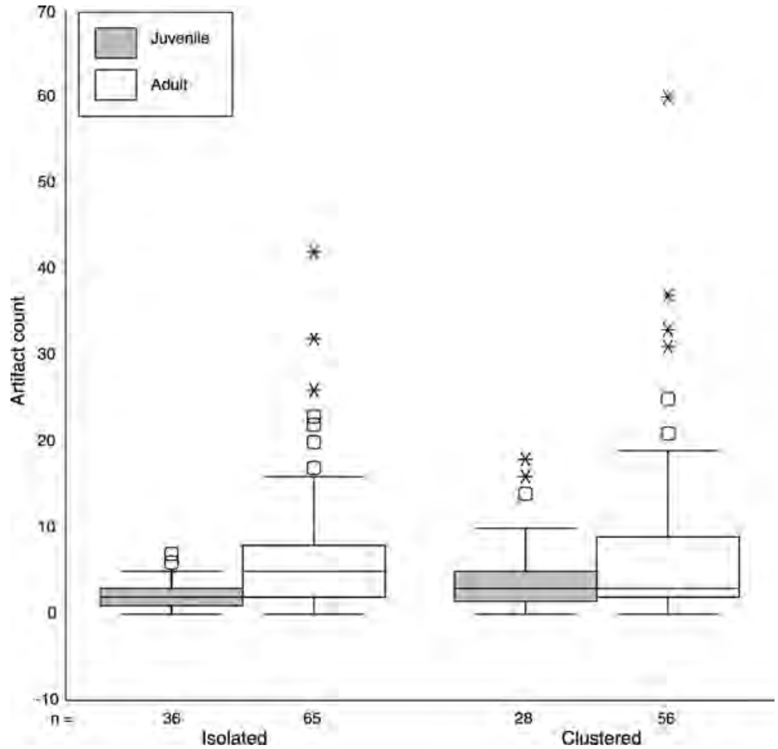

Figure 70. Artifact count by age for early Classic interments from sites abandoned during early Classic (Isolated) and sites occupied into late Classic (Clustered), RPM and CCP burial assemblages.

Significant differences exist in the treatment of males and females at cemeteries from sites that were abandoned during the early Classic period, whereas contemporaneous male and female interments from residential compounds that continued to be occupied into the late Classic period received similar burial treatment. It also appears that male status may have tended to decline in later life, whereas the highest- scoring female burials were generally older adults. These differences in treatment by age group and sex that occurred among community segments suggest that female status was more closely tied to ascription, and males may have had greater opportunity to achieve higher status. A matrilineal system of inheritance is one possibility that could account for these differences.

CHAPTER 7

Ethnicity and Mortuary Practices

Stephanie M. Whittlesey, Eric Eugene Klucas, and Robert A. Heckman

The closely related concepts of population movement and cultural affiliation, or ethnic identity—today often labeled "social identity" when considered at the scale of community or larger units (Mills 2004:4)—have structured our investigations of ancient life in the Southwest for more than 60 years. Nowhere is this more evident than in archaeological reconstructions of central Arizona and Tonto Basin. Investigations of cultural affiliation have spanned the history of archaeology in this region and three different paradigms. The earliest models forwarded by Harold S. Gladwin, Emil W. Haury, and others of Gila Pueblo Archaeological Foundation posited that first the Hohokam of the Salt and Gila River basins and then the Salado from the Little Colorado River region moved into Tonto Basin, bringing with them distinctive material culture, lifeways, and organizational patterns (Gladwin and Gladwin 1935; Haury 1932, 1945; Reid and Whittlesey 1997). Gila Pueblo's studies were framed within the culture-history paradigm that dominated southwestern archaeology at that time (Reid and Whittlesey 2005). This paradigm was based on the empiricist classification of material remains in time and space and was focused on the definition and description of archaeological cultures, which often were assumed to represent discrete social entities (Jones 1997:3).

When CRM studies began in Tonto Basin, processual archaeology had shifted research away from the classification and description of archaeological cultures and toward the analysis of economic and subsistence systems, exchange, and social organization. As Jones (1997:5) has pointed out, within the processual paradigm, there was little concern with issues of nationalism, ethnicity, and multiculturalism. "Having dismissed the equation of archaeological cultures with ethnic groups," she wrote (Jones 1997:5), "processual archaeologists in general did not regard ethnicity as an important focus of archaeological enquiry; it was merely seen as the product of an outmoded and unfashionable archaeological paradigm." Nevertheless, archaeologists working in the mountains of central Arizona continued to focus on problems of immigration, ethnic coresidence, and multiculturalism as the constructs of an emerging behavioral archaeology were developed and tested (Reid and Whittlesey 2005). Building on the sound empirical footing of Haury's work in the Forestdale Valley and at Point of Pines, the University of Arizona Field School explored these issues at sites such as Grasshopper, Chodistaas, and Grasshopper Spring Pueblos (Reid and Whittlesey 1999, 2005).

These research problems spilled over into the early years of CRM archaeology in central Arizona. In Tonto Basin, such studies yielded new data making it clear that the situation was yet more complicated than the Gila Pueblo archaeologists had envisioned originally. The Cholla Project, a large contract project spanning most of the state of Arizona and crossing the Transition Zone on the fringes of Tonto Basin (Reid 1982), discovered additional evidence for multicultural entities before, during, and after the transition, which has traditionally been assigned a starting point of A.D. 1150 or 1200. Moreover, the Cholla Project found an extraordinary degree of population movement within the Transition Zone, as peoples of diverse origins moved back and forth across this large, joint-use area. Whittlesey and Reid (1982:80) concluded that "no single cultural label fits the occupation of the Tonto Basin"; instead, the basin hosted multiple populations of differing identities in a fluid and constantly shifting mixture.

This model of population movement and multiculturalism was eschewed by archaeologists subsequently working in Tonto Basin and its environs (Reid and Whittlesey 1997). The dominant model was the notion of uniform Hohokam identity; the occupants of the basin were considered to be Hohokam throughout the cultural sequence (e.g., Wood and McAllister 1982). Rice (1990a), for example, hypothesized that the Salado culture represented the descendants of the Colonial period Hohokam settlers who had adapted to local upland conditions. During studies resulting from planned modifications of Theodore Roosevelt Dam, excavation of several sites with evidence for "puebloan"—that is, non-Hohokam—occupation forced archaeologists to reconsider this model. Although the rediscovery of a multiethnic population did not break new ground, the new evidence confirmed earlier hypotheses and strengthened inferences. Elson, Gregory, et al. (1995:452) concluded, for example, that "environmental and social stress encouraged small numbers of pueblo-related groups to migrate into the eastern Tonto Basin during the early portions of the Roosevelt phase."

Today, postprocessual archaeology has spurred a renewed interest in ethnicity and multiculturalism, although these issues are by no means limited to this new paradigm (Jones 1997:5–6). Critical theory, archaeopolitics, and issues raised by the passage of the Native American Graves Protection and Repatriation Act (NAGPRA) have returned ethnicity to the forefront of archaeological inquiry (Ferguson 2004).

Population movement and social identity were major research issues of the CCP. Following the framework defined by TNF for heritage resources (Wood et al. 1989), the research design identified several themes (Ciolek-Torrello and Klucas 1999). The theme of demography included regional population growth and decline, aggregation and dispersion, population movement, ethnicity, and questions concerning human health. Noting that ethnicity and participation in different sociopolitical and ideological systems have been points of debate since the beginning of research in the region, Ciolek-Torrello and Klucas (1999:20–21) observed that several lines of evidence could be used to address these issues, including architectural styles, material culture, and mortuary practices.

This chapter takes up that challenge, examining issues of population movement and social identity from the perspective of mortuary practices. We should note that our interest in ethnicity and cultural affiliation does not stem from a NAGPRA perspective, however important this may be. Instead, our interest is a natural progression from processual and behavioral archaeological research focusing on sociopolitical organization and a continuation of the dominant research theme in Tonto Basin archaeology. Moreover, we are particularly challenged to understand the different pathways that might result in certain social and political conditions. As Mills (2004:2) concluded, "A greater appreciation of both the diversity of social institutions and the alternative historical pathways of past southwestern societies underlies research on identity . . . in the Greater Southwest." Especially important in Tonto Basin are the boundaries among social groups and the processes by which identities are negotiated. Ethnogenesis, or the means by which groups establish distinctiveness (Hickerson 1996; Sturtevant 1971), therefore becomes a prominent research issue. Beginning in the late pre-Classic period (if not earlier), social and environmental conditions in Tonto Basin included the presence of diverse social groups, many of which were established in the region by means of demographic shifts and population movement, environmental and subsistence stresses, and conflict. Such conditions may have fostered the redefinition and renegotiation of existing social-group boundaries and the emergence of new ethnic groups. Ferguson (2004:31) has detailed the process nicely:

> Ethnogenesis is predicated on interaction between peoples of diverse linguistic and cultural backgrounds, a process that often entails intermarriage across linguistic and ethnic boundaries (Moore 2001:32).This interaction leads to sociocultural separation and reintegration (Hickerson 1996:70). Groups separate themselves, often by migration or the establishment of new settlements. Existing group loyalties are severed, and dysfunctional social and economic ties are replaced with alternative associations. New identities are constructed that merge old and new cultural practices, and these new identities are often affirmed through the adoption of new religious beliefs and ritual symbols. The dynamic cultural elements used in the construction of new social identities may be accompanied by new validating histories [Hill 1996:3–4].

Indeed, the presence of diverse social groups may be necessary for establishment of ethnic identity. Barth (1969), Cohen (1978), and others have noted that ethnic groups do not exist in isolation; they are developed by means of interaction with similar groups or larger polities in which ethnic groups are embedded. Competition—for power, resources, marriage partners, and so on—is integral to such interaction (Hodder 1979). Studies of ethnogenesis in historical archaeology and ethnohistory have demonstrated that new identities emerge during periods of major reorganization, or what Hill (1996:1) has labeled "general contexts of radical change and discontinuity." Because the transition from the pre-Classic period to the Classic period in Tonto Basin was one such context, it would not be unusual or surprising to discover new ethnic groups emerging there at that time. Ferguson (2004:31) also noted the importance of a temporal perspective and the necessity of constructing historical models in considering social identity. Because identity is predicated on a meaningful past, theories of social identity must take into account migration, invasion, displacement, and colonization.

Having established our research objectives, we turn now to defining social identity, describing the scale and parameters of our study, and discussing how social identity can be delineated by studying ancient mortuary practices.

Social Identity

As a number of scholars have pointed out, "identity" is a complex sociocultural phenomenon. The complicated grid of social-identity dimensions includes tribal affiliation, general affinity with related groups (e.g., Pueblo Indian), genetic ancestry, political associations, nationality, age, gender, household membership, membership in ritual organizations such as sodalities, religious affiliation, residence in villages and settlement clusters (e.g., living on Third Mesa at Hopi), language and dialect, and ethnicity (Ferguson 2004:29; Hill 2004:124). Moreover, identity is not static. "Social identity is always multilateral, fluid, and situationally contingent because it is negotiated through interaction with others" (Ferguson 2004:28). Therefore, it is necessary to define social identity as used in this study and delimit the scale at which we are seeking it.

Our interest in this study is social identity on a level comparable with that of ethnic groups—large-scale social-group identity (Bennett 1975; Jones 1997; Shennan 1989). Although we recognize that ethnicity is a problematic concept for diverse political and intellectual reasons, which Jones (1997) summarized so ably, it is the most congruent scale for investigating our research problems. Those who are troubled by the connotations of the terms "ethnic group" or "ethnicity" may substitute, as does Duff (2002:20), the label "group identity" without loss of the meaning we intend here. Ethnicity is a form of conscious identity; ethnic groups are self-perceived entities that hold in common a set of traditions not shared by others (de Vos and Romanucci-Ross 1975:9). Barth (1969:10–11) defined an ethnic group using four criteria: a population that is biologically self-perpetuating, shares fundamental cultural values, constitutes a web of communication and interaction, and has a membership that identifies itself and is identified by others as distinctive. More recently, Jones (1997:84) provided a working definition of ethnicity, which we adopt here: "*Ethnic groups are culturally ascribed identity groups, which are based on the expression of a real or assumed shared culture and common descent* (usually through the objectification of cultural, linguistic, religious, historical and/or physical characteristics)" (emphasis in original). Such characteristics include religious beliefs and practices, language, a sense of historical continuity, and real or fictitious common ancestry and origin (Kamp and Yoffee 1980:87–89). Jones (1997:84) has stressed that ethnicity as a process involves a basic "we/they" distinction. Ethnicity rests on the reproduction and transformation of basic classificatory distinctions among groups of people who perceive themselves to be in some respect culturally distinct (Eriksen 1992:3). As Barth (1969:10) has argued, ethnic groups are categories of ascription and identification used by the actors themselves, therefore providing an emic perspective.

The material correlates of ethnic behavior typically are symbols that convey messages concerning group membership. Such schemes of meaning are generated within the group and usually are related to the internal organization of social relations (Clark 2004a:43; Hodder 1979; Jones 1997:155; Sterner 1989). The cultural differences of ethnicity are to some degree systematic and enduring, because they are constantly affirmed, reproduced, and negotiated within the ongoing processes of social life (Jones 1997:84).

The scale at which we examine ethnicity is that of the residential settlement (hamlet or village). Although our investigation focuses on smaller units (intravillage residential units, domestic groups, or households), these are likely to reflect identity at a real or assumed kinship level, such as clan or lineage. By contrast, larger units (settlement clusters or regions) are likely to mask the ethnic differences we seek, because our study begins with the working hypothesis that the residents of Tonto Basin belonged to diverse social groups. In addition, critical demographic mass and historical persistence, which are the necessary conditions for the development of regional identities (Bernardini 2005:19; Duff 2002), or populations with consistent developmental histories, stable population histories, and coherent material-culture assemblages, may be lacking in Tonto Basin and adjacent regions of central Arizona during the transitional period. We remain alert to the possibility that social identity at the settlement level may be predicated on clan membership, however, and we accept that coresidence of groups of diverse social identities, regardless of the foundation of these identities, probably was the norm rather than the exception (Reid and Whittlesey 1999).

Last, our conception of ethnicity does not rest on geographically or culturally bounded notions of homogeneity. Earlier conceptions (e.g., Barth 1969) focused on the boundedness of ethnic groups. Contemporary approaches to ethnicity stress the fluidity of identity, the role of agency and practice in engendering mutable identities, and the influence of situational nuances. Moerman (1965), for example, suggested that peoples' self-ascribed identities varied with the social situations in which it was necessary to express identity. The influence of practice theory has shaped the contemporary perspective in which identity-related choices, rather than the boundedness of groups, informs social identity (see discussion in Duff 2002:19–20).

Our perspective on ethnicity is similar to the interpretation forwarded by Bernardini regarding the contemporary social identity of the Hopi people:

> Hopis explicitly define the "ethnic" identity of the contemporary Hopi Tribe as the amalgamation of many diverse groups, called clans. Each Hopi clan has a distinct social and ceremonial identity, and maintains its own unique history. To be Hopi today is to be part of the "gathering of the clans" on the Hopi Mesas, but does *not* require that the identity of component groups be submerged [Bernardini 2005:7; emphasis in original].

Methods: Mortuary Practices and Ethnicity

Ethnicity can be addressed and measured in many ways. A traditional technique strongly grounded in processual theory centers on artifact style. Beginning with Binford

(1962:220), processualists viewed artifact style as a tool for addressing questions of ethnicity, migration, and interaction. Stylistic variation, or isochrestic variation as Sackett (1977) labeled it, was thought to derive from variation in culturally prescribed ways of doing things. Because style is a product of acculturation within a given social group, it therefore can serve as an index of ethnic similarity and difference (Sackett 1977:371). Wiessner (1983, 1984, 1985, 1989) expanded upon this notion to view style as means of actively communicating identity and differentiating between the self and others and between "we" and "they." As Jones (1997:113) has explained it, Weissner's style refers to the active symbolic role of particular characteristics of material culture in mediating social relations and social strategies.

A related concept that may be most important to differentiating among ethnic groups is what has come to be known as "technological style" (Childs 1991; Lechtman 1977; Pfaffenberger 1992; Stark 1998). Although Lechtman (1977) originally coined the term, the notion conforms to pervasive processualist views regarding style and function. For example, Sackett (1982:75, 1986) perceived style as inherent in the choices people make from a broad spectrum of equally viable alternative means to achieve the same functional ends. Style therefore resides in those dimensions of artifact variability that appear to be explicitly functional. Sackett (1986) argued that isochrestic variation within butchering techniques may convey as much meaningful information about ethnicity as pottery decoration. In similar fashion, Hodder (1982a:55) observed that ethnic identity may be expressed in mundane utilitarian items as well as decorative objects, and such items are not necessarily highly visible.

Today, stylistic variation is not seen merely as a passive reflection of enculturation within ethnically bounded contexts. Instead, it is actively produced, maintained, and manipulated during communication and social relationships (Jones 1997:115). In addition, researchers focus on technological style as a way of doing, with an emphasis on the sequence of production and the technical choices that are made during the sequence (Dietler and Herbich 1989; Hegmon 1998; Lemonnier 1986, 1992; Stark 1998). Techniques learned in childhood may be repeated consistently in adult productive activities without conscious intent to transmit a message to others (Bernardini 2005:86). This notion of technological style closely parallels Bourdieu's (1977) *habitus*, or the set of underlying and unconscious social rules that structure interaction and perceptions of the surrounding world. Bourdieu has written:

> The structures constitutive of a particular type of environment (e.g., the material conditions of existence characteristic of a class condition) produce *habitus*, systems of durable, transposable *dispositions*, structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practices and representations which can be objectively "regulated" and "regular" without in any way being the product of obedience to rules [Bourdieu 1977:72; emphasis in original].

Bourdieu's practices become part of an individual's sense of self at an early age and therefore involve the processes of socialization and enculturation (Bentley 1987). Although Clark (2004a) has argued that enculturation, or basic cultural training, is distinct from ethnicity, and the domestic information that households transmit offers the best means of differentiating social identity, Hodder's (1982a:54–55) research has demonstrated a correlation between dimensions of material culture that are not part of ethnic symboling, such as hearth position inside dwellings, and self-conscious ethnic signification in other dimensions of material culture. In other words, enculturative practices as reflective of Bourdieu's *habitus* may signal ethnicity as readily as more-recognizable and self-conscious symbols. As Jones (1997:120) concluded, "the self-conscious expression of ethnicity through material culture is linked to the structural dispositions of the *habitus*, which infuse all aspects of the cultural practices and social relations characterizing a particular way of life."

Technological style can be apprehended in many aspects of productive activities, including the built environment, diverse crafts, cuisine, and mortuary behavior (Mills 2004:5). A popular approach involves architecture and house-construction practices. Riggs (2001) used room-construction data to discern the presence of different ethnic groups at the large, aggregated community of Grasshopper Pueblo; divisions among roomblocks "appear to have reflected real social groups that had distinct construction practices" (Riggs 2001:149). Bernardini (2005) applied architectural analysis to the problem of Hopi serial migrations. Clark (2001, 2004a) used domestic spatial organization and technological styles of domestic architecture to identify immigrant Puebloan groups in Tonto Basin. Other approaches involve utilitarian ceramic containers (Stark and Heidke 1992, 1995), rock art (Bernardini 2005), textiles and basketry (Fowler 2004; Webster and Loma'omvaya 2004), and food-preparation techniques and equipment (Crown 2000; Lowell 1999).

Less attention has been paid to mortuary practices as an indicator of social identity and ethnicity. For more than 40 years, archaeological investigations of the treatment of the deceased have focused almost exclusively on mortuary practices as indicators of status (see Whittlesey 1978). Initial expressions of a theory of mortuary variability followed the preeminent concern of processual archaeologists with social organization (e.g., Binford 1971; Braun 1979; Brown 1981; Chapman et al. 1981; Goldstein 1980; Rothschild 1979; Saxe 1970; Tainter 1978). Or, as Carr (1994:65) stated, "social organization is the primary proximate determinant of variation in mortuary practices within societies, with modifications by circumstances of death." Despite extraordinary shifts in archaeological theory since this approach was first formulated, including what could be termed a paradigm shift to postprocessual archaeology, contemporary archaeological investigations of mortuary practices in the Southwest seldom stray from this theoretical orientation. Recent compilations (e.g., Mitchell and Brunson-Hadley, eds. 2001) and the preceding chapter demonstrate this oddly static approach to the archaeology of death.

Carr's (1994) cross-cultural ethnographic survey of mortuary practices demonstrated, however, that philosophical and religious factors, such as overarching worldview, cosmology, and beliefs about the afterlife, determined how the dead were treated as frequently—and often more frequently—than social-organizational factors. Therefore, mortuary practices can be used to seek social identity and ethnicity in the archaeological record, for two reasons. First, mortuary practices are an expression of technological style and the conditioning precepts of the *habitus.* The manner in which mortuary facilities are constructed and the sequence of events involved in producing the complicated artifact that is a human interment are as clear expressions of technological style and technical choices as those involved in producing a ceramic container or any other craft. Second, mortuary behavior clearly reflects the religious, cosmological, and ideological beliefs and systems that distinguish ethnic groups and structure the material expressions of ethnic identity. Carr (1994:38) concluded that "the one philosophical-religious factor observed most frequently to determine mortuary practices was beliefs about universal orders and symbols," confirming Hodder's (1982b) contention that worldview is evident in and can be reconstructed from mortuary remains. In mortuary practices, we may also see manifested the sense of historical continuity and the real or fictitious common ancestry and origin that also characterize ethnic groups (Kamp and Yoffee 1980:87–89). In short, mortuary practices offer a rich source of information for distinguishing ethnic groups in the archaeological record and differentiating among diverse groups in situations of population movement, coresidence, and multiculturalism.

Mortuary Attributes

Taking Carr's (1994) cross-cultural ethnographic survey as our foundation for determining those characteristics of mortuary practices most likely to reflect religious, ideological, and cosmological factors, we examined the following variables.

Grave Location

Carr (1994) found that social and religious or philosophical beliefs influenced grave location with about equal frequency, although in some cases, the latter were more influential. Some of the variables he tabulated included the location of the cemetery within the settlement and with relation to the real or mythological landscape, whether a cemetery was formally demarcated, the within-cemetery location of graves, and grave location (inside or outside community living space) (Carr 1994:Table 2.7). In addition, Goldstein (1976, 1981) found that the presence of a permanent, bounded area used exclusively for the disposition of the dead usually represents a corporate group, typically a lineal descent group, with rights over the use or control of crucial, restricted resources. We examined the location of graves within settlements with respect to domestic architecture, compound walls, and facilities. We sought to determine whether burial areas were bounded and used exclusively as cemeteries or were diffuse and represented other kinds of activities. We also looked for evidence of grave marking.

Grave Facility

Carr (1994:Table 2.7) found that the form of disposal (e.g., grave, scaffold, or cremation urn) and the grave or container form (building materials, grave dimensions, shape of grave, etc.) were more influenced by philosophical and religious factors than social factors. The number of individuals per grave, by contrast, was predicated more frequently on social factors (Carr 1994:Table 2.7). We examined the type of grave (whether it was a simple pit or elaborated in some fashion); grave dimensions and form of pit; building materials; use of domestic facilities (for example, reuse of *hornos*); and number of individuals per grave. We also looked at the evidence for grave-construction sequence, when this could be determined.

Body Position and Orientation

Carr (1994:41) determined that body position and orientation were influenced strongly by philosophical and religious beliefs, particularly beliefs about the afterlife, the soul's journey to the afterworld, and universal orders. We looked at the arrangement of the body and limbs in the grave (supine, prone, flexed, etc.) and the orientation of the body in terms of the cardinal directions.

Body Preparation

This variable concerns the preparation of the corpse prior to burial and includes washing, painting, sprinkling the body with pigment or other materials, and ornamentation. Carr (1994:Table 2.7) found that body preparation also reflected religious and philosophical beliefs. Accordingly, we examined variables that might reflect body preparation, such as the presence of pigment on the skeletal remains, in the grave, or on associated objects. We also examined the kinds of ornaments and their position relative to the body to determine whether the deceased had been dressed and looked for organic residues that might indicate clothing or body wrappings, such as matting.

Artifactual Accompaniments

Carr (1994:41, Table 2.7) discovered that the kinds of objects placed in the grave vary strongly according to religious and philosophical beliefs, as does the spatial arrangement of grave furniture with respect to the body and the source of accompaniments (e.g., personal possessions of the deceased, the deceased's family, etc.). Therefore, we examined the types of artifacts placed in graves and their location in the grave with respect to the body. We also attempted to assess the source of accompaniments by examining use wear, functional artifact type, and related aspects of objects.

In addition, we correlated bioarchaeological data with these variables, examining the physical characteristics of age, sex, and dental traits when available. One of the most important kinds of bioarchaeological evidence for determining ethnicity is the presence and type of cranial deformation resulting from infant cradleboarding. Child-care practices and cradleboard construction certainly reflect Bourdieu's *habitus* and, in the Southwest, have traditionally been used to distinguish cultural affiliation among the deceased (e.g., Reid and Whittlesey 1999).

Mortuary Practices in the CCP

Grave Location

Although the location of the ROW limited our exploration of intrasite spatial patterning, the spatial distribution of graves at the Vegas Ruin (AZ U:3:405/2012) and the Crane site (AZ U:3:410/2017) show a number of general similarities in both their relationships to each other and to other features at the sites (Figures 71 and 72; Table 63). At the Vegas Ruin, the burials clustered into several discrete groups. These included Group 1, with nine burials; Group 2, containing two burials; Group 3, encompassing six burials; and Groups 4 and 5 each containing nine burials.

As discussed below and in Chapter 3, the available chronological data, including stratigraphic superpositioning, do not provide an unambiguous picture of the relationship between the burials and the architectural features at the Vegas Ruin. The few cases of stratigraphic superpositioning that were documented indicate that at least some of the burials postdated the pit structures, and at least two burials, Feature 219 and 220, predated the construction of the compound wall. These burials also intruded Feature 179, a pit structure, which in turn was overlain by the compound wall. In most other cases, the relationship between the burials and the architectural components at the site was unclear; thus, some of the observed spatial relationships may be more apparent than real. With that caveat in mind, the following relationships were observed. Two of the burial groups at the Vegas Ruin, Groups 2 and 3, were located within the area defined by the Feature 1 compound. Groups 4 and 5 stretched from the northeast corner of the compound to the extramural space north of the compound. Group 1, containing Feature 220 discussed above, contained features within the compound and beneath its northwestern corner.

A similar uncertainty concerning the relationship between burials and architectural features was noted at the Crane site as well. Burials at the Crane site were identified in two areas (see Figure 72). The northernmost group, Group 1, which included Features 21, 38, 39, and 40, was located at the summit of the ridge in the same area as the architectural features. Two of these burials, Features 21 and 38, appear to have been placed within rooms. It should be noted, however, that this assessment is based solely on the proximity of these burials to remaining wall fragments. No clear evidence was observed indicating whether the burials cut through existing floors or were later covered by floors. Also, unlike the situation at the Vegas Ruin, none of the burials at the Crane site was stratigraphically below the architectural features. The remaining three burials, Group 2, at the Crane site were clustered south of the defined architectural features on the south-facing slope of the ridge. All of these features were spatially discrete—none intruded on, or were intruded by, other features.

Burial Groups and Familial Relationships

The available osteological data are equivocal on the nature of the relationship between the burial populations at the CCP sites. No osteological data were collected indicating the degree of relatedness between the individuals from the Crane site. At the Vegas Ruin, only two traits observed among the burial population, pedal symphalangism (fused digits of the feet) and Type II Klippel-Feil syndrome (a fusing of the second and third cervical vertebrae), are useful for assessing genetic relatedness (see Volume 2, Chapter 8). Pedal symphalangism was observed on two individuals from Group 4; the three individuals that expressed Type II Klippel-Feil syndrome were scattered between Groups 1, 3, and 5. If these data do reflect

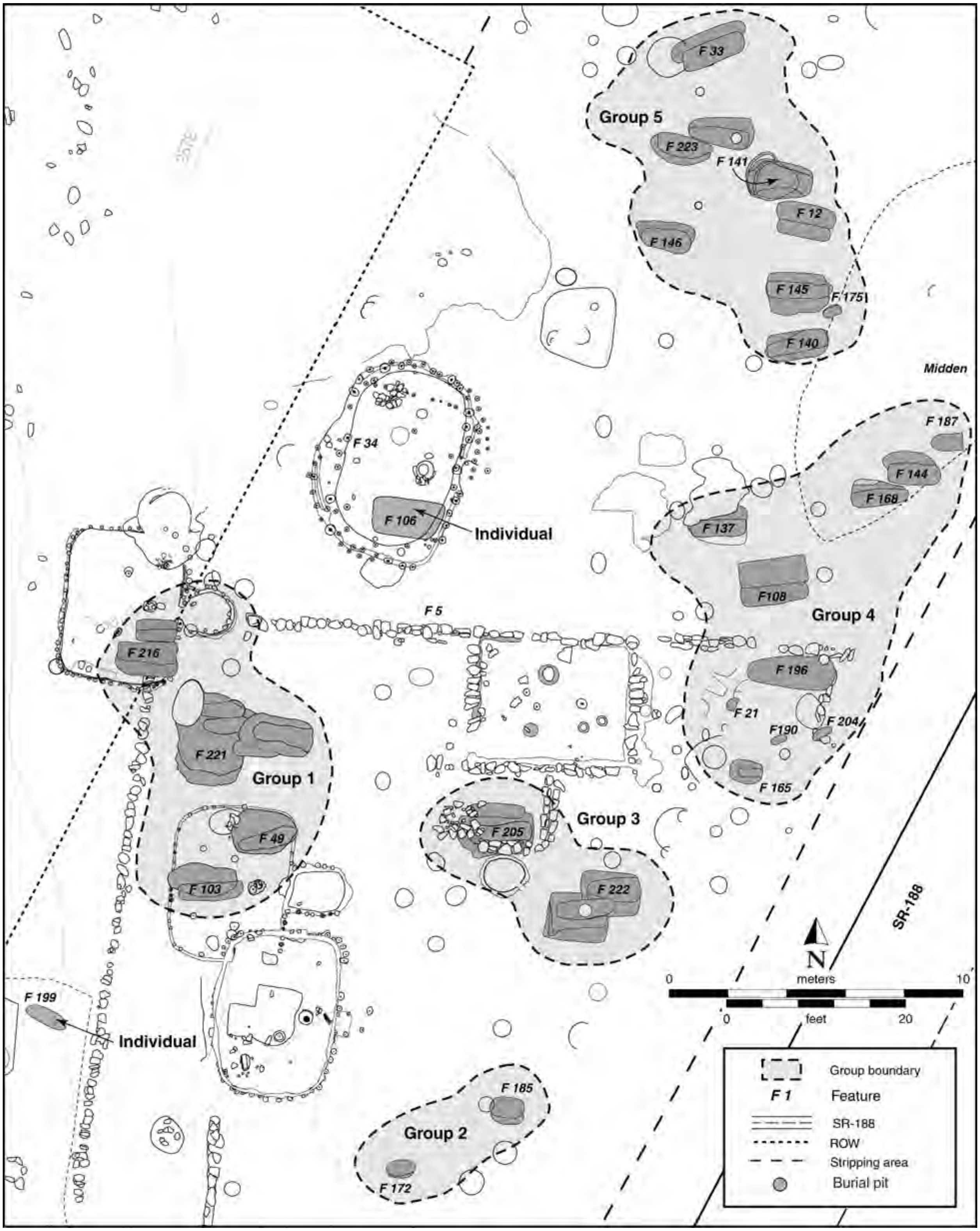

Figure 71. Locations of burial features at the Vegas Ruin (405/2012).

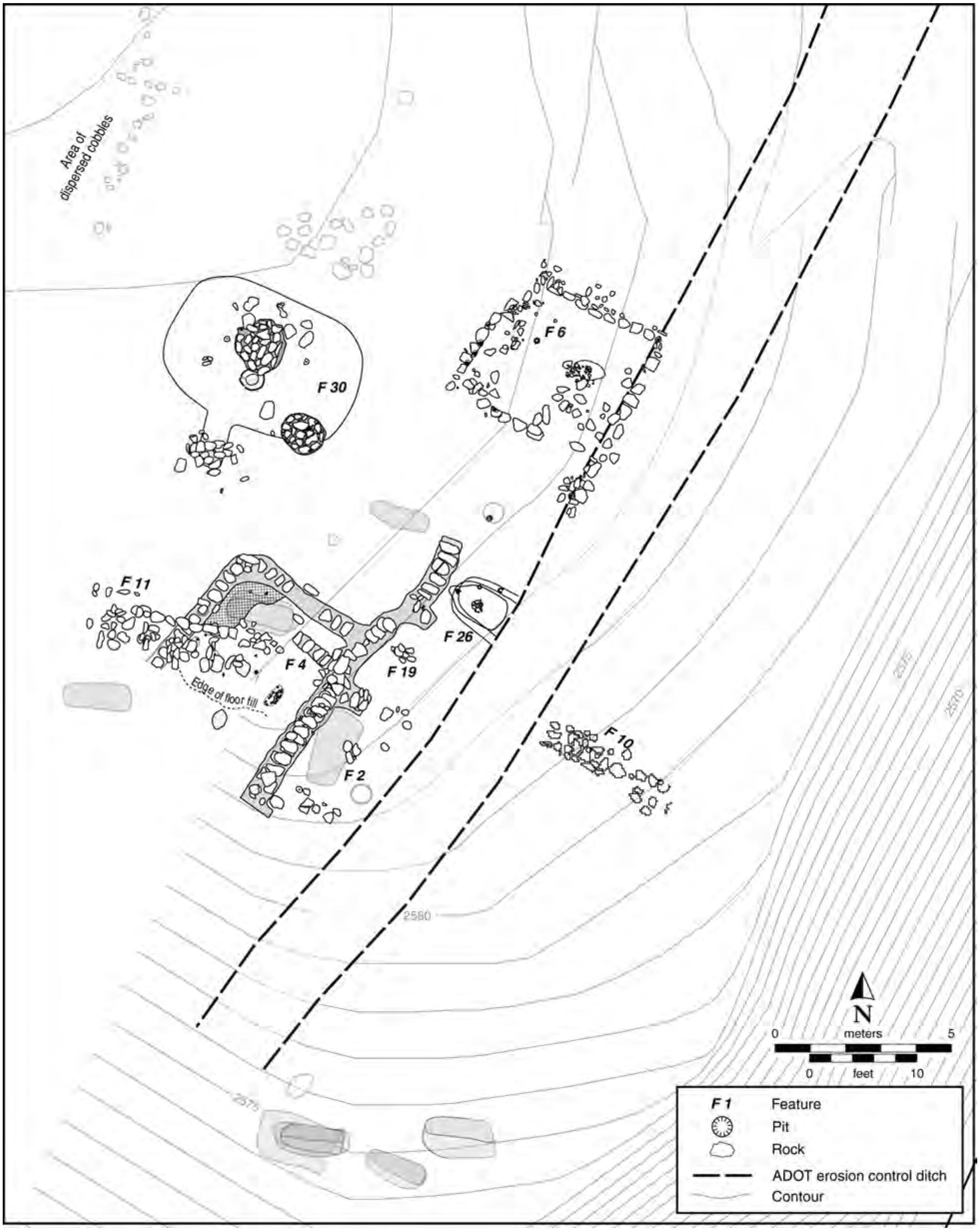

Figure 72. Locations of burial features at the Crane site (410/2017).

Table 63. Summary of Burial Data for the SR 188–Cottonwood Creek Project

Feature No. by Site	Type[a]	Burial Group	Orientation°	Sex	Age at Death
Vegas Ruin (405/2012)					
12	1a	5	289	M	10–12 years
14	1	1	82	M	40+ years
21	4	4	I	I	5–6 years
33	1b	5	241	M	18–22 years
49	2	1	72	M	41–50 years
101	2	1	103	M	31–35 years
102	1	1	88	F	50+ years
103	1b	1	93	M	31–40 years
106	1b	no group	93	M	45–55 years
108	1	4	96	M	15–17 years
133	3	1	93	F	20–23 years
137	1b	4	81	M	45–55 years
140	2	5	76	F	40+ years
141	1b	5	280	F	41–50 years
142	1a	5	95	F	30+ years
143	1b	1	93	M	50+ years
144	1a	4	264	F	55+ years
145	1b	5	97	M	41–50 years
146	1a	5	97	M	25–30 years
164	4	3	87	M	45–50 years
165	2	4	89	I	6–9 months
166	1a	5	270	F	35–40 years
168	3	4	266	F	50+ years
172	1a	2	89	I	< 3 months
175	1a	5	73	I	< 3 months
181	2	3	93	M	21–25 years
182	2	3	86	F	45+ years
185	1a	2	86	I	6–12 months
190	4?	4	71	I	newborn
196	4	4	93	F	adult
197	4	3	89	M	25–30 years
199	4?	no group	I	M	31–40 years
204	4	4	66	I	3–6 months
206	2	3	I	F	31–40 years
207	2	3	99	M	55+ years
219	1b	1	87	I	5–6 years
220	1b	1	289	M	45–50 years
Site 408/2015					
8	4?	no group	I	I	3–4 years
Crane site (410/2017)					
21	4	1	18	F	41–50 years
25	2	2	103	F	40+ years
33	3	2	97	F	40+ years

continued on next page

Feature No. by Site	Type[a]	Burial Group	Orientation°	Sex	Age at Death
36	3	2	105	I	adult
38	2	1	105	M	25–30 years
39	4	1	114	F	45–60 years
40	4	1	95	F	35–40 years

Note: Excludes Feature 187, the unexcavated burial at the Vegas Ruin.

Key: M = male; F = female; I = indeterminate

[a] Type 1a are alcove-chamber burial pits with the burial chamber cut at the same level as the bottom of the shaft, whereas Type 1b are alcove-chamber burial pits with the burial chamber lower than the bottom of the shaft. Type 2 graves are central-chamber burial pits, Type 3 are side-chamber burial pits, and Type 4 are simple burial pits (see Chapter 5, Volume 1).

a degree of genetic relatedness between the individuals involved, they speak to a general relatedness among the entire population at the Vegas Ruin, rather than at the level of the burial groups.

Grave Facility

All of the burials excavated during the CCP shared a number of basic similarities. The vast majority of the burials represent primary inhumations. The small number of secondary inhumations appears to reflect cases in which earlier burials were encountered during the construction of a later burial pit. Treatment of the human remains recovered from the primary inhumations exhibited remarkable standardization. In most cases, the body was placed in the burial pit in an extended, supine position. Arms were generally extended along the sides of the body. Funerary artifacts, most often ceramic vessels, were placed alongside the body within the burial chamber.

Grave Typology

A typology of the burials excavated during the CCP was developed to facilitate description and comparison. Although discussed in Chapter 5 of Volume 1, brief summaries of the four defined burial types are also presented here. Examples of each of the four types are illustrated in Figure 73.

Type 1

Type 1 burials, also referred to as alcove-chamber burials, consisted of a subrectangular main shaft with a niche carved into the side of the shaft near the bottom of the pit to hold the body and the funerary artifacts. Evidence from several of the Type 1 burials indicates that these niches were enclosed with a lean-to arrangement of branches and sticks. Two varieties of the Type 1 burial were observed. Type 1a burials were characterized by a niche at the same level as the bottom of the main shaft. Type 1b burials differed in that the bottom of the niche was below the level of the main shaft, creating a bench or platform alongside the burial chamber.

Type 2

Type 2 burials, also referred to as central-chamber burials, consisted of a large, subrectangular main shaft with a smaller pit centrally excavated into the bottom of the main shaft, creating a pair of benches alongside the burial chamber. The smaller, central chamber held the body and associated funerary artifacts. Following the placement of the body in the central chamber, the chamber was covered with wooden and brush cribbing. According to Scott Wood (personal communication 2005) "cribbing" may not be the appropriate term for all of these features, because cribbing implies that logs are stacked in layers, with each layer set at a 90° angle from the previous layer. In a few cases, however, we did find overlapping sticks placed at 90° angles. In several cases, small alcoves were excavated into the end of the pit near the individual's head. Additional funerary artifacts, generally ceramic vessels, were often placed in this alcove.

Type 3

Type 3 burials, also referred to as side-chamber burials, consisted of a large, subrectangular main shaft similar to that found with the Type 2 burials. Type 3 burials differed from Type 2 in that the smaller burial pit was excavated along one side of the main shaft, creating a single bench alongside the body. Fragments of cribbing found within these features indicate that, as with the Type 2 burials, the smaller burial chambers were also covered.

Type 4

Type 4 burials represented the least-elaborate of the burial types identified at the CCP sites. Type 4 burials consisted of shallow, elliptical-to-subrectangular pits into which the bodies were placed. No benches or evidence of wooden cribbing was observed in association with the Type 4 burials.

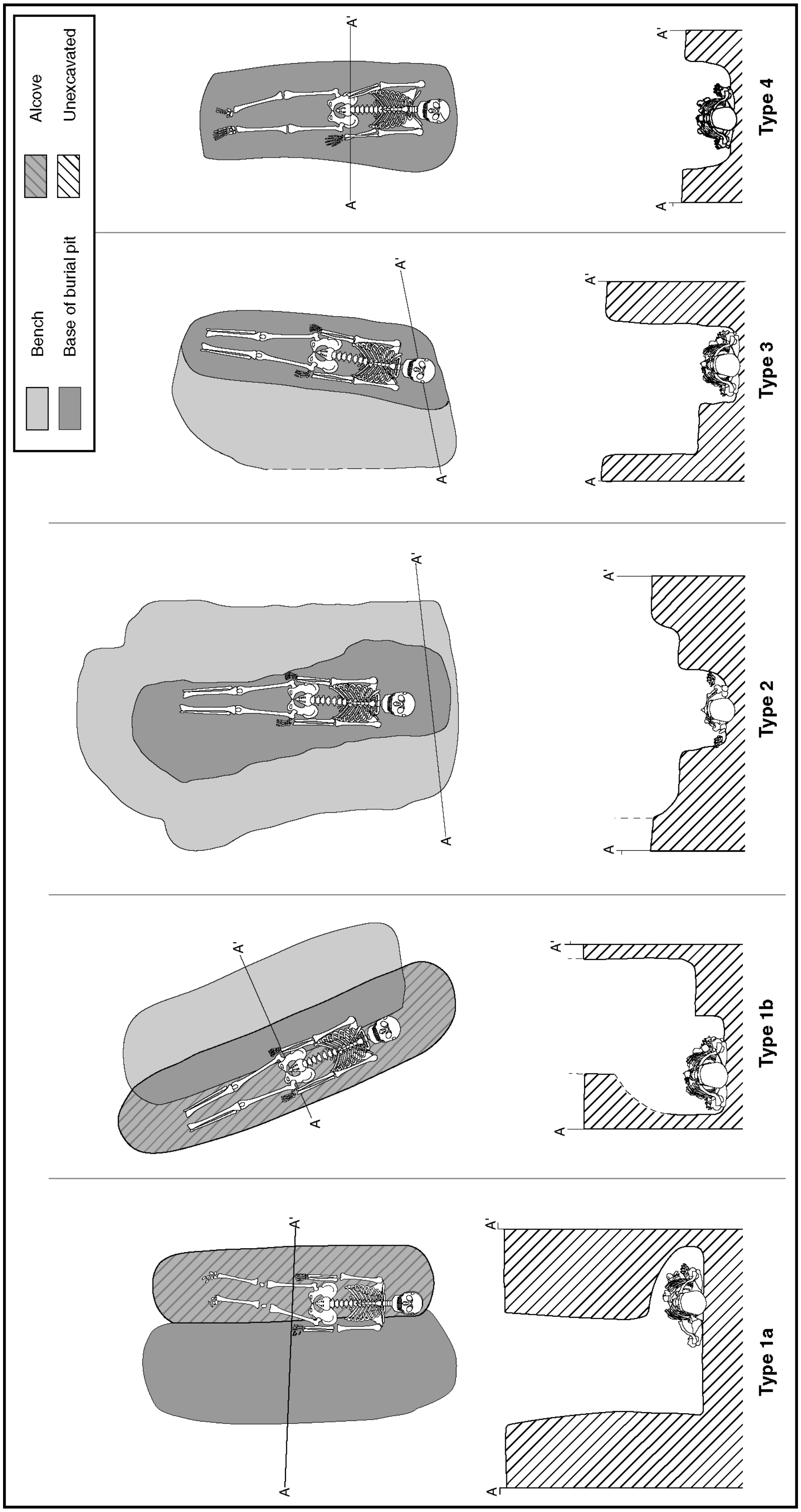

Figure 73. Examples of burial types as defined for the CCP.

Burial Plots

Whereas most of the CCP burials were identified as discrete graves, five locations at the Vegas Ruin were defined at which sequential interments intruded upon or overlaid previous burials. We refer to these groups of mortuary features as burial plots. The burials constituting the five plots were located within Groups 1, 3, and 5 (see Figure 71). The first of these, including Features 219 and 220, was located below the northwestern corner of the Feature 1 compound and represents the northernmost burials of Group 1. The second, comprising Features 14, 101, 102, 133, and 143, was also part of the Group 1 burials. The third, comprising Features 197, 206, and 207, was contained within Group 3. The fourth plot, including Features 164, 181, and 182, represents the easternmost of the Group 3 burials. The fifth plot, including Features 142 and 166, was the northernmost burial plot. The skeletal remains of two individuals, those associated with Features 14 and 206, were classified as secondary inhumations, because they were disarticulated and reinterred above the cribbing of later, intruding burials (Features 101 and 207, respectively). The disturbed mortuary artifacts associated with Features 14 and 206 were also reinterred with the disarticulated remains.

Discussion

Few patterns are readily apparent in the distribution of the four burial types. Type 1 burials dominated in all groups at the Vegas Ruin except Group 3, for which Type 2 burials were the most common (Table 64). Similarly, few patterns were observed in terms of the relationship between burial type and the sex of the deceased (Table 65). Type 1 burials were the most common among males, females, and children of indeterminate sex. The only case of absolute segregation according to sex was in the case of Type 3 burials, which were only found in association with adult females. It should be noted, however, that only 2 of the 37 excavated burials at the Vegas Ruin were designated as Type 3.

A comparison of burial type between the Vegas Ruin and the Crane site revealed one significant difference. Whereas Type 1 graves dominated the sample at the Vegas Ruin, no Type 1 burials were identified at the Crane site. Indeed, the most common interment type at the Crane site was the Type 3 burial, which, in turn, was the least common type observed at the Vegas Ruin. Like the Vegas Ruin, however, all of the Type 3 burials at the Crane site for which sex could be ascertained contained females (Table 66).

The five burial plots defined at the Vegas Ruin and the one at Crane site suggest the repeated reuse of particular areas at the site, presumably by related members of the social group. Although placed in proximity to one another, occasionally resulting in the disturbance of the skeletal materials of earlier interments, the individual burial features nevertheless reflect discrete burial events rather than instances of multiple interments. The fact that several of the earlier graves were intruded on in the process, including two instances in which skeletons of the earlier individual were completely disarticulated, may suggest that enough time had elapsed between interments that the precise location of the earlier graves was not apparent to prehistoric people, which itself would indicate that no graves markers were used. Alternatively, from a religious perspective, it is possible that corporeal remains no longer needed to be protected after sufficient time had passed, and therefore the remains could be exhumed or reorganized.

Body Position and Orientation

The sample of burials from the CCP exhibited remarkable similarity in terms of the placement of the individual within the burial pit. Nearly all of the individuals were placed in the grave in a supine position, with the arms extended along the sides. The exception was Feature 168, an adult female placed on her right side. In a small number of cases, one of the hands rested on the pelvis. All but one of the burial pits were oriented along an approximate east-west axis. The exception to this pattern was Feature 21 at the Crane site, which exhibited a more north–south orientation (see Table 63). This individual was interred within a room adjacent to a north-south-trending wall (see Figure 72). For the remaining CCP burials, the dominant pattern was the head to the east, which was observed in all but six cases. These six individuals, all identified at the Vegas Ruin, were interred with their heads to the west. The six individuals were further segregated within the excavated portion of the site, with all but one located at the northern end of Groups 4 and 5. In terms of demographics, four of the six individuals buried with their heads to the west were females over the age of 40 at the time of death. The remaining individuals were a 10–12-year-old male (Feature 12), and an 18–22-year-old male (Feature 33). Both of the latter two individuals were located in Group 5.

Body Preparation and Adornment

The most common indicator of body preparation in the CCP sample was the presence of ochre in the graves and on the skeleton. Almost half of the individuals from the Vegas Ruin were buried with ochre clumps or exhibited ochre staining on some part of the skeleton. By contrast, only two of the seven individuals identified at the Crane site exhibited ochre staining. In addition to the ochre, a small number of individuals were interred with artifacts that were apparently worn as items of personal adornment.

Table 64. Distribution of Burial Types at the Vegas Ruin (405/2012)

Type[a]	Group 1		Group 2		Group 3		Group 4		Group 5		No Group		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1a	—	—	2	100	—	—	1	11	5	56	—	—	8	22
1b	4	44	—	—	—	—	1	11	3	33	1	50	9	24
1	2	22	—	—	—	—	1	11	—	—	—	—	3	8
2	2	22	—	—	4	67	1	11	1	11	—	—	8	22
3	1	11	—	—	—	—	1	11	—	—	—	—	2	5
4	—	—	—	—	2	33	4	44	—	—	1	50	7	19
Total	9	24	2	5	6	16	9	24	9	24	2	5	37	100

Note: Excludes Feature 187, the unexcavated burial at the Vegas Ruin.

[a] Type 1a are alcove-chamber burial pits with the burial chamber cut at the same level as the bottom of the shaft, whereas Type 1b are alcove-chamber burial pits with the burial chamber lower than the bottom of the shaft. Type 2 graves are central-chamber burial pits, Type 3 are side-chamber burial pits, and Type 4 are simple burial pits (see Chapter 5, Volume 1).

Table 65. Distribution of Burial Types by Sex at the Vegas Ruin (405/2012)

Type[a]	Adult Male		Adult Female		Indeterminate Child	
	n	%	n	%	n	%
1a	2	11	3	27	3	38
1b	7	39	1	9	1	13
1	2	11	1	9	—	—
2	4	22	3	27	1	13
3	—	—	2	18	—	—
4	3	17	1	9	3	38
Total	18	100	11	100	8	100

Note: Excludes Feature 187, the unexcavated burial at the Vegas Ruin.

[a] Type 1a are alcove-chamber burial pits with the burial chamber cut at the same level as the bottom of the shaft, whereas Type 1b are alcove-chamber burial pits with the burial chamber lower than the bottom of the shaft. Type 2 graves are central-chamber burial pits, Type 3 are side-chamber burial pits, and Type 4 are simple burial pits (see Chapter 5, Volume 1).

Table 66. Distribution of Burial Types by Sex at the Crane Site (410/2017)

Type[a]	Male		Female		Indeterminate Adult	
	n	%	n	%	n	%
2	1	100	1	20	—	—
3	—	—	1	20	1	100
4	—	—	3	60	—	—
Total	1	100	5	100	1	100

[a] Type 2 graves are central-chamber burial pits, Type 3 are side-chamber burial pits, and Type 4 are simple burial pits (see Chapter 5, Volume 1).

Therefore, we distinguish between mortuary artifacts that were simply placed in the grave and those that were actually worn by the interred individual. This, unfortunately, can often only be done judgmentally.

Over one-third of the excavated burials at the Vegas Ruin contained what we interpret as artifacts of personal adornment. Of these, three were adult females, two were juveniles of indeterminate sex, and eight were adult males. The artifacts include worked shell, bone awls or hairpins, stone ornaments; these are discussed further below. Two of the seven burials identified at the Crane site contained artifacts we interpret as items of personal adornment. Feature 38, associated with a male between the ages of 25 and 30 at death, contained the richest collection of mortuary artifacts from the CCP project sample, including 18 ceramic vessels, shell beads, bone awls, and a painted wooden arrow shaft or staff.

Cranial Deformation

In cases for which it could be assessed, 85 percent of the individuals in the CCP sample exhibited occipital flattening of the skulls. In all but two of the instances in which it was observed, this flattening was symmetrical. In the remaining two cases, the occipital flattening was limited to the right side of the skull. The kind of cranial deformation exhibited in the CCP sample most likely resulted from the use of a cradle board, although it may also be attributed to premature suture closure (see Volume 2, Chapter 8).

Funerary Artifacts

Considerable diversity was observed in the kind and quantity of artifacts that accompanied the body of the deceased. Indeed, all but 2 of the 37 excavated burials at the Vegas Ruin and 1 of the 7 burials at the Crane site contained funerary artifacts. To facilitate a spatial analysis of the funerary artifacts, we defined six zones within the burial pit in relation to the body (Figure 74). Zone 1 includes the area within the burial pit above the cranium. Zone 2 includes the area between the tip of the cranium and the shoulders. Zone 3 extends from the shoulders to the midpoint of the pelvis. Zone 4 includes the area between the midpoint of the pelvis and the knees. Zone 5 extends from the knees to the feet. And finally, Zone 6 includes the area within the burial pit below the feet. We also recorded whether the funerary artifacts were placed to the right, left, or on top of the body. Zone 10 corresponds to upper burial fill, and Zone 999 was ascribed to vessels from disturbed burials.

Ceramic Containers

Although several classes of artifacts were interred as funerary goods, including stone, shell, and bone, the vast majority of burials containing artifacts contained at least one ceramic container. Following work by Heckman (see Chapter 4, this volume, and Volume 2, Chapter 2), we divided the collection into several broad functional categories based on vessel morphology. The functional categories reflect four broad domestic activities: liquid storage, dry storage, cooking, and serving/eating. A number of blended categories were also included in the analysis to accommodate vessels whose metric attributes crosscut multiple functional types. The distribution of these vessels was then recorded in terms of the zones described above.

Data on the distribution of ceramic containers recovered from all graves at the Vegas Ruin and the Crane site are presented in Tables 67 and 68, respectively. Although ceramic vessels were recovered from each of the defined zones, several general patterns are evident, as are a number of site-specific differences. First, when the burials from each site are treated as single populations, it appears that placement of many of the vessel types within the grave was largely a random process. When considering vessels regardless of function, similar numbers of vessels were recovered from each of the zones at both the Vegas Ruin and the Crane site. A similar randomness is apparent in the distribution of most vessels of like function. Exceptions to this can be seen in the case of liquid-storage vessels, where the highest numbers were recovered from Zones 1 and 2 (above and near the head) and with vessels associated with food preparation and cooking, which were found in slightly elevated proportions in Zones 2 and 3 (head and upper body). It should be noted, however, that liquid-storage, food-preparation, and cooking vessels were recovered from all burial zones at both sites.

When grouped according to the sex of the deceased, the spatial distribution of the functional ceramic types exhibited both commonalities and differences. Tables 69 and 70 present the locations of mortuary ceramics at the Vegas Ruin for males and females, respectively. Because sex could not be determined with confidence for several individuals, the totals for these do not match the composite tables cited above. Not surprisingly, several of the patterns observed for the composite data described above are also apparent when the burials are segregated by sex. For both males and females, for example, most liquid-storage containers were recovered from Zones 1 and 2. Food-preparation vessels were distributed relatively evenly between zones for both males and females. One pattern also shared between males and females is the relatively small percentage of vessels recovered from Zone 4, the area between the pelvis and the knees. Vessels recovered from this zone were limited to those used for food-preparation/cooking, food preparation/serving/eating, and liquid storage.

Similar patterns were observed at the Crane site (Tables 71 and 72). It should be noted, however, that the data from the Crane site are dominated by a single burial of an adult male, Feature 38, who was buried with 18 of the total 34 mortuary vessels recovered at the site. As observed

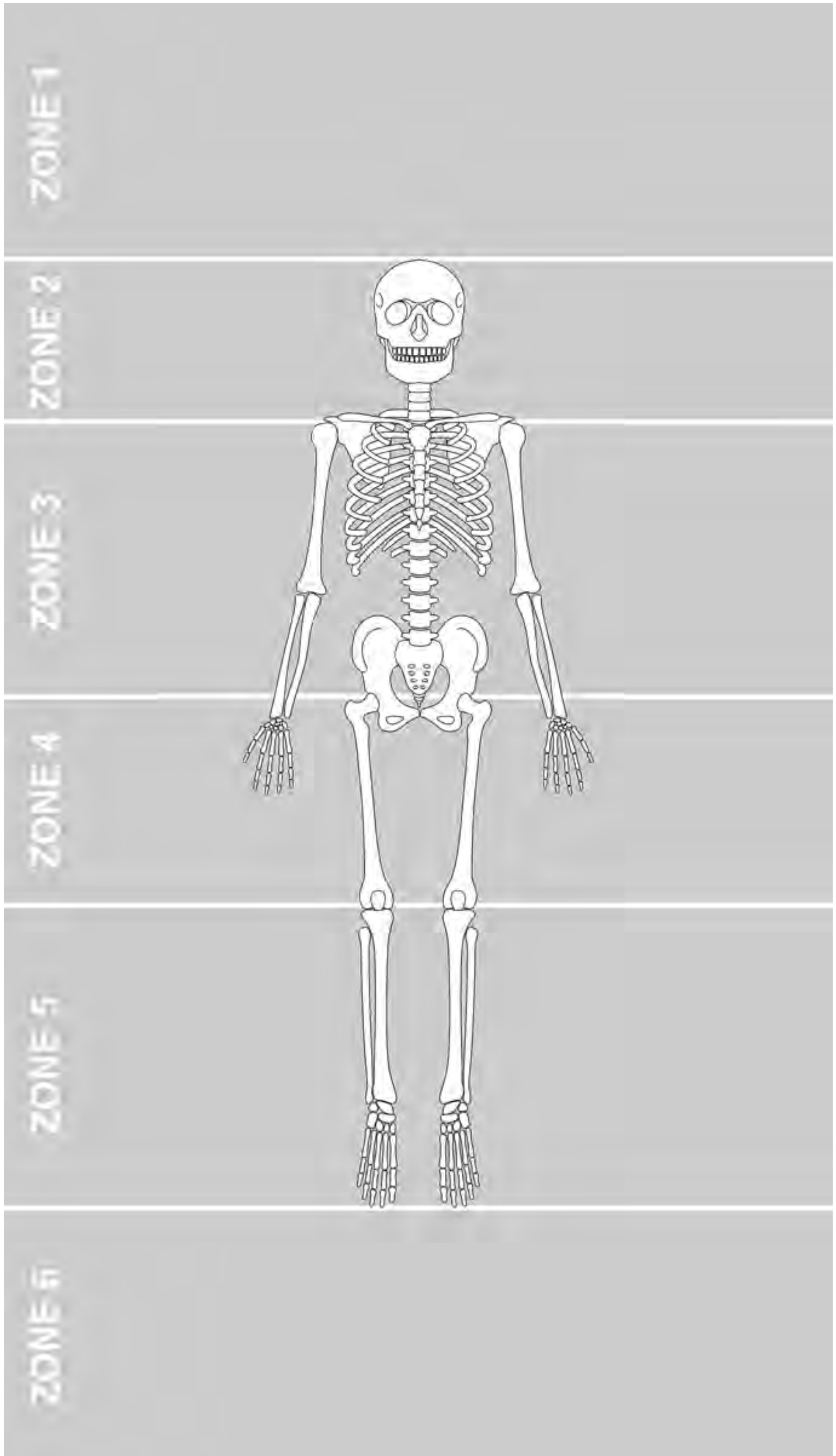

Figure 74. Locations of burial zones as defined for the CCP.

Table 67. Distribution of Ceramic Vessels by Burial Zone at the Vegas Ruin (405/2012)

Zone	Cooking	Dry Storage/ Liquid Carrier	Food Preparation/ Serving/ Eating	Food Preparation/ Cooking	Ladle	Liquid Carrier/ Liquid Storage	Liquid Carriers	Liquid Storage	No Function Assigned	Scoop	Total
1	4	1	7	4	1	—	1	17	3	—	38
2	1	—	11	9	—	2	3	14	—	—	40
3	2	—	13	13	—	—	1	3	2	1	35
4	—	—	4	4	—	—	—	2	—	—	10
5	3	—	8	8	—	—	—	3	2	—	24
6	—	—	7	4	—	1	—	3	1	—	16
10[a]	—	—	1	—	—	—	1	—	1	—	3
999[b]	—	—	6	3	—	—	—	1	1	1	12

Note: Burial zones are depicted in Figure 74.
[a] Vessels found in upper burial fill.
[b] Fragmentary vessels from disturbed burials where the vessel's original position was unclear.

Table 68. Distribution of Ceramic Vessels by Burial Zone at the Crane Site (410/2017)

Zone	Cooking	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Liquid Storage	Liquid Storage/ Dry Storage	No Function Assigned	Total
1	—	—	—	1	1	—	2
2	1	—	4	2	—	1	8
3	2	1	3	1	—	1	8
4	1	2	3	1	—	—	7
5	—	1	2	1	—	—	4
6	—	—	1	1	—	1	3
10[a]	—	—	—	—	—	1	1

Note: Burial zones are depicted in Figure 74.
[a] Vessels found in upper burial fill.

Table 69. Distribution of Ceramic Vessels in Graves of Adult Males at the Vegas Ruin (405/2012)

Zone	Cooking	Dry Storage/ Liquid Carrier	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Liquid Carriers	Liquid Storage	Scoop	No Function Assigned	Total
1	2	1	6	2	1	10	—	2	24
2	—	—	6	3	2	7	—	—	18
3	1	—	9	8	—	3	1	1	23
4	—	—	4	2	—	1	—	—	7
5	2	—	5	6	—	3	—	2	18
6	—	—	2	4	—	2	—	—	8
10[a]	—	—	—	—	1	—	—	—	1
999[b]	—	—	4	—	—	—	1	—	5

Note: Burial zones are depicted in Figure 74.
[a] Vessels found in upper burial fill.
[b] Fragmentary vessels from disturbed burials where the vessel's original position was unclear.

Table 70. Distribution of Ceramic Vessels in Graves of Adult Females at the Vegas Ruin (405/2012)

Zone	Cooking	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Ladle	Liquid Carrier/ Liquid Storage	Liquid Storage	No Function Assigned	Total
1	1	1	2	1	—	7	—	12
2	1	5	2	—	—	7	—	15
3	—	2	4	—	—	1	1	8
4	—	—	1	—	—	1	—	2
5	1	3	2	—	—	—	—	6
6	—	4	—	—	1	1	1	7
999 [a]	—	—	2	—	—	—	1	3

Note: Burial zones are depicted in Figure 74.
[a] Fragmentary vessels from disturbed burials where the vessel's original position was unclear.

Table 71. Distribution of Ceramic Vessels in Grave of the Adult Male at the Crane Site (410/2017)

Zone	Cooking	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Liquid Storage	Liquid Storage/ Dry Storage	No Function Assigned	Total
1	—	—	—	1	1	—	2
2	1	—	1	—	—	—	2
3	1	—	1	—	—	1	3
4	1	1	3	1	—	—	6
5	—	1	1	1	—	—	3
6	—	—	1	1	—	—	2

Note: Burial zones are depicted in Figure 74.

Table 72. Distribution of Ceramic Vessels in Graves of Adult Females at the Crane Site (410/2017)

Zone	Cooking	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Liquid Storage	No Function Assigned	Total
2	—	—	3	2	1	6
3	1	1	2	1	—	5
4	—	1	—	—	—	1
5	—	—	1	—	—	1
6	—	—	—	—	1	1
10 [a]	—	—	—	—	1	1

Note: Burial zones are depicted in Figure 74.
[a] Vessels found in upper burial fill.

for the Vegas Ruin, mortuary vessels were recovered from all of the designated zones within the graves of both males and females. Similarly, in the graves of females, most vessels were recovered from Zones 1 and 2, including all liquid-storage and most food-preparation/cooking vessels.

Because the burial populations at the Vegas Ruin and the Crane site were dominated by adults, age-specific patterns in the distribution of mortuary ceramics are not readily apparent. Using Grindell's (2005) tripartite age division, the burial population at the Vegas Ruin included 9 children (0–12 years), 1 adolescent (13–19 years), and 27 adults. Because all of the burials from the Crane site were adults, age-specific patterns can only be considered for the Vegas Ruin. In the case of children, one of the most apparent differences is in the relatively low diversity of ceramic types found as mortuary artifacts (Table 73). Only four vessel-function types, cooking, food preparation/serving/eating, food preparation/cooking, and liquid storage, were represented in the graves of children at the Vegas Ruin. When considered in their entirety, the distribution of these vessels in the graves largely adhered to the general patterns described above, including a slight preference for placing the burial vessels next to or above the head. The graves of adolescents exhibited a similar pattern of low functional

Table 73. Distribution of Burial Vessels in Graves of Children (0–12 Years) at the Vegas Ruin (405/2012)

Zone	Cooking	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Liquid Carrier/Liquid Storage	Liquid Carrier	Liquid Storage	Total
1	1	—	—	—	—	—	1
2	—	—	3	1	1	1	6
3	1	1	1	—	—	—	3
4	—	—	1	—	—	—	1
6	—	1	—	—	—	—	1
10	—	1	—	—	—	1	2
999 [a]	—	1	1	—	—	—	2

Note: Burial zones are depicted in Figure 74.

[a] Fragmentary vessels from disturbed burials where the vessel's original position was unclear.

Table 74. Distribution of Burial Vessels in Grave of the Adolescent (13–19 Years) at Vegas Ruin (405/2012)

Zone	Cooking	Food Preparation/ Serving/Eating	Food Preparation/ Cooking	Liquid Carriers	Liquid Storage	Total
2	—	—	—	1	—	1
3	—	1	—	—	—	1
5	1	—	1	—	—	2
6	—	—	—	—	1	1

Note: Burial zones are depicted in Figure 74.

diversity, with a single liquid-carrier container representing the only additional category from the burials of children burials (Table 74). The distribution of the vessels within the admittedly small sample of adolescents' graves exhibited slight differences from the patterns outlined above. Unlike the other classes, most of the vessels were recovered from the mid to lower portion of the body—all but one of the vessels were recovered from Zones 3, 5, and 6. No mortuary vessels were recovered from Zone 1.

Distribution of Imported Ceramics

Although the ceramic collection from the mortuary features at the Vegas Ruin and the Crane site were both dominated by examples of Salado Red and Salado Red Corrugated, a small number of painted "imported" vessels were also identified. A list of these vessels and the burial features that contained them is presented in Table 75. The collection of 17 imported painted vessels from the Vegas Ruin includes 10 examples of Little Colorado White Ware, 7 examples of Cibola White Ware, and 1 specimen of Roosevelt Red Ware. With the exception of the two infant burials that constitute Group 2, imported ceramics were represented in all of the other burial groups irrespective of age and sex.

Nonceramic Artifacts

Twenty-one of the burials from the Vegas Ruin and 6 from the Crane site contained nonceramic mortuary artifacts. Based on the position of these artifacts in relation to the body, several are designated as objects of personal adornment and are discussed above. The remaining nonceramic mortuary artifacts are summarized here.

Projectile Points

Only one of the burials identified at the Crane site, Feature 38, contained a projectile point. Projectile points were recovered from nine of the burials at the Vegas Ruin. Three of the burials were adult females and six were males, although Feature 12 was determined to be male solely based on the presence of six projectile points in the grave. Two of the females had a single projectile point and one had two. The largest quantities of projectile points were recovered from Features 33 and 137, both adult males. Feature 33 contained 16 projectile points arranged in three clusters: one above the head, one adjacent to the right humerus, and a third over the right chest. The Feature 137 burial contained 24 projectile points, 21 of which were placed in a single cluster adjacent to the left femur.

Stone Ornaments

Six individuals at the Vegas Ruin and one at the Crane site were buried with stone ornaments. All of the individuals

Table 75. Distribution of Imported Mortuary Vessels at the Vegas Ruin (405/2012) and the Crane Site (410/2017)

Site/Feature	Burial Group	Sex	Age Group	Painted Mortuary Vessels
Vegas Ruin (405/2012)				
12	5	male	child	Roosevelt Black-on-white bowl
33	5	male	adult	Roosevelt Black-on-white bowl 2 Walnut Black-on-white bowls
49	1	male	adult	Walnut Black-on-white bowl Reserve Black-on-white jar
106	no group	male	adult	Roosevelt Black-on-white bowl
108	4	male	adolescent	Snowflake Black-on-white jar
137	4	male	adult	Leupp Black-on-white bowl
144	4	female	adult	Snowflake Black-on-white bowl
146	5	male	adult	2 Walnut Black-on-white bowls Snowflake Black-on-white jar
190	4	indeterminate	child	Snowflake Black-on-white jar
206	3	female	adult	Walnut Black-on-white bowl
207	3	male	adult	Reserve Black-on-white jar Pinto Black-on-red bowl
Crane Site (410/2017)				
21	1	female	adult	Pinto Polychrome Bowl
33	2	female	adult	Tularosa or Pinedale Black-on-white bowl

were adults—five males and two females. No spatial relationship could be discerned; stone ornaments were found in burial Groups 1, 3, 4, and 5. The beads and pendants were usually crafted of turquoise, although argillite and steatite were also used. The individual with the greatest quantity of ornaments was Feature 181, a male in his early twenties, who was buried with five turquoise pendants. Three of the pendants were found to the left of his head, and may have been worn as earrings. The other two pendants were recovered from the burial fill.

Painted Wooden "Staffs"

One burial at the Vegas Ruin (Feature 12) and one burial at the Crane site (Feature 38) contained the fragmentary remains of wooden "staffs" that apparently had been painted with green, red, and black pigment. The extremely poor preservation of all of the staffs precluded a reconstruction of any pattern that may have been present. Both of the individuals buried with the wooden staffs were males; the Vegas Ruin burial was an adolescent, whereas the Crane site burial was an adult. In both cases, the wooden staffs were placed in the graves along the left side of the deceased.

Bone Awls or Hairpins

Several burials contained worked bone artifacts interpreted as either awls or hairpins. Most were made from artiodactyl metapodials. Based on their locations within the grave, several appear to have been worn by the individual when they were interred. These are discussed above in the section on personal adornment. Three burials contained bone awls that, based on their recovery context, were probably not items of personal adornment. These include Feature 38 at the Crane site, which included the remains of an adult male, and Features 137 and 181 at the Vegas Ruin, which was also associated with adult males. A fourth burial, Feature 206 at the Vegas Ruin, also contained a bone awl. Because this burial had been disturbed by a later interment, it is unclear whether or not the bone awl/hairpin was worn by the individual, an adult female.

Worked Shell

Nine individuals were buried with worked shell, including seven at the Vegas Ruin, one at the Crane site, and one at AZ U:3:408/2015. The shell was limited to personal adornment artifacts, including beads, pendants, and bracelets. There was no correlation between the presence of shell artifacts and the age or sex of the deceased. Three of the individuals were juveniles of unknown sex, five were adult males, and one was an adult female. The Vegas Ruin burials were spatially dispersed among Groups 1, 3, 4, and 5. The greatest quantity of shell was buried with an adult female (Feature 166 at the Vegas Ruin) and the second greatest quantity of shell was buried with a young adult male (Feature 33 at the Vegas Ruin). The female wore beads on her right wrist and both ankles, totaling 106 beads. The beads were crafted from *Olivella fletcherae* and unidentified marine shell. The 18–22-year-old male was buried with 60 *Olivella* sp. beads around his neck. The other seven burials contained significantly less worked shell; none contained more than seven examples. *Glycymeris* bracelets were worn by two individuals, Feature 38 at the Crane site and Feature 220 at the Vegas Ruin. Another *Glycymeris* bracelet was recovered from the fill above Feature 8 at Site 408/2015, but it was not directly associated with the burial.

Miscellaneous Mortuary Objects

A diverse array of flaked and ground stone tools was recovered from burials. The most common lithic artifacts were modified flakes, manos, hammer stones, and cores; each type was recovered from at least five burials. Tabular tools, scrapers, choppers, metates, shaft straighteners, burins, and drills were recovered in smaller quantities. There was no patterning in the distribution of these artifacts among different sex, age, or burial groups. A small number of additional objects were recovered from burials at the Vegas Ruin. Feature 12, which contained the remains of an adolescent, produced three caudal vertebrae from a gray fox. These were recovered adjacent to the left hand below the painted wooden staff. Although entirely speculative, it is possible that this represents a fox tail that was attached to the staff. Other burial artifacts include the fragmentary remains of a painted basket recovered from the upper fill of Feature 145, an adult male, and a cluster of primary, secondary, and tertiary chert flakes (all made from chert or basalt) found in a cluster immediately left of the cranium of the adult male in Feature 137. None of these flakes shows evidence that they had been used as tools. This individual also possessed a small quartz crystal that was recovered near the left hand.

Summary

The data on burial treatment and mortuary artifacts discussed above suggest that although cultural preferences existed concerning the treatment of the dead, the parameters that were in existence allowed for considerable variability. People could be buried with a wide variety of ceramic vessels, items of personal adornment, stone and bone tools, and perishable items, such as wooden staffs and painted baskets. From this diversity a number of general trends can be seen that may reflect a cultural standard. It should be noted that only a small number of individuals—two adult men and one adult dwarf of indeterminate sex—were interred without accompaniments. Although children were often buried with fewer accompaniments than adults, all of the children were buried with at least one mortuary artifact. We close this section with a brief discussion of the commonalities of mortuary treatment.

Ochre was found in 43 percent of the burials at the Vegas Ruin and 29 percent of those at the Crane site. The application of ochre crosscut both gender and age categories. Although the location of the ochre in the grave varied, no intentional patterning was evident. Ochre staining on the bones of most of the individuals suggests that it was applied directly to the body or clothes, perhaps after the individual was interred.

By far, the most common class of mortuary artifacts was ceramic containers. Indeed, the majority of burials containing mortuary artifacts had at least one vessel. As noted in Chapter 4 of this volume, ware patterns on many of the vessels indicate that the mortuary vessels were drawn from the general domestic assemblage, although extra-large storage vessels were not represented in the mortuary assemblage. It is perhaps not stretching the limits of verisimilitude to suggest that the pots were the personal property of the deceased rather than reflecting an assemblage created specifically for interment. This assessment can probably be extended to the other classes of mortuary artifacts as well.

Although a number of patterns were observed concerning the relationship between types of burial artifacts and specific demographic categories, the correlations were often weak. Variability was largely in the form of differing percentages of artifacts rather than an exclusive segregation—no artifact type found in multiple burials was exclusively associated with any demographic group. This broad similarity in burial treatment extended to the spatial groupings identified at the sites as well.

Site-Level Demographics

One of the questions considered during the analysis of the mortuary features identified at the Vegas Ruin and the Crane site concerns the relationship between the interred and the people who presumably lived at the site. These data could then be used to assess the broader nature of the cemeteries. Did they serve only the immediate, resident population, or did they serve a wider area, perhaps linking the populations of several small habitation sites? To address these questions, we begin with a brief discussion of the archaeological correlates of population. We turn then to an assessment of the CCP data.

Archaeological Estimates of Population

The estimation of the size of the resident population of archaeological settlements is an important prerequisite for the investigation of a variety of research issues. It is not surprising that the archaeological literature contains numerous proposals for deriving estimates of prehistoric populations from archaeological data. Several studies have used ethnographically derived data from settlements with environmental and architectural variables similar to those being investigated archaeologically to develop models relating site size with population (Kramer 1980; Sumner 1989). These studies have demonstrated a close link between population and how space is used within a settlement, indicating that simple formulas linking site area to population are unlikely to address the question adequately. Weissner, for example, used ethnographic data to support her claim for a link between socioeconomic organization and population density (Weissner 1974). In the case of mobile foragers, population is generally proportional to the radius of the camp. With sedentary agriculturalists, population appears to be proportional to total habitation area. Finally, in the case of urban settlements, population often correlates with settlement volume, because such settlements tend to expand up as well as out. In the case of stratified urban sites, however, the calculation of settlement volume for any given occupational phase would be difficult at best. Therefore, if site type can be controlled for, such approaches are useful for providing gross estimates of unexcavated sites that have only been identified through surface reconnaissance.

The methods outlined above have some obvious limitations. Foremost among these is that there is no way to control for variability in the density of occupation at a given site. Clearly, dispersed Hohokam settlements would be expected to have much lower total populations than an aggregated pueblo covering a similar area. Second, although they allow for estimates of population at the scale of the settlement, they do not provide a means of estimating the size of smaller-scale social groups, such as individual households. To address this problem, several studies have attempted to demonstrate a link between population and architectural space as defined through excavation. Most of these methods looked at the size of the social group inhabiting discrete structures. Perhaps the most cited of these efforts is Naroll's (1962) study of the relationship between population and floor space. Using cross-cultural data selected from Murdock's World Ethnographic Sample, Naroll argued that an allometric relationship exists between population and available roofed space. From his comparative database, Naroll estimated that the population of an archaeological site could be estimated as being "one-tenth of the floor area in square meters occupied by its dwellings" (Naroll 1962:588). In other words, each individual would require 10 m^2 of roofed space. By framing the relationship between population and settlement size in this manner, archaeologists were able to estimate population for individual structures as well as entire settlements.

Since the publication of Naroll's article, several researchers have worked to refine his estimate through the analysis of additional data derived from ethnographic and ethnoarchaeological studies (Cook and Heizer 1968; Hassan 1981; Kramer 1980; LeBlanc 1972). In his short reappraisal of Naroll's model using data unavailable in 1962, LeBlanc emphasized the significant cross-cultural variability in the ratio of population to available floor space (LeBlanc 1972:211). The ratio of population to floor space in the three additional case studies included by LeBlanc ranged from a low of 9.8 m^2 per person for residence of the Samoan village of Fasito'otai to 24.1 m^2 at Hasanabad, the pseudonymous Iranian village investigated by Patty Jo Watson between 1959 and 1960 (Watson 1979). Further variability in this ratio was offered by Sumner (1989), who used aerial photographs and census data for settlements in the Kur River Basin in Iran to arrive at a figure of 36 m^2 of roofed space per person. Like Naroll, LeBlanc and Sumner included all roofed space in their analyses, regardless of its function. Although it perhaps does not pose a problem for the comparison of settlements with similar subsistence and settlement strategies, the incorporation of all roofed space in arriving at a ratio of population to floor space, which included space used as animal stables, limits the cross-cultural applicability of the model.

In a study perhaps more germane to the Southwest, Cook and Heizer used data gathered from aboriginal cultures in 30 regions of California to arrive at an alternative ratio of population to floor space (Cook and Heizer 1968). Cook and Heizer found that the amount of space required per individual varied according to the number of individuals in the household. Beginning with a core household of six individuals sharing 120 square feet, or approximately 1.85 m^2 per person, each additional individual would require an additional 100 square feet, or approximately 9.29 m^2. Thus, as household size increases, so would the amount of space available per person, until an upper limit of 100 square feet per person is achieved (Cook and Heizer 1968:115). They further observed that most houses were occupied by six to seven individuals, representing a single nuclear household.

The CCP Sample

Several factors associated with the CCP sample hinder any investigation of settlement demography. First, deriving an accurate estimate of resident population for the Vegas Ruin and the Crane site is made more difficult by the limits of the project ROW. Unknown portions of both sites were undoubtedly destroyed during the construction of SR 188, a problem that was probably more acute at the Crane site. At the Vegas Ruin, a second compound of unknown size was identified immediately west of the excavated Feature 1 compound. It is also likely that the pit-structure component likewise extended well beyond the limits of the ROW. This uncertainty concerning the completeness of the sample extends to the burial features. At least one of the burials in Group 4, Feature 187, extended beyond the limits of the excavation. Several burials in Group 1 also extended beyond the western edge of the excavation. Because of these factors, any estimates of population or number of burials associated with the project sites must be seen as gross approximations only.

A second factor affecting our assessment of the relationship of the resident population to the burial population is temporal in nature. As indicated above, stratigraphic data from the Vegas Ruin indicates that at least some of the burials postdate the pit-structure occupation and predate the construction of the Feature 1 compound. It is unlikely, however, that the burials represent a discrete component separate from the pit-structure and compound occupations at the site.

In spite of these limitations, the following assessment of population for the Vegas Ruin and Crane site can be offered. Using Cook and Heizer's estimate of a maximum of six individuals per house and taking into account the limited stratigraphic superpositioning, the excavated sample at the Vegas Ruin represents a maximum occupation at any one time by three nuclear families representing at most 18 individuals during the component represented by pit structures. Although the evidence about the later occupation at the site is less complete, even fewer individuals are expected.

The low number of infants and children in the CCP burial population calls into question the representativeness of the mortuary sample. All of the burials at the Crane site and 25 of the 37 excavated burials in the Vegas Ruin sample were adults. The fact that a small number of infants and subadults (about 30 percent of the total) were recovered from the Vegas Ruin suggests that infant inhumation was an acceptable burial practice. Ethnographic accounts and archaeological studies suggest that subadults account for up to one-half of the death rate in preindustrial societies (Gruber 1971:64; Mosothwane and Steyn 2004:49; Ucko 1969:271). Therefore, we need to consider what factors can explain this apparent underrepresentation of infants and children. One possibility is that there was a spatial segregation of children and infants at the site, and the location fell outside the investigated portion of the site. A well-known pattern in the Southwest is burial of infants in house floors, something that was not present in our sample. Although the data for the Crane site are consistent with this explanation, the presence of children and infants among the burial population at the Vegas Ruin indicates that, at least in some cases, spatial segregation by age was not practiced. Two other reasons have been suggested for the low percentage of subadults: greater decomposition of subadult bone or subadults were surviving to adulthood at an unexpectedly high rate (Turner et al. 1994b). All in all, it is likely that an unknown percentage of the burials associated with the Vegas Ruin and the Crane site were not identified.

Even with the above limitation, these data suggest that the mortuary populations at the Vegas Ruin included at least some nonresident individuals. Given a maximum of 18 individuals at any one time, at least two full generations would be required to account for the known burial population. As indicated above, however, it is probable that the burial population is incomplete, perhaps most clearly reflected in the relatively small number of graves of infants and children that were identified. Thus, the population represented by the burials at the Vegas Ruin, and perhaps the Crane site as well, were likely drawn from populations beyond the immediate residents of the sites.

Comparisons

With the ability of variability in mortuary practices to inform on ethnicity as our major premise, we examined treatment of the dead in central Arizona settlements spanning the period encompassing the traditionally defined Miami and Roosevelt phases as a baseline for comparisons with the CCP. Selection of projects and sites was designed to provide a sampling of comparative contexts during and after the "pre-Classic–Classic period" transition and included the Tonto Creek area, Lower Tonto Basin, and adjacent regions, such as the Globe Highlands and the Grasshopper Plateau. Sites were chosen on the basis of overall similarity to the CCP sites in architecture and dating, preservation, extent of excavation, and completeness of reporting; exceptions and problems are noted where applicable. In most cases, the comparison does not consider the disturbed and disarticulated secondary interments that typically were found at most sites. We recognize that this sample probably is not completely representative but addressing the entire excavated sample in this region, which has expanded enormously in recent years as a result of CRM archaeology, was a task far beyond the scope of the current project.

For comparative purposes, we also looked at late pre-Classic period practices in Tonto Basin, one Gila phase site, and late Classic period sites located in the Salt River Valley. Because our objective was not to revisit the regional chronology, a task taken up elsewhere in this volume, we accept the dating of sites at face value, recognizing that reported phase assignments and calendrical placement may be problematic (see Chapter 3). In addition, some of the Roosevelt phase contexts discussed below include Gila phase components. Information from mixed contexts is presented separately when possible.

Pre-Classic Period

We begin our comparisons with the late pre-Classic period to establish a baseline to contrast with the mortuary practices of the Miami and Roosevelt phases. The sample of burials dating to this period is much smaller than the Classic period sample, however, which may have affected our conclusions in unknown ways. As will become evident later in our comparisons, there are striking differences between late pre-Classic period and Classic period mortuary practices. The most obvious aspect of the former period was the amount of variability in mortuary practices. Two burial modes were used—cremation and inhumation—rather than the single practice of inhumation that was used during the Miami and Roosevelt phases. In addition, there apparently were two different types of cremation practices.

Cremation

We begin with cremation. The first type of cremation used at this time was primary cremation. This burial mode was found in the Upper Tonto Basin and in the Globe Highlands. Several features found at the Hilltop site (AZ O:15:53/539 [ASM/TNF]) in the Upper Tonto Basin were identified as crematoria based on their similarity to features at a nearby site and the presence of "small amounts of cremated bone" (Craig 1992c:182). These oval or subrectangular pits of varying size had burned walls and floors that varied in the intensity of burning and were surrounded completely or partially by rocks. Although masonry rooms were present at the site, most painted ceramics were Sacaton Red-on-buff (Craig 1992c:185). This cremation type could be a development from the four-post primary cremation practice found at the earlier Deer Creek site (Swartz 1992a), sites on the Fort Apache Indian Reservation (Halbirt and Dosh 1992), and the JR site (AZ V:9:325/02-907 [ASM/TNF]) in the Globe Highlands (Berg, Bushèe, et al. 2003). Elson et al. (1992) have proposed that the four-post primary cremation practice represents an indigenous, regional cultural tradition in central Arizona. If the later primary cremations were linked, as aspects of the morphology and technological style suggest, this cremation mode also may represent a local tradition.

The second type of cremation was secondary cremation. This burial mode was practiced throughout Tonto Basin, although it was less common in the upper basin and in adjacent areas. One secondary cremation assigned to the Sacaton phase was found at the JR site in the Globe Highlands, which was excavated during the SR 88–Wheatfields Project (Wheatfields). The site was located on a ridge west of Pinal Creek in the southern part of the Wheatfields project area. The site consisted of 12 pit structures and a masonry room that were adjacent to a masonry compound outside the project ROW. The cremation was intruded into the fill of a Santa Cruz phase pit structure and was accompanied by portions of three Gila Plain vessels that were scattered over the skeletal remains. Based on the age of the pit structure and technological aspects of the ceramics, the cremation was assigned to the Sacaton phase (Berg, Bushèe, et al. 2003:Table 48; Bushèe and Berg 2003:70).

The Meddler Point site (AZ V:5:4/26 [ASM/TNF]) was a large, multicomponent site located in the Lower Tonto Basin that Desert Archaeology, Inc. (DAI), excavated during the RCD. The site included a pre-Classic period component, several compound units, and a platform mound. A cemetery in Locus A that was used throughout the pre-Classic period and continued to be used in the Classic period was located "in an area that served as a large plaza for the Locus A inhabitants" (Craig and Clark 1994:32). Sixty-three secondary cremations were found in the cemetery. The cremations were found in shallow, oval, subrectangular, or circular pits. Many can be considered cremations only tentatively, because they lacked human bone.

Eighteen cremation features were assigned to the Sacaton phase, and an additional 7 were dated to the Santa Cruz or Sacaton phases or tentatively assigned to the Sacaton phase. The cremations were accompanied by whole or broken vessels, some of which were nested; ritual objects, including palettes, hematite, and incised stone bowls; and items of personal adornment, including hairpins, *Glycymeris* sp. shell bracelets, shell rings, steatite and shell disk and bilobed beads, steatite zoomorphic pendants, carved-shell pendants, and whole-shell pendants. Feature 347 was accompanied by 1 palette, 2 fulgerites (fused sand created by a lightning strike), and 1 finely made, modeled-figurine head of a type thought to characterize the Sedentary period (Haury 1965, 1976; Swartz et al. 1995:177). Two cremations were accompanied by several projectile points. Feature 386 had 5 whole and 8 fragmentary projectile points and other flaked stone artifacts; Feature 389 had 11 obsidian points of nearly identical form and size, which were located above the rest of the feature. Another cremation, Feature 441, was accompanied by 1 Lino Black-on-gray bowl thought to represent an heirloom along with other artifacts (Swartz et al. 1995).

Swartz et al. (1995:210) concluded that "the Meddler Point secondary cremations fit fairly easily into Hohokam burial types defined by Haury (1976) at Snaketown and by Antieau (1981) at the Cashion site." The breakage and burning of funerary goods also is a typical Hohokam practice (McGuire 1987:13) and probably reflects the ideological constructs of sacrifice and ritual destruction that permeated Mesoamerican ideology and Hohokam mortuary ritual (Whittlesey 2004).

Inhumation

The second interment practice found in the comparative sample was inhumation. Eleven Sedentary period inhumations were found at four sites excavated by DAI during the TCAP. Two of these also could have been associated with earlier components (Hall et al. 2001:Table 1.5). Paralleling patterns in the Globe Highlands, no cremations dated to the Sedentary period (Hall et al. 2001:2). At Cerro Flojo (AZ U:3:294/1362 [ASM/TNF]), a pre-Classic period settlement in the northern part of the TCAP Punkin Center section, 1 inhumation was interred into an abandoned pit structure and probably was associated with adjacent Sedentary period houses. The inhumation was oriented with the head to the northwest and was buried in a simple pit. The aged female lacked grave goods and had lambdoidal cranial deformation (Hall et al. 2001:135–136).

Las Tortugas (AZ U:3:297/332 [ASM/TNF] and AZ U:3:4 [ASU]) was located in the center of the Punkin

Center section of the TCAP. The site was situated on the first terrace west of the Tonto Creek floodplain and consisted of two loci, each containing a surface-masonry component and an underlying pit-structure component. Three Sedentary period burials were found at Locus 1 (Hall et al. 2001:Table 1.5). All were located in an unbounded area outside and north of the Locus A compound and near several pit structures. Feature 29 was an extended inhumation interred in a pit with no discernible outline. It represented a male aged 50–60 years and was oriented with the head to the east. There were no grave goods. Features 53 and 70 were assigned to the Ash Creek phase. Feature 53 was interred in a simple pit. This was an extended inhumation of a 4–5-year-old child with the head to the east. Two vessels (plain ware and red ware), a *Glycymeris* sp. bracelet, a shell pendant, and stone and shell beads were associated with the burial. Feature 70 was apparently an infant based on the pit size (no bone was present). A Holbrook Black-on-white bowl with a "kill" hole and a Sacaton Red-on-buff jar accompanied the burial. A number of steatite beads also may have accompanied the child. The co-occurrence of Little Colorado White Ware and Hohokam Buff Ware was unique to the TCAP mortuary assemblage (Hall et al. 2001:136). Information concerning cranial deformation was not provided individually; these individuals apparently had occipital cranial deformation, or the skeletal material was insufficient to permit observations to be made (Minturn 2001:Table 2.22).

Tres Huerfanos (AZ U:3:298/1368 [ASM/TNF]) was located south of Las Tortugas and was the largest site investigated during TCAP. Ten loci spanning the Early Ceramic through the historical period were identified. Evidence for Colonial and Sedentary period activity was found at Locus 1. One adult male, whose age was given variously as 35–49 and 35–40 years, was an extended inhumation with the head oriented to the east. There were no associated artifacts except one small piece of shell (Hall et al. 2001:243). The burial was interred in a midden deposit located northeast of a group of pit structures (Vint et al. 2000:344). Information concerning cranial deformation was not provided for this individual, who either had occipital cranial deformation, or the remains were too fragmentary to permit observations (Minturn 2001:Table 2.22). A second inhumation, Feature 25, intruded into the entry of a pit structure dated to the Sedentary period (Vint et al. 2000:334). The male individual, whose age was estimated variously between 35–49 and 35–45 years of age, was interred in a shallow pit and covered with rocks and nether stone fragments. The head was oriented to the east, and although the body was extended, the left leg was crossed over the right femur, suggesting an informal burial (Hall et al. 2001:245). The burial lacked funerary accompaniments and exhibited no cranial deformation.

Granary Row (AZ U:3:299/199 [ASM/TNF]) was the fourth TCAP site to yield Sedentary period inhumations. The site was located in the south portion of the project area on the first terrace above Tonto Creek. It also was a multicomponent site. The area designated Locus 2 contained 10 pit structures and 2 abutting masonry compounds (Lindeman and Clark 2000). Five inhumations were assigned to the Sedentary period. Four were located in an unroofed, unbounded area between the two residential compounds, and the fifth was located just west of Compound 1 (Lindeman and Clark 2000:Figure 18.3). Three inhumations interred in a simple pit contained little bone and no grave goods; they probably were infants. One pit was oriented east–west and a second north–south. Feature 133 was a 2–3-year-old child interred in a simple pit with the head to the east. The body was placed in the same crossed-leg position as the burial in Feature 25 at Tres Huerfanos. There were no grave goods (Hall et al. 2001:287). Information concerning cranial deformation was not provided individually; these burials either had occipital cranial deformation, or the observation could not be made (Minturn 2001:Table 2.22).

The Riser site (AZ U:8:225/1580) was excavated during SRI's RRSS. The site was a predominantly Sacaton phase settlement overlooking the Salt River in the Lower Tonto Basin (Vanderpot et al. 1994). Five pre-Classic period structures were found, along with a midden east of the habitation structures into which an inhumation was interred. There were no cremations at this site. The burial was placed in an extended position in a pit without elaborations. It was an adult male oriented with the head to the south; no grave goods were present (Vanderpot et al. 1994:324–325).

Inhumations were recovered from several late pre-Classic period sites during DAI's Rye Creek Project in the Upper Tonto Basin. A single inhumation, a fetal burial, was found at the Clover Wash site (AZ O:15:100/704 [ASM/TNF]). The burial intruded into a pit structure dated between A.D. 1000 and 1195 (Swartz 1992b:208). It was placed in a shallow pit covered with broken plain ware vessels, including a jar with a Gila shoulder. No information was provided concerning body position, preparation, or orientation (Swartz 1992b:206). No cremations were found at the site. At the Rooted site (AZ O:15:92/1111 [ASM/TNF]), two infant or neonatal inhumations were found in an outdoor area west of the pit structures. They were placed in pits; one was placed in an extended-supine position and oriented to the south, and the other's body position and orientation could not be determined (Swartz 1992c:240). The undisturbed burial was accompanied by four *Glycymeris* sp. shell bracelets and a reconstructible plain ware bowl on the chest. The disturbed skeletal remains of the infant were mixed with sherds of a plain ware vessel (Swartz 1992c:240).

In summary, late pre-Classic period burial practices included two different technological styles, inhumation and cremation, and two modes within the cremation style. There is no evidence to indicate that temporal differences were responsible for this variability. Instead, the diverse styles appear to be spatially distinct. Berg, Bushèe, et al. (2003:251) observed that Sacaton phase burial practices in the Globe Highlands were exclusive according to site. Inhumation only was found at two sites, and cremation only was present at one site. This also seems to have been the case for most other sites in the comparative sample. There were no cremations found at CCP sites, but a single inhumation of a child in late Sacaton phase context at Site 408/2015. Even at sites were cremations and inhumations were found together, as at Meddler Point, they tended to date to different periods. The most parsimonious explanation for this dichotomy is the presence of ethnically distinct populations.

Diversity in cremation practices may indicate social identity at a level lower than that of ethnic group. The characteristics of the inhumation technological style—inhumation, extended-supine body position, eastern orientation, ceramic-container accompaniments—and the inferred ideological and cosmological beliefs that this style reflected presaged features of the Classic period mortuary program, suggesting continuity. The presence of lambdoidal cranial deformation and the absence of deformation caused by the use of a cradleboard implies that the people practicing inhumation also were mixed culturally. Without doubt, the multiculturalism that would characterize Tonto Basin throughout its history was established in the pre-Classic period, if not earlier.

Classic Period: Miami and Roosevelt Phases

Miami Wash Project

The Miami Wash Project was one of the first CRM investigations in the Globe Highlands. The Highway Salvage Section of the ASM carried out the work along SR 88, which paralleled Miami Wash. The project was notable for excavating the Columbus site, which provided the archaeological basis for defining the Miami phase (Doyel 1978).

The Columbus site was located on a ridge above Pinal Creek. The compound consisted of six masonry rooms, only two of which were contiguous, and two earlier pit structures. The compound on the south enclosed the site on three sides only; three rooms were located outside this enclosure (Doyel 1978:Figure 20). Thirteen burials were recovered, all of which were dated to the Miami phase (Doyel 1978:76). One "burial" was thought initially to represent a cremation inside a ceramic container. It proved to contain no human remains. Another "burial" represented a well-prepared, deep pit that also contained no human remains. Other such pits in and near Tonto Basin have been discovered, as discussed below; they may represent graves that were prepared prior to death that were never used. It is also possible that these graves were commemorative, perhaps prepared for individuals who died elsewhere (Michael Sullivan, personal communication 2005).

Grave Location

All burials were located inside the compound but outside of rooms. In light of the restricted extent of the compound, this appears to indicate a clear preference for burial inside compound enclosures. At the Vegas Ruin, most of the burials predate the construction of the compound. At the Crane site, burials located within rooms, adjacent to rooms, and outside of architecturally bounded areas.

Grave Facility

All graves represented unelaborated, Type 4 pits. No evidence of cribbing, stone-slab coverings, or elaborated grave pits was found. One burial, a late fetal-to-newborn infant, was covered with an inverted bowl. This grave architecture is the same as the seven Type 4 pits excavated during the CCP, although the CCP reflected greater overall diversity in grave styles.

Body Position and Orientation

The burials were placed in an extended-supine position, but orientation varied considerably. Of five burials whose orientation was reported, two were oriented with the head to the west and one each was oriented to the south, north, and east.

Body Preparation

No evidence for ochre staining, matting, or cloth was noted. The deceased apparently were dressed in personal ornaments, however. This is unlike the CCP, where ochre was commonly noted in burials.

Artifactual Accompaniments

Most burials were accompanied by funerary objects; the only undisturbed, actual burial lacking grave goods was a child aged 6 months to 2 years. Nonceramic accompaniments were less numerous, as at the CCP sites. Ornaments were limited to *Glycymeris* sp. bracelets and an unmodified *Conus* sp. shell. One individual, a 40–50-year-old male, was accompanied by a cache of artifacts in a jar that included 50 quartz crystals, shell bracelets, a whistle, and minerals. A bone awl and tabular knife accompanied the burial (Doyel 1978:77).

Ceramic wares also were limited. Only Gila Red, plain ware, Snowflake Black-on-white, and Roosevelt Black-on-white were present in the mortuary assemblage, and Gila Red constituted 71.4 percent of the containers. Some jars were placed at the head or shoulders, and others were at the feet.

Tonto Creek Archaeological Project

Although evidence of earlier activity was found at the site of Las Tortugas, discussed previously, the major occupation was during the Classic period. Three components dating to the Miami/Roosevelt phases (A.D. 1150–1325) were defined at Locus 1, and three Roosevelt phase components (A.D. 1200–1325) were isolated at Locus 2 (Clark et al. 2000). Ceramic dating, specifically of Pinto Polychrome and Pinedale Black-on-white vessels in mortuary contexts, indicates that some features at this site postdated A.D. 1280 and were perhaps as late as A.D. 1320–1350 (Goetze and Mills 1993; Montgomery and Reid 1990; Reid, Montgomery, et al. 1995). The two residential compounds at Las Tortugas were identified as different loci of the same site, but each compound probably should be considered a separate settlement. Both compounds resembled the Crane site and the Vegas Ruin, although they were larger.

The residential compounds at Las Tortugas yielded numerous inhumations. Sixty-nine inhumations were buried in three locales within Locus 1 (Hall et al. 2001:126); 46 burial features were located in two discrete locales within Locus 2 (Hall et al. 2001:202). The following discussion excludes those burials thought to be pre-Classic in age, which are discussed elsewhere. Note that because of discrepancies in original presentation of the information and the presence of multiple individuals in single features, totals may vary in the tables accompanying this section.

Grave Location

Two spatial patterns were observed. Interments were placed inside unroofed, architecturally bounded spaces (courtyards) and outside of these spaces. (*Authors' note:* A note on terminology is appropriate here. We refer to "compounds" to mean walled, architectural units containing roofed spaces (rooms) and unroofed, walled spaces. Consistent with its usage elsewhere in the region, "plaza" refers to an unroofed, architecturally bounded space surrounded by residential rooms. "Courtyard" refers to an unroofed, bounded space not surrounded by residential rooms. Most walled, unroofed spaces in the comparative sample represent courtyards, not plazas, although some writers use the terms to mean the same thing or distinguish courtyards and plazas by relative size.)

The majority of the burials appear to have been situated within the compound at both loci, unlike the Vegas Ruin and Crane site burials. A cluster of nine inhumations was located north of the compound wall in Locus 1; in Locus 2, all but six burials were found in architecturally bounded space within the compound. Four of the latter were interred in a trash mound to the southwest of the residential compound. Burial inside room spaces does not appear to have been practiced, although there is some ambiguity regarding this issue. The preference for burial inside compounds was maintained through time. As the residential area expanded and new masonry rooms and courtyards were constructed, burial locales shifted so as to use the courtyard spaces.

Little distinguished the burials in the architecturally bounded and unbounded, outdoor spaces. Adults and subadults were found in both areas, as were adult males and females; there were no differences in orientation or accompaniments. The exception was the interments found in unbounded space at Locus 2. Five of the six burials were subadults or adult females (one adult was of indeterminate sex and age). Two of the trash-mound interments were secondary burial deposits of disarticulated bones lacking accompaniments (Hall et al. 2001:209–210).

Although most interments clustered in bounded spaces that evidently were spatially demarcated cemeteries, other interments were found within residential courtyards. In the latter instances, the presence of facilities such as granaries, informal firepits, roasting pits, a slab-lined pit, adobe-puddling pits, and occupational surfaces indicate domestic activities also were conducted in these areas. Clark et al. (2000:570) suggested, however, that adult burials in courtyard spaces predated courtyard construction. Whereas this may indeed have been the case, the great majority of burials were neither intrusive to nor intruded by architectural features, so that the hypothesis cannot be tested, as at the CCP sites.

Some burials in bounded spaces clustered according to age and sex. A group of subadult burials was found underlying Rooms 3 and 55 in Locus 1 (Hall et al. 2001:Figure 1.88). A group of burials in the courtyard Feature 56, also in Locus 1, were adult females of child-bearing age and fetal burials (Clark et al. 2000:574). Similar clustering of subadult burials was found at Locus 2, where children were grouped at the north end of the eastern burial area and in the east-central portion of the western burial area (Hall et al. 2001:Figure 1.128).

Evidence for grave marking was mixed. In the bounded cemetery within Locus 1 (Feature 40), the graves were arranged in parallel rows, suggesting they had been marked (Clark et al. 2000:574). Elsewhere, overlapping and superpositioned graves and a number of prehistorically disturbed and redeposited remains indicated that graves had not been marked, or that surficial markings had deteriorated, been removed, or been forgotten. Although stone slabs and cobbles were found covering a few graves, their positioning indicated most were used as coverings, rather than as markers.

Grave Facility

Six different types of grave facility were found at Las Tortugas (Table 76), which share many similarities with the CCP graves. The most common (46 percent) was a simple, unelaborated pit without a lining, benches, alcoves, or coverings. This corresponds to the Type 4 burial facility, which represented 23 percent of graves (n = 10) in the CCP project. The next most common type of grave facility at Las Tortugas was those with benches. Roughly 16 percent had a central pit bounded by two benches. Typically, these pits were rectangular and consisted of two levels: an upper level that was wide and a narrow, lower level containing the remains and accompaniments (Hall et al. 2001:23). The lower level was cribbed. On occasion, accompaniments also might be placed on the cribbing or benches. These

Table 76. Grave Facility and Location at Las Tortugas

Location, by Locus	Simple Pit		Pit with Stones		Cribbed		One Bench		Two Benches, Cribbed		Alcove		Indeterminate		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Locus 1																
Unbounded [a]	5	17.2	2	50.0	—	0.0	2	100.0	—	0.0	—	0.0	—	0.0	9	14.5
Courtyard 51 E	7	24.1	—	0.0	—	0.0	—	0.0	2	18.2	—	0.0	—	0.0	9	14.5
Courtyard 51 W	6	20.7	—	0.0	6	60.0	—	0.0	—	0.0	—	0.0	1	25.0	13	21.0
Feature 40 [b]	8	27.6	—	0.0	3	30.0	—	0.0	9	81.8	2	100.0	2	50.0	24	38.7
Courtyard 5	2	6.9	1 [c]	25.0	1	10.0	—	0.0	—	0.0	—	0.0	—	0.0	4	6.5
Courtyard 135	—	0.0	1	25.0	—	0.0	—	0.0	—	0.0	—	0.0	—	0.0	1	1.6
Other areas	1	3.5	—	0.0	—	0.0	—	0.0	—	0.0	—	0.0	1	25.0	2	3.2
Subtotal Locus 1	29	100.0	4	100.0	10	100.0	2	100.0	11	100.0	2	100.0	4	100.0	62	100.0
Locus 2																
Courtyard 204 [d]	7	33.3	—	0.0	4	66.7	2 [e]	40.0	1	14.3	—	0.0	2	50.0	16	34.0
Corridor 203	3	14.3	—	0.0	—	0.0	1 [f]	20.0	—	0.0	—	0.0	—	0.0	4	8.5
Courtyard 202	4	19.0	2 [g]	50.0	1	16.7	—	0.0	—	0.0	—	0.0	—	0.0	7	14.9
Courtyard 209	5	23.8	2	50.0	1	16.7	—	0.0	6 [h]	85.7	—	0.0	—	0.0	14	29.8
Feature 219	1	4.8	—	0.0	—	0.0	1	20.0	—	0.0	—	0.0	—	0.0	2	4.3
Trash mound	1	4.8	—	0.0	—	0.0	1	20.0	—	0.0	—	0.0	2	50.0	4	8.5
Subtotal Locus 2	21	100.0	4	100.0	6	100.1	5	100.0	7	100.0	—	0.0	4	100.0	47	100.0
Total	50	45.9	8	7.3	16	14.7	7	6.4	18	16.5	2	1.8	8	7.3	109	99.9

Note: Data from Hall et al. 2001.
[a] "Northern burial area" (Hall et al. 2001:Figure 1.88)
[b] "Bounded cemetery" in Courtyard 155 and environs (Hall et al. 2001:Figure 1.88)
[c] Benched
[d] "Eastern burial area" (Hall et al. 2001:Figure 1.128)
[e] Cribbed
[f] Without cribbing
[g] 1 with benches
[h] 1 without cribbing

correspond with Type 2 burials, which represent 23 percent (n = 10) in the CCP burials. A third type, representing 6.5 percent of the Las Tortugas burials, contained only a single bench, with a burial placed on only one side of the pit. Some of these burials were cribbed as well. This corresponds to the CCP Type 3 burial. More common was a fourth type represented by unelaborated burial pits with cribbing (14.7 percent); only one of this type was found at the Crane site.

A fifth type of facility represented by pits covered with stone slabs, cobbles, or both, comprised 7.3 percent of the grave facilities at Las Tortugas. Two such graves also contained benches, and a third was covered with wooden cribbing. In most cases, the stone slabs do not appear to have been markers to identify burial location. The slabs were flat and covered the width and length of the burial pit, rather than being piled up in cairn fashion. No analogue was present in the CCP mortuary population, although slab-covered burial pits were relatively common at the Wheatfields Project sites, discussed below, and at Grasshopper Pueblo (Whittlesey 1978; Whittlesey and Reid 2001).

The final type of facility, representing 1.8 percent of the graves at Las Tortugas, was an alcove grave corresponding to the Type 1 burials defined for the CCP. In these cases, a side wall was undercut so as to offset the pit bottom from the opening of the pit. Hall et al. (2001:24) referred to these as “niched” graves. At Grasshopper Pueblo, such graves were labeled “pit-and-chamber” graves (Whittlesey and Reid 2001:78). This was the rarest type of burial facility at Las Tortugas, but the most common type at the Vegas Ruin, where it represented half of the graves. Some of the alcove graves at the Vegas Ruin also were cribbed with a lean-to type of covering.

Facility types were distributed nonrandomly across the architectural spaces at Las Tortugas (see Table 76). Whereas simple pits were found in all burial locales, benched, cribbed, and alcove burials were not. In Locus 1, the tendency for two-bench/cribbed and alcove graves to cluster in Feature 40, the cemetery associated with Courtyard 155, and cribbed graves to cluster in Courtyard 51 West was notable. All one-bench graves were found in the unbounded cemetery outside of the compound. In Locus 2, cribbed graves clustered in Courtyard 204, and two-bench/cribbed graves were found primarily in Courtyard 209.

In addition, there were patterned correlations between age and sex of the deceased and the form of the grave facility. All graves with stone-slab or cobble coverings were found with adult women or children who presumably also were female. The association between slab coverings and females or children also was true of Grasshopper Pueblo (Whittlesey 1978; Whittlesey and Reid 2001), with one exception at the BC site (discussed below). Hall et al. (2001:136) observed that although evidence of cribbing or benches, or both, was found in 25 burials at Locus 1, only two were subadults. At Locus 2, all but five of the grave facilities with this treatment also were adults (Hall et al. (2001:202).

Typically, only a single individual was found within a grave, but some evidence indicates that grave pits were reused on occasion. Hall et al. (2001:187) suggested that the individual recovered from Feature 411 in Locus 1 was not the first occupant of the pit but the second. The wooden cribbing did not cover the body, although it extended into the benches and over the accompaniments, and an apparently in situ extra tibia paralleled the right tibia of the individual interred in Feature 411. In Feature 419, the prepared grave containing accompaniments did not hold any skeletal remains. Rather than representing a “ceremonial” burial or a disturbed interment, this feature could represent a facility that was prepared for a later occupant but never used. Hohmann (2001:110) has suggested that Sinagua burial pits were excavated and prepared before they were needed. Although this explanation is particularly appropriate where the ground is frozen or covered with snow in the winter, family “tombs” certainly could have been prepared ahead of time.

At other TCAP sites, multiple individuals were found in a few graves. At Los Hermanos, Feature 79 represented a 25-year-old female and a child (4–5 years old) buried together in the lowest level of the facility and a second child (8–9 years old) buried in the upper level of the same pit (Hall et al. 2001:71–72). At Granary Row, two elderly females were placed one on top of the other in the same pit (Hall et al. 2001:274). The use of single grave facilities for multiple individuals placed horizontally and vertically has been documented elsewhere (Loendorf 1998b; Whittlesey 1978), including the CCP, and strongly suggests that grave facilities, as well as corporate cemetery areas, were the property of family or other kinship groups.

Body Position and Orientation

Burials at both loci displayed an extraordinary degree of similarity in body position and orientation. All of the undisturbed inhumations but one were extended and supine. Arms and legs were predominantly parallel to the body. A few burials had the legs crossed at the ankles (left over right being most common) and one or both hands resting on the pelvis or femur. The single exception was Feature 413 at Locus 1. This newborn infant was placed in a semiflexed position with the legs bent to the right (Hall et al. 2001:188). As at Grasshopper Pueblo, burials placed in a position other than extended and supine also tended to be subadults (Whittlesey 2002:158). All but three burials at Locus 1 were oriented with the skull to the east. The nonconforming burials were oriented with the skull to the west. All were adults, two females and one male. These burials were found in three different localities (the Feature 40 cemetery, Courtyard 51 East, and Courtyard 51 West). At Locus 2, four burials were oriented with the head to the north (n = 3) or south, and one was oriented to the northeast. All were either adult women or children.

Moreover, all were found within the western burial area, three clustered together in Courtyard 202 and the remainder in Courtyard 209. These patterns are very similar to those at the CCP sites. All but one of the burials in the CCP also were buried extended and supine position. The single exception was an adult female buried in an extended position on her side. The predominant orientation (33 of the 41 burials for which orientation could be determined) was in a generally easterly direction. Seven other individuals were oriented in a general westerly direction and one in a generally northerly direction.

Body Preparation

As far as can be determined from the placement of ornaments, the deceased were dressed for interment in their personal adornments and probably also clothing. *Glycymeris* shell bracelets, shell pendants, and beads and pendants made from turquoise, other stone, and shell were common among the Las Tortugas interments (Hall et al. 2001:141). Pendants and beads were placed at body positions, indicating they were worn as necklaces, anklets, bracelets, and earbobs. The position of ornaments (for example, the placement of bracelets on the left forearm) and the association of ornaments with age and sex categories (for example, shell frogs with burials of female and children) correspond to patterns seen elsewhere in Tonto Basin, at Grasshopper Pueblo (Whittlesey and Reid 2001), and at Classic period sites in the Phoenix Basin (Mitchell 1994b). As several authors have noted (e.g., Mitchell 1994b:195), frogs or toads are associated with fertility, rain, and the agricultural cycle. The geometric, phallic pendants found at the TCAP sites (Vokes 2001:Figure 4.9j–m) can be envisioned as a variant of frog-pendant imagery and an extension of the associated metaphor.

Potential clothing was evidenced in organic-material residue on several burials. Residue covering the upper torso and a necklace noted on the individual in Feature 39 may represent a woven shirt (Hall et al. 2001:150). Similar material was found on the bones of those interred in Features 184 and 198 (Hall et al. 2001:166, 175).

Although elsewhere in central Arizona the location of bone hairpins at the skulls of male burials probably indicates that the hair was worn in a bundle or knot at the back of the head (Whittlesey and Reid 2001:78) and that the deceased's hair may have been freshly dressed before burial, this was not the case with the TCAP burials. Bone hairpins were also associated with male individuals (Thiel 2001:490) and were located near the skull, but not in the stylized position seen in the Grasshopper Pueblo burials (Whittlesey and Reid 2001). Worked bone artifacts were often associated with male burials in the CCP area as well.

A notable practice at Las Tortugas and elsewhere at TCAP sites was the use of red ochre to cover the bodies of the deceased and the burial accompaniments (Table 77). Twenty-eight of 80 interments at Locus 1 (35 percent) had ochre staining on one or more body parts or objects (Hall et al. 2001:Table 1.13). Twelve of 47 burials (25.5 percent) were treated in this fashion at Locus 2 (Hall et al. 2001:Table 1.16). We do not know whether the pigment was powdered and sprinkled on the body and accompaniments or mixed with a binder and painted on. The placement of ochre apparently was not random according to body part. It was never placed on the arms or upper torso alone; ochre in these areas was found only when the pigment also was placed elsewhere on the body. Ochre might be placed on the legs, pelvis, and skull only, however. The tendency for ochre to be present on multiple body parts may suggest that the entire body was painted or sprinkled with the pigment.

Although ochre was found among men, women, and children, it was far more likely to be found among women (62.5 percent) than men (20.0) or adults of indeterminate sex (17.5 percent). Women were more likely to have ochre on multiple body parts than men or children. The placement of ochre according to body part also varied according to sex. Ochre covered the pelvis, or multiple body parts, including the pelvis, among women much more frequently than among men or children. In addition, a ceramic container in Feature 147 at Locus 1 appeared to be filled with red ochre (Hall et al. 2001:153). Clumps of ochre or ochre stains were common at the CCP as well, although we did not notice age- or sex-related patterning. Seven adult women, 7 adult men, and 4 juveniles were interred with ochre.

Artifactual Accompaniments

As elsewhere in the region, mortuary accompaniments were limited in kind, consisting primarily of ceramic containers in addition to items of personal adornment. Domestic artifacts, such as grinding equipment, were notably absent, as at Grasshopper Pueblo (Whittlesey 1978; Whittlesey and Reid 2001) and other central Arizona pueblos. Instead, items reflective of individual accomplishment in crafts and ritual performance, such as pigment-grinding equipment, abraders, and quartz crystals were found, although rare. Notably absent were the shell ornaments thought to signal sodality membership (Reid and Whittlesey 1982; Whittlesey and Reid 2001).

Most striking was the proportion of burials with grave goods. Only three burials at Locus 1 and two burials at Locus 2 lacked grave goods (Hall et al. 2001:Tables 1.14, 1.15, 1.17, and 1.18). The overall percentage of burials with accompaniments was much higher than at other Gila phase sites such as Grasshopper Pueblo (e.g., Whittlesey 1978; Whittlesey and Reid 2001). The abundance of funerary goods probably reflects the high proportion of adults in the burial sample, as subadults tend to have fewer grave goods. Ceramics were the most common item, when multiple-item ornaments, such as disk beads, are counted as one object. Ceramic wares were limited and either locally made or reflected interaction with Colorado Plateau settlements. Salado Red (Salado Red and Salado

Table 77. Ochre Staining among Las Tortugas Burials by Body Area

Header	Skull	Pelvis	Legs	Multiple + Pelvis	Multiple - Pelvis	Total	
						n	%
Males							
Locus 1	2	1	1	1	2	7	
Locus 2	—	—	—	1	—	1	
Subtotal males	2	1	1	2	2	8	20.0
Females							
Locus 1	1	2	1	11	1	16	
Locus 2	1	—	—	5	3	9	
Subtotal females	2	2	1	16	4	25	62.5
Indeterminate							
Locus 1	1	—	—	2	2	5	
Locus 2	—	—	—	—	2	2	
Subtotal indeterminate	1	—	—	2	4	7	17.5
Total	5	3	2	20	10	40	100.0

White-on-red) was the most frequent burial ceramic ware, constituting 69 percent of the mortuary vessels at Locus 1 and 74.5 percent of the vessels at Locus 2 (Hall et al. 2001:Tables 1.14 and 1.17). Other red ware, brown corrugated pottery, and various white wares were much rarer. Roosevelt Red Ware was present, although rare, and the absence of thirteenth-century White Mountain Red Ware is notable. According to Vint (2000a:79), most red ware and brown corrugated pottery was made locally; Heidke and Miksa (2000:Table 3.14) indicated that the majority of analyzed Salado Red ceramics contained local diabasic sand.

Ceramic containers placed in graves evidently were taken from the domestic assemblage. Grindell (2005:228) has written that "vessels from burials all had evidence of use and wear. This indicates they were not manufactured specifically as mortuary offerings, but were selected from whatever was available at the time of death—either among the deceased's possessions, or from someone else in the community."

Most ceramic vessels found in mortuary contexts appear to have represented containers for food and drink. A few may have represented ritual activities, perhaps carried out as part of the mortuary ritual. Some vessels contained ochre. Others, mistakenly called "*pukis*" (the Hopi word for a plate or bowl, often recycled from a larger container and used to turn a ceramic container during construction), appear to have been used as burners for incense or other materials (e.g., in Feature 303 at Locus 2; Hall et al. 2001:226). Similar plates containing charcoal and ashes were found at Grasshopper Pueblo and Pueblo Grande.

The correlation between ceramic containers of certain inferred function and particular body positioning is striking and highly standardized. In the CCP mortuary assemblage, small containers inferred to represent liquid-storage vessels were placed near the skull. A similar pattern was seen at Las Tortugas. Although the formal-functional vessel data were not presented by burial, a rough tabulation of ceramic containers by vessel form for illustrated features demonstrated that small jars with relatively restricted openings accompanied the majority of burials. This was also true of mortuary vessels at the CCP sites. The placement was patterned; most such jars were placed at the head, typically to the left, right, or both sides of the skull. They might also be placed above the skull in the corners of the burial pit. Other burials had similar containers near the shoulders. Bowls were found at the feet, ankles, or alongside the arms and legs. A few burials also had bowls placed near the skull (Hall et al. 2001). The logical inference is that these containers represented personal drinking containers and held water (or possibly other liquids) when placed in the graves. Most were placed in an upright position; one was covered with a bowl.

Little distinguished the burials that deviated from this pattern. At Locus 1, of 10 burials lacking jars near the head, 4 were subadults, 1 was an elderly male, and the remainder were adult females between 20 and more than 50 years in age. At Locus 2, the six nonconforming burials were adults and represented males and females. Burials lacking drinking vessels at the skull were placed in several different locations within the compounds, and only 1 of the 16 was oriented in a direction other than east.

Although the majority of burials contained both ceramic and nonceramic accompaniments, the proportions of accompaniments by general type varied by locus. At Locus 1, 23 percent of the burials contained only ceramic accompaniments, and 3.3 percent had only nonceramic objects. At Locus 2, 41.3 percent of the burials had only ceramic vessels, and 2.3 percent were accompanied by nonceramic objects (Hall et al. 2001:Tables 1.14, 1.15, 1.17, and 1.18).

In other words, many more nonceramic items were included with burials at Locus 1.

Items reflecting a special skill, such as flint knapping and ornament manufacture, or specialty in ritual performance were discovered with a few burials. Burial 164 at Locus 1 was accompanied by flaked stone artifacts in various stages of the flint-knapping process, from cores to finished projectile points (Hall et al. 2001:159). This aged male may have been a skilled flint knapper. The individual in Feature 411 at Locus 1 was accompanied by an unusual array of objects: clay-lined and painted baskets containing worked and unworked turquoise, disk beads, shell pendants, a piece of turtle shell, a pigment-stained tablet, and bone hairpins. Additional shell ornaments, quartz crystals, a bundle of animal bones, a shaft straightener, and another piece of tortoiseshell were found elsewhere in the grave (Hall et al. 2001:188). Grindell (2005:209) suggested that this individual was a lapidary specialist skilled in jewelry manufacture, but the nature of the objects is more in accord with the personal "medicine kit" of a ritual specialist or shaman. Moreover, the objects found with this individual suggest mixed gender identity. Shell frogs are female-associated items, whereas bone hairpins are male-associated objects. The individual was identified as a middle-aged female on the basis of a large mandibular angle and small mastoid processes, rather than on the indisputable criteria of pelvic-bone indicators and parturition scars (Hall et al. 2001:187). Finally, Feature 402 at Locus 1 contained antler tools, partially worked argillite, cores, pigment-stained tablets, a small basin metate, and a mano, suggesting skill in working argillite. This individual was an elderly male (Hall et al. 2001:176–179).

The function and role of painted wooden staffs and other wooden objects is unclear. Eight such objects were found with six burials at Las Tortugas (Ferg 2001:500–502). These items probably served as ritual objects carried during ceremonies or used as standards during such events. Ferg (2001:512) suggested they resemble Hopi kachina staffs most closely. By contrast, Loendorf (1996b:765) suggested that staffs were "symbols of authority." At Las Tortugas, the painted sticks (of varying length) were found only with male burials, whereas unpainted sticks also were found with female burials. A long (120 cm) staff painted red and blue was found with Feature 402, the male with a stone-working tool kit (Hall et al. 2001:179). A 40-cm-long, unpainted stick was found with the individual interred in Feature 424, an elderly male; it lay parallel to the right arm (Hall et al. 2001:199). Two unpainted sticks 42 and 51 cm long were found parallel to the left side of the female in Feature 404 (Hall et al. 2001:181). The length and curve of these objects suggests they might have been something other than staffs, perhaps weaving tools. Feature 407 was variously described as a 30–35-year-old male (Hall et al. 2001:183) and a 20–34-year-old male (Hall et al. 2001:Table 1.13). Two painted staffs were placed parallel to the body. A painted staff with a carved knob, 34 cm long, was placed under the right shoulder and to the right side of the skull of Feature 39 (Hall et al. 2001:Figure 1.91, 150).

Bioarchaeological Data

All individuals for whom cranial deformation could be observed (seven at Locus 1 and one at Locus 2) had vertical-occipital cranial deformation (Minturn 2001:Table 2.22). One individual (Feature 271, Locus 2) exhibited intentional filing of the dental enamel (Lincoln-Babb 2001:343). Lincoln-Babb (2001:345) observed that dental modification is a Mesoamerican trait, and that this male, whose age at death was reported variously between 20–34 years and 30–35 years, may have represented "the long distance immigration of at least a few individuals from areas outside the American Southwest" (Lincoln-Babb 2001:345). This person was buried in a cluster of burials within Courtyard 204. The grave facility (a cribbed pit), associated ceramics, and other accompaniments (a shell bracelet and a shell pendant) were similar to other inhumations. The burial was accompanied by a larger number of ceramic containers when compared to others at the site and a three-quarter-grooved axe, an unusual accompaniment (Hall et al. 2001:218; Lincoln-Babb 2001:345).

Summary

Discrete cemeteries primarily corresponding to unroofed, bounded architectural spaces were used repeatedly to inter the deceased at Las Tortugas. The presence of adults and children of different ages and males and females together in these architectural spaces implies that they were used by family or other kin-based groups (or possibly residential groups presumably also related through kinship ties), rather than social groups based on other membership criteria, such as sodality membership. Grindell (2005:199) concluded that the close association of burials with residential areas indicates that "burial appears to have been very much the business of the immediate family." The overwhelming homogeneity in body position and orientation and the patterned, regularized placement of ceramic containers in graves according to their inferred functions suggests the presence of an ideological framework shared by all members of the community.

By contrast, the tendency for certain types of grave facilities to occur exclusively or more commonly in particular architectural spaces and slight differences in the nature of accompaniments indicates that not only was the interment of the dead largely carried out by and for family groups, but these groups also held somewhat different concepts of a mortuary technological style. Differences in ideology and origin are indicated. The placement of certain deceased individuals outside the compound walls may indicate that some residents of Las Tortugas were "outsiders"—people of nonlocal origins. If the individual with culturally modified teeth indeed originated from a home somewhere in Mesoamerica, some such outsiders came from a long distance indeed.

SR 87—Mazatzal Piedmont Project

Mazatzal House (NA16,486) was a small compound located in Hardt Creek Valley west of the CCP area. It was excavated by the Museum of Northern Arizona. Five masonry-and-*jacal* rooms were arranged in two courtyards; the entire site was surrounded by a compound wall. The primary occupation was dated between A.D. 1100 and 1225 (Ciolek-Torrello, ed. 1987:58). The site yielded 12 burials.

Grave Location

Burials were found in two areas: inside courtyards within the compound and outside the compound walls. Although adults and children were buried in the former locale, only adults were buried in the latter area. The unbounded cemetery was located east of the compound and about 2 m from the eastern compound wall. Intriguingly, the north-south-oriented burial was placed parallel to and directly in front of the possible compound entrance (Dosh and Ciolek-Torrello 1987:14, Figure 2). The patterned placement of graves in rows suggestive of marking seen at Las Tortugas was not evident at Mazatzal House, although the reuse of grave facilities discussed below indicates that graves probably were marked in some fashion. The presence of refuse and facilities indicates that the courtyards were used for domestic activities as well as burial areas.

Grave Facility

The Mazatzal House burials were interred in simple pits analogous to the CCP Type 4 burials. Apparently, none was covered with wooden cribbing or stones, although as Hartman (1987:223) noted, the presence of organic materials is a function of preservation. None of the benched or alcove grave facilities that were so common in the CCP sample was present at this site. The simple pit type of grave facility was the most common at Las Tortugas, but a greater diversity of grave types was represented in the much larger sample from that site. An interesting pattern in light of the small sample at the Mazatzal House was the reuse of burial pits. A 1.5-by-2-m pit dug into soft, limestone bedrock adjacent to the south compound wall was used to bury five different individuals. As at Las Tortugas and elsewhere in the region, subsequent interments disturbed previous burials, and the skeletal remains and offerings were mixed together and deposited in the fill above the last burial (Hartman 1987:223). Individuals in what might be interpreted as a family tomb included a neonate, a year-old child, an adult female (30–47 years), and two adult males aged 36–44 years and 45–55 years at death (Hartman 1987:Table 34). Grave pits in the unbounded cemetery also were reused. Burial 10 was placed directly above Burial 11 in the same pit; an intrusive pit cutting through the remains of an earlier interment contained no body, much like Feature 419 at Las Tortugas (Hartman 1987:223).

Body Position and Orientation

As common elsewhere, all burials that were undisturbed were placed in an extended, supine position, and all but one were oriented with the head to the east (Hartman 1987). The exception was a male aged 36–55 years, who was buried in the outdoor, unbounded cemetery (Hartman 1987). His skull was placed to the north.

Body Preparation

Burials at Mazatzal House were dressed in personal ornaments, as indicated by the presence of shell bracelets and pendants. Male burials were interred with bone hairpins placed at or under the skulls; the description suggests that some of these artifacts may have been in place at the time of burial. Unlike the CCP, ochre or other pigments were not used to prepare the Mazatzal House deceased for burial.

Artifactual Accompaniments

Mazatzal House burials resembled those from Las Tortugas in the kinds and numbers of accompaniments and in the placement of objects. Ceramic containers were the most common accompaniment, followed by ornaments; two projectile points were the only nonceramic, non-ornamental artifacts. The proportion of burials with accompaniments was high; all but one burial, an infant, probably originally were accompanied by ceramic containers. A greater variety of nonceramic grave goods were recovered during the CCP, such as cores, a mano, flaked tools, shaft straighteners, and hammer stones, although this greater diversity may be a function of the much larger sample size in the CCP.

A shallow polished red ware bowl with smudged interiors and everted rims (probably a variant of Gila Red) was the most common burial artifact. The presence of diabasic sand in some of these ceramics (Bruder and Ciolek-Torrello 1987) indicates local manufacture, but at least two were identified as Gila Red (Bruder and Ciolek-Torrello 1987:Plate 7). Other types in burial contexts included Gila White-on-red, Salado Red, Pinto Polychrome, Pinto-Gila Polychrome, and Tularosa Black-on-white (Hartman 1987:224). Two different materials, diabasic sand and biotite with quartz and feldspar, were observed in the Salado Red ceramics (Bruder and Ciolek-Torrello 1987:85). As at Las Tortugas and the CCP sites, small jars that likely represented personal drinking vessels were placed near the skull, and bowls were placed at the feet and legs. One individual had bowls rather than jars near the skull, and one had a small jar at the feet (Hartman 1987:231–239).

Bioarchaeological Data

All six burials for which the trait could be observed displayed vertical-occipital cranial deformation (Hartman 1987:228). Cranial deformation was also commonly observed in the CCP area.

Summary

Except for the absence of wooden cribbing and the differences in wares found in burial contexts, mortuary practices used at Mazatzal House resembled those at the CCP sites and Las Tortugas. Other differences, such as the lack of patterning in grave location, may have stemmed from the settlement's small size and inferred occupation duration. Distinctions among ceramic wares probably reflect the direction of interaction between Mazatzal House residents and people living elsewhere and may suggest different social identity. Two sources of Salado Red ceramics are indicated, for example. The burial of one individual outside architecturally bounded space and the fact that this person was oriented with the head to the north rather than to the east suggests he was an outsider to the small Mazatzal House community.

Roosevelt Platform Mound Study

AZ U:8:450/14b (ASM/TNF) was a residential compound located on Schoolhouse Point Mesa in the Lower Tonto Basin. It was excavated by Arizona State University during the RPM (Lindauer 1997). Schoolhouse Point Mesa is a set of Pleistocene terraces above the Salt River on the south side of Theodore Roosevelt Lake. AZ U:8:450/14b overlooked Pinto Creek on the eastern side of the mesa. The site consisted of a compound, a pit structure incorporated into the compound, two freestanding cobble-masonry rooms located away from the compound, and an isolated, ephemeral adobe room (Lindauer 1997:127). Although the settlement apparently was established in the Sedentary period, excavated features dated to the Roosevelt and Gila phases. Most of the burials were dated to the Roosevelt phase. The compound consisted of at least two courtyards that served as cemeteries, among other functions. An unbounded cemetery was located near the freestanding masonry rooms northeast of the compound. Six middens surrounded the residential area and contained additional burials (Lindauer 1997:Figure 4.38). Feature numbers were assigned to 74 inhumations and 3 cremations (Loendorf 1997b:553).

Grave Location

Burials were placed in two locations: in residential compounds and outside of these architecturally bounded spaces. The "North Cemetery" was located northwest of the major residential compound and underlying the isolated masonry rooms. This cemetery may have been slightly later than the remainder of the site, as more burials in this area were assigned to the Gila phase. The "South Cemetery" consisted of three contiguous, enclosed courtyards (Features 11, 12, and 95). Burials were placed in all areas, but only Feature 12 and its burials were excavated intensively. The tightly packed placement and superpositioning of graves in Feature 12 and the mapped placement of unexcavated graves in Feature 95 indicate that all three courtyards probably were used equally intensively to bury the dead. The South Cemetery was located on the east side of the compound.

Adults and subadults were interred in both cemeteries. The pattern of subadult burial in occupied rooms that emerged later in Gila phase settlements was not evident at the Miami and Roosevelt phase settlements in Tonto Basin and its environs. It is interesting, however, that the majority of burials in the North Cemetery were subadults, and all adult burials that could be sexed were female. This cemetery clearly served as a burial ground for women and children, whereas the architecturally bounded spaces were designated primarily for adults and men.

Grave Facility

Grave types were similar to those found at the CCP sites and Las Tortugas. Although simple, unelaborated pits were common, many graves were elaborated with benches, wooden cribbing, and undercut sides forming alcoves. The general construction appears to have been similar to facilities at Las Tortugas and the CCP sites—a narrow trench contained the body and accompaniments, often capped with wooden cribbing, above which the pit widened (Loendorf 1998b:Figure 10.4b). Loendorf (1998b:202) suggested that clay often was used to cap the wooden cribbing. When an alcove was present along one long axis of the pit, the body typically was placed in the alcove (Loendorf 1997b:577). Undercut areas along one or two short axes also might be used for accompaniments (e.g., Loendorf 1997b:Figure 16.21). None of the burials at U:8:450/14b had stone coverings, in contrast to Las Tortugas and the SR 88–Wheatfields Project sites, discussed below.

Because of the apparent practice of reusing grave facilities and superpositioning of many graves at this site, it was not possible to tabulate the grave facilities by age, sex, and other characteristics. It appears, however, that the elaborated graves were used for adults, particularly adult males, and simple pits were used more frequently for adult females and subadults (Loendorf 1997b:577). Loendorf (1998b:202) also suggested that in cases of multiple interments, the deepest grave often contained the largest burial assemblages.

The characterization of grave facilities at this site as "crypts" (e.g., Loendorf 1997b:557) is misleading. Although it is clear that the same facilities often were reused, the overlapping character, spatial orientation, and differential depths of individual burials indicates that at least some new burial pits were dug each time an individual was buried, instead of existing graves being reopened with each successive interment (e.g., Loendorf 1997b:Figure 16.5). During the process of burying newly deceased individuals, the skeletal remains and accompaniments of previous interments were bundled together and placed in the pit fill above the new interment. Loendorf (1998b:202) wrote that "upper individuals were offset in the pit such that the skeletal material did not fall directly above the cranium of the deepest individual." We can assume that at least some mortuary facilities were used repeatedly, whereas other interments were simply placed in the corporate space used by the kinship group. Marking of grave facilities may have been necessary under such conditions, although no evidence of this practice survived.

Body Position and Orientation

The majority of burials were extended; the single example of a "slightly flexed" individual was a subadult (Loendorf 1997b:Table 16.4). Another burial of a newborn child was placed prone (Loendorf 1997b:Table 16.4). The majority of interments were oriented with the head to the east. Orientation apparently varied by cemetery. Burials in the South Cemetery had the greatest variation in orientation, with several individuals oriented with the head to the north or south (Loendorf 1997b:Table 16.4). By contrast, the orientation of burial pits in Feature 95, a courtyard, suggests that some of these individuals were oriented north-south (most of the burials were not excavated) (Lindauer 1997:Figure 4.51). Burials in the North Cemetery were less variable (Loendorf 1997b:581).

Body Preparation

The placement of ornaments and the presence of organic residues indicate that the deceased were dressed in clothing and adornments. Loendorf (1997b:579) observed that the extended-supine position of most burials at the site (and elsewhere in the Southwest) is consistent with wrapping of the body in blankets or matting, and that burials at Tonto National Monument were wrapped in preserved cloth or garments and laid on twilled beargrass matting. Pigment, typically red ochre, was observed on 12 burials (Loendorf 1997b:Table 16.4), but was much more common in the CCP burials. Placement of the pigment with regard to body part was similar to Las Tortugas, with the extremities, pelvis, and skull being most frequent, in that order. One adult male (Feature 49) had red ochre above and below the orbits, suggesting his face had been painted (Loendorf 1997b:561). Pigment was found on adults and subadults (Loendorf 1997b:Table 16.4).

Artifactual Accompaniments

Ceramic containers were the most common artifact class accompanying burials. Many burials had numerous containers, sometimes with bowls stacked together or jars nested in bowls. Although the ceramic wares represented an assemblage similar to those from Las Tortugas and Mazatzal House, the proportions of wares differed, as did the diversity of types (Table 78). Smudged red ware was the most common in burial contexts, whereas Salado Red dominated the mortuary assemblage at Las Tortugas. Simon (1997) did not describe the ceramics from U:8:450/14b, but illustrated examples of red ware indicate that a variety of types were present, including Gila/Salt Red as well as mountain-affiliated types. According to Simon (1997:312), most of the undecorated and corrugated ceramics, including red ware, were produced in Tonto Basin. Salado Red and Salado Red-on-white were the second most common containers, followed closely by Cibola White Ware. The frequency of Pinto Black-on-red pottery is notable, and the presence of polychromes indicates the Gila phase dating of some burials. The presence of several Maverick Mountain Polychrome suggests ties with the Point of Pines region; white ware pottery and White Mountain Red Ware indicate links with the Colorado Plateau.

The positioning of ceramic vessels relative to body position was patterned. The correlation between inferred container function and body placement observed at the CCP sites and Las Tortugas was not evident at U:8:450/14b, however. Although containers that could have served as liquid-storage containers were often placed at the head or shoulders, they were found almost as frequently at both the feet and skull and more frequently elsewhere at the body. Several burials lacked jars altogether (Table 79). Most of the latter were subadults, however. This may suggest that vessels (and their contents) used during the journey to the afterlife were not deemed necessary for children.

Shell ornaments included disk beads worn as anklets and bracelets, *Glycymeris* bracelets, and diverse pendants; they were placed with adults of both sexes and subadults (Loendorf 1997b:585), similar to CCP, TCAP, and Mazatzal House practices. Shell bracelets typically were worn on the left arm. One of the more elaborate burials, a 29–38-year-old male, was interred with *Haliotis* pendants, carved *Laevicardium elatum* pendants, one *Melongena patula* trumpet, and one *Strombus gracilior* trumpet (Loendorf 1997b:Table 16.4). A shell "needle" may also have been an ornament. Loendorf (1997b:585) suggested that *Anodonta californiensis* shell, which was relatively abundant, may have represented food offerings. At least one ornament was made from this species, however. Other ornaments included turquoise pendants worn as earbobs, tesserae, and disk beads (Loendorf 1997b:586).

Nonutilitarian items were found in caches suggestive of original containment in perishable containers and perhaps reflecting shamanistic activities or other ritual behaviors. A cache of artifacts, including quartz crystals, a shell trumpet, shell and argillite, pendants, projectile points, turquoise tesserae, and bone-awl tips were placed in a perishable container, perhaps a basket, with Feature 75. This individual also was accompanied by two clusters of projectile points, one near the left arm and one near the right leg, which may have been hafted when interred. An organic stain with wood fragments may have represented a bow (Loendorf 1997b:564).

As at Las Tortugas, the inferred indicators of sodality membership were conspicuous by their absence. A single *Conus* shell tinkler was found (Loendorf 1997b:Table 16.4). One undisturbed burial was accompanied by bone hairpins placed near the skull (Loendorf

Table 78. Ceramic Wares Found with Inhumation Burials at Schoolhouse Point Mesa Sites (AZ U:8:450/14b [ASM/TNF]) (Roosevelt Platform Mound Study)

Ceramic Ware or Type	n	%
Salado Red	43	13.9
Salado White-on-red	13	4.2
Gila White-on-red	1	0.3
Other red ware	15	4.8
Other red ware, smudged	110	35.5
Brown plain	11	3.6
Brown plain, smudged	14	4.5
Brown obliterated corrugated	2	0.6
McDonald Painted Corrugated	6	1.9
Tularosa Black-on-white	13	4.2
Pinedale Black-on-white	32	10.3
Snowflake Black-on-white	4	1.3
Unidentified Cibola White Ware	2	0.6
Pinto Black-on-red	28	9.0
Pinto Polychrome	3	1.0
Gila Black-on-red	2	0.6
Gila Polychrome	4	1.3
Cedar Creek Polychrome	2	0.6
Pinedale Polychrome	2	0.6
Maverick Mountain Polychrome	3	1.0
Total	310	99.8

Note: Data from Loendorf (1997b:Table 16.4).

Table 79. Placement of Whole or Restorable Ceramic Containers with Inhumation Burials at Schoolhouse Point Mesa Sites (AZ U:8:450/14b [ASM/TNF]) (Roosevelt Platform Mound Study)

Location	Adults			Subtotal		Subadults (%)	Total
	Male	Female	Indeterminate	n	%		
Jar at head/shoulders	3	3	1	7	100.0	—	7
Jar at feet/legs	2	—	1	3	75.0	1 (25.0)	4
Jar at head/shoulders and feet/legs	3	2	—	5	83.3	1 (16.7)	6
Jar elsewhere at body	6	4	—	10	83.3	2 (16.6)	12
Bowl at head/shoulders	1	—	—	1	50.0	1 (50.0)	2
No jars	1	1	—	2	33.3	4 (66.7)	6

Note: Frequencies do not sum, because some burials had containers in several locations. Data from Loendorf (1997b:Table 16.4); only primary inhumations more than 50 percent complete tabulated.

1997b). This 3–5-year-old child probably would not have worn the hair style of an adult male. As suggested by Whittlesey and Reid (2001) and Reid and Whittlesey (1982), this may indicate that bone hairpins likely were not simply ornamental objects but signified membership in a ceremonial association, or sodality. If, as at Hopi, ceremonies were the property of clans (Eggan 1950; Titiev 1992), the presence of a sodality symbol in a child's grave may denote clan membership. Alternatively, bone hairpins may have represented a personal expression of mourning on behalf of an adult male. Loss of a young child might occasionally just evoke emotion, rather than calculated symbolism (Ruth Greenspan, personal communication 2005).

Utilitarian items were notably absent. Bone awls, which were placed in diverse body positions, were the most common such object. Awls accompanied adult male and female burials (Loendorf 1997b:Table 16.14).

Bioarchaeological Data

Cranial deformation was observable in only 10 individuals among all Schoolhouse Point Mesa burials. Four cases represented vertical-occipital deformation. It is unclear whether the remaining six cases represented undeformed crania or were indeterminate (Regan and Turner 1997:665). Cranial deformation was more common in the CCP burial population.

Summary

The repeated and intensive use of walled courtyards to bury the dead over a considerable length of time suggests that the enclosed cemeteries were considered sacred spaces or consecrated ground. In addition, it implies that the courtyards were corporately owned spaces, perhaps used by extended families, lineages, or clan segments. There is bioarchaeological evidence that individuals buried in multiple-use facilities were related genetically (Regan et al. 1996).

The patterned placement of adults and children in cemeteries presages the shift to intramural burial of children and extramural interment of adults that would characterize the Gila phase. Differences in the placement of ceramic containers with reference to body part indicates a probable change in beliefs concerning the afterlife or journey to the afterworld. Whereas it was *de rigeur* for the dead buried at Las Tortugas to have a water jar placed at the skull or shoulder, this was not always the case at U:8:450/14b. Last, the contrast between the overarching mortuary pattern seen at Las Tortugas and other sites and local differences in mortuary ceramics is notable. We cannot say whether variability in mortuary ceramics reflects ideological factors, social memberships, or economic variables without further research.

SR 88–Wheatfields Project

Archaeological Consulting Services, Ltd., conducted excavations at 20 sites along SR 88 between Tonto National Monument and the junction of U.S. 60 in the Globe-Miami area. The project area is part of a region known as the Globe Highlands, encompassing the Superstition, Pinal, and Dripping Springs Mountains surrounding the Globe-Miami area and a portion of Pinal Creek (Doyel and Hoffman 2003c). Several sites yielded substantial mortuary assemblages. Here, we discuss burials from the Rocky Point Site (AZ V:9:365/02-908 [ASM/TNF]) and the BC site (AZ V:5:220/02-86 [ASM/TNF]).

Rocky Point Site

The Rocky Point site was a multicomponent habitation site situated on a terrace overlooking Pinal Creek. Locus A consisted of a masonry compound with seven rooms, two pit rooms, nine pit structures, and several bounded architectural spaces that were similar in architecture and size to the Crane site and the Vegas Ruin (Berg, Ensor, et al. 2003). Like many such sites in the region, oval and rectangular structures, some of which were isolated and some that were contiguous, were built at Rocky Point. The compound's irregular shape and the presence of multiple components indicates continuous or sequential occupation over some length of time. Three temporal components with associated architecture were identified and dated to the Santa Cruz, Miami, late Roosevelt, and early Gila phases (Berg, Ensor, et al. 2003). Thirty-six burial features and 39 inhumations were identified at Locus A (Bushèe and Berg 2003:85).

Grave Location. Three general locales were identified: (1) within rooms; (2) within architecturally bounded, unroofed spaces (courtyards); and (3) outside of walled areas. Burial in courtyard spaces was most common. A cluster of burials (Group A) was found in the courtyard Feature 8 on the west side of the compound. Most burials at Locus A were found there, and all dated to the Roosevelt phase. A much smaller cluster (Group C) was found in the courtyard (Feature 10) on the east side of the compound. Burials assigned to the Gila phase were found in this area. Burial Group B consisted of burials inside and exterior to another courtyard (Feature 8). These burials were assigned to the Miami phase, apparently on the basis of associated ceramics. Intramural burials were found in Features 14, 18, 22, and 24 (Burial Group D). A single burial was found outside the compound wall.

The pattern of intramural interment of subadults seen so prominently in Gila phase sites such as Grasshopper Pueblo evidently was becoming established during the Roosevelt phase at the Rocky Point settlement. Most burials within rooms were subadults (Bushèe and Berg 2003). Burials in courtyard spaces primarily were adults of both sexes, although subadults also were present. Burials in intramural spaces tended to be placed parallel to the room walls (Berg, Bushèe, et al. 2003:252).

Courtyards at Rocky Point contained domestic facilities, including roasting pits, other thermal pits, pits used for unidentified purposes, and postholes that could indicate the presence of ramadas, racks, or other facilities (Berg, Ensor, et al. 2003). As in the CCP area and elsewhere, the burial areas were not used exclusively for this purpose.

Grave Facility. Burials were placed in simple pits, benched pits, and alcove pits, in an order similar to Las Tortugas. By contrast, alcove pits were most common at the Vegas Ruin but absent at the Crane site. Artifactual accompaniments occasionally were placed on the bench or in the alcove of elaborated graves. Cribbing was found in several graves, although its frequency was difficult to assess because of looting. The rarity of elaborated grave types made it difficult to evaluate the correlation with characteristics such as age and sex of the deceased, but most elaborated graves were found with adults (Berg, Bushèe, et al. 2003:254). No slab-covered pits were found at Rocky Point, but this facility was present at other sites in the project, discussed below. One infant burial was covered with an inverted bowl (Bushèe and Berg 2003:101).

The most intriguing feature of burial practices at Rocky Point was the reuse of grave facilities. There were two cases of multiple individuals stacked vertically within the same mortuary pit, and these burials were undisturbed. The presence of multiple individuals in some of the looted pits indicates that this practice might have been more common. The undisturbed, multiple interments were buried at different times, and the placement and orientation of the body was the same. Berg, Bushèe, et al. (2003) discussed the evidence that such facilities represented simultaneous multiple interments and that the bodies of the deceased were stored until the death of the highest-ranking family member (Loendorf 1998a). They concluded that the evidence was equivocal, and that most such burials represented reopened and reused facilities. We concur with this interpretation.

Corporate ownership of mortuary facilities, probably by extended families, lineages, or clan segments, certainly is indicated, and the tight clustering of burial facilities within limited, architecturally bounded space suggests that these areas were considered sacred ground. The presence of domestic facilities, such as roasting pits and other thermal pits, in the courtyards demonstrates, however, that daily activities also took place in these areas.

Body Position and Orientation. All undisturbed burials were extended and supine. Orientation was more variable than among the CCP burials and the sites discussed above, with burials oriented to all cardinal directions. North-south orientation was twice as common as east-west; north was the most frequent orientation (Table 80). The single west-oriented burial was assigned to the Miami phase. Children were oriented to the east more commonly than adults in this sample. North-south and east-west orientations were found in all burial localities.

Body Preparation. Red ochre was found on seven individuals. Placement was similar to other reported burials, with a somewhat greater tendency for pigment to cover the entire body than elsewhere. The absence of pigment staining on subadult individuals is notable. The deceased were adorned, but no evidence for clothing was found at Rocky Point. Organic residue probably representing matting was found below one individual.

Artifactual Accompaniments. Most burials had accompaniments, and ceramic containers were by far most common. Among the rare accompaniments were ornaments, painted wooden objects, projectile points, and pigment-stained manos. Ornaments included *Glycymeris* bracelets and shell-frog pendants, the latter accompanying burials of adult women and children.

The most common ware was pottery labeled Gila Red, probably corresponding to similar ceramics labeled smudged red ware during the RPM (Table 81). Other red ware, Salado Red, and among the Gila phase burials, Roosevelt Red Ware ceramics, also were relatively common. Identified types unique to the Globe Highlands mortuary assemblages included San Carlos Red, San Carlos Red-on-brown, Tularosa Fillet Rim, and St. Johns Polychrome. The absence of white-on-red pottery and Pinto Polychrome and the presence of unpainted pottery labeled as McDonald Corrugated also are unusual; it is not known to what degree these differences may stem from typological issues, time, or other factors. Connections between populations living to the north and east on the San Carlos Reservation and Safford areas are suggested. Patterning of containers by function and body position paralleled those seen at AZ U:8:450/14b.

Whereas the preferred placement for canteens and jars thought to represent water-storage or water-transport jars was at the skull, almost as many individuals also had jars placed elsewhere at the body. Again, most of the burials lacking jars were subadults (Table 82).

Two individuals were interred with clusters of projectile points suggestive of hafted arrows. Feature 71 was an adult of indeterminate sex with four projectile points place at the left skull and shoulder. A painted wooden stick in the same area may have represented a bow or a longer staff (Bushèe and Berg 2003:90). This burial was assigned to the Miami phase. Feature 53B, an adult of indeterminate sex, contained five projectile points arranged along the left arm and shoulder (Bushèe and Berg 2003:96). At other sites, point clusters associated solely with adult males, and placed in similar body positions, have been suggested as a signature of sodality membership (Whittlesey and Reid 2001). Three painted wooden artifacts were associated with the 30–40-year-old male in burial Feature 113B. One may have represented a staff, and the second was shorter and might have been a bow, rasp, or other object. The third was a small, curved piece of wood with yellow woven material located by the left upper arm (Bushèe and Berg 2003:113). This object could have been an arm band.

Table 80. Head Orientation among Burials from the Rocky Point Site (AZ V:9:365/02-908 [ASM/TNF]) (SR 88–Wheatfields Project) by Age

Direction	Adult (> 15 Years)		Child	
	n	%	n	%
North	8	38.1	2	28.6
South	6	28.6	2	28.6
East	6	28.6	3	42.9
West	1	4.8	—	—
Total	21	100.1	7	100.1

Note: Data from Busheè and Berg (2003).

Table 81. Ceramic Wares and Types Associated with Inhumation Burials at the Rocky Point Site (AZ V:9:365/02-908 [ASM/TNF]) (SR 88–Wheatfields Project)

Ware or Type	Miami Phase		Roosevelt Phase		Gila Phase		Total	
	n	%	n	%	n	%	n	%
Gila Red	16	84.2	19	39.6	—	—	35	40.7
Gila or Salt Red	1	5.3	1	2.1	—	—	2	2.3
San Carlos Red	—	—	1	2.1	—	—	1	1.2
Salado Red	—	—	3	6.2	5	26.3	8	9.3
Unidentified red ware	—	—	7	14.6	1	5.3	8	9.3
Tularosa Fillet Rim	1	5.3	—	—	—	—	1	1.2
McDonald Corrugated	—	—	4	8.3	—	—	4	4.5
Tonto Corrugated	—	—	3	6.2	—	—	3	3.5
Tularosa Black-on-white	—	—	3	6.2	1	5.3	4	4.5
Snowflake Black-on-white	1	5.3	2	4.2	—	—	3	3.5
Pinedale Black-on-white	—	—	1	2.1	—	—	1	1.2
Unidentified white ware	—	—	1	2.1	—	—	1	1.2
San Carlos Red-on-brown	—	—	1	2.1	—	—	1	1.2
Unidentified black-on-red	—	—	1	2.1	1	5.3	2	2.3
St. Johns Polychrome	—	—	1	2.1	—	—	1	1.2
Unidentified White Mountain Red Ware	—	—	—	—	1	5.3	1	1.2
Gila Polychrome	—	—	—	—	9	47.4	9	10. 5
Tonto Polychrome	—	—	—	—	1	5.3	1	1.7
Total	19	100.1	48	100.0	19	100.2	86	100.0

Note: Data from Bushèe and Berg (2003).

Table 82. Placement of Whole or Restorable Ceramic Containers with Inhumation Burials at the Rocky Point Site (AZ V:9:365/02-908 [ASM/TNF]) (SR 88–Wheatfields Project)

Placement	Adult			Subtotal		Subadult		Total
	Male	Female	Ind	n	%	n	%	(n)
Jar at skull/shoulder	2	2	2	6	85.7	1	14.3	7
Jar at feet/legs	—	—	1	1	100.0	—	—	1
Jar elsewhere	1	1	2	4	66.7	2	33.3	6
No jars	1	1	1	3	37.5	5	62.5	8

Note: Data from Bushèe and Berg (2003); only primary inhumations tabulated.

Bioarchaeological Data. Four individuals from Rocky Point exhibited artificial cranial deformation of the vertical-occipital type. Hurlbut (2003:169) indicated that all individuals with sufficiently complete crania to permit reconstruction exhibited deformation.

BC Site

The BC site (AZ V:5:220/02-86 [ASM/TNF]) was a small, masonry compound situated on a terrace above Murray Wash. The site consisted of nine rooms and several walled courtyards, one of which was a large, square courtyard situated at the southern end of the site (Ensor et al. 2003). None of the rooms was isolated, and several groups were contiguous. Twenty-four burial features in two clusters and a few isolated burials were found. All but one of the burials were assigned to the Roosevelt phase.

Grave Location. The great majority of burials at the BC site were placed within courtyards. A few burials were within rooms, but none was interred outside of the compound. The two clusters were located in separate courtyards. Burial Group A was placed within courtyard Feature 5 and consisted of 13 burials; the smaller Burial Group B was located in courtyard Feature 22 and included five burials. Both courtyards and burial clusters were located on the east side of the compound. One isolated burial was found in the large courtyard at the site's southern end. Four additional burials were located in Rooms 6, 17, and 29 (Bushèe and Berg 2003:Figure 3). Adults, both male and female, and subadults were buried in the courtyards. Only subadults (children, infants, and fetuses) were buried within rooms, however.

As at the Rocky Point site, courtyards contained a variety of domestic facilities—slab-lined and unlined storage pits, thermal pits, hearths, postholes, pits, and roasting pits (Ensor et al. 2003).

Grave Facility. Grave facilities at the BC site showed an interesting degree of variability. Simple pits analogous to the CCP Type 4 grave were common as at Las Tortugas, but there also were benched pits, alcove graves, slab-covered pits, and combinations. No cribbed graves were found, but this could be an artifact of preservation, as cribbing was noted at the Rocky Point site. Proportionately more subadults were buried in simple pits, and three-fourths of burials interred in elaborated graves of different types were adults. Like Las Tortugas, there were several slab-covered graves at the BC site. One simple pit capped with slabs was used for a 4–8-year-old child buried in a room; an adult male was buried in a grave that included a bench, alcove, and slab covering; and two adult females were buried in a benched pit covered with slabs (Bushèe and Berg 2003). The male adult was the single Gila phase burial at the site; the left side of his body was placed in the alcove. Although Bushèe and Berg (2003:39) (see also Berg, Bushèe, et al. 2003:Figure 106) indicated that some of the slabs had been set at an angle and would have been visible from the courtyard, implying a marking function, this also could have been a function of slumping of the pit.

Body Position and Orientation. All undisturbed burials at the BC site were extended (Bushèe and Berg 2003). One burial, an elderly adult female, was placed prone, but otherwise resembled typical interment practices. Orientation resembled the Rocky Point site and differed from other sites described here. The majority of interments were oriented with the head to the south or southeast. There were two examples of northern orientation, two cases of western orientation (one of which was the prone adult female), and once instance of eastern orientation. Subadult burials constituted 60 percent of the burials oriented in a direction other than the preferred south.

Body Preparation. Ochre was used on some burials at this site, but the overall poor preservation and disturbance made any comparisons futile. Ochre was found on the legs or feet, the upper body, or in multiple positions. Organic residues indicated two individuals had been wrapped in matting or a blanket or had been dressed in clothing (Bushèe and Berg 2003).

Table 83. Ceramic Wares Associated with Inhumation Burials at the BC Site (AZ V:5:220/02-86 [ASM/TNF]) (SR 88–Wheatfields Project)

Ware or Type	Roosevelt Phase	Gila Phase	Total	
			n	%
Salado Red	8 [a]	—	8	30.8
Salado White-on-red	1	—	1	3.8
Unidentified red ware	4	3	7	26.9
Tonto Plain	1	—	1	3.8
Tonto Corrugated	4 [b]	1	5	19.2
Unidentified brown corrugated	1	—	1	3.8
San Carlos Red-on-brown	1	—	1	3.8
St. Johns Polychrome	1	—	1	3.8
Gila Polychrome	—	1	1	3.8
Total	21	5	26	99.7

Note: Data from Bushèe and Berg (2003).
[a] One represented several sherds.
[b] One painted with design of thick, white lines.

Artifactual Accompaniments. Grave goods were similar in kind and number to the Rocky Point site. Ceramic containers were most common. Personal ornaments were present, although not numerous, and included bone hairpins and turquoise earbobs. A painted wooden stick was found with one male burial (Bushèe and Berg 2003:23). The small sample and disturbance made it impossible to tabulate funerary vessels by body position, but examples of jars placed near the head were noted. Salado Red was the most common ceramic ware, followed by unidentified red ware and Tonto Corrugated ceramics (Table 83).

Bioarchaeological Data. No individuals from the BC site had sufficiently complete crania to determine artificial deformation (Hurlbut 2003:Table 23).

Summary. Orientation of burials, a comparatively high number of slab-covered graves, and variability in ceramic wares distinguished mortuary treatment at the Rocky Point and BC sites. An unusually high frequency of north-south orientations and an atypically low frequency of eastern orientations was noted. Moreover, orientation differed by site, with north predominating at Rocky Point and south at the BC site. These distinctions correlated with ceramic variation. Whereas Gila Red was the dominant funerary ware at the Rocky Point site, Salado Red predominated at the BC site. It is not known to what extent these factors reflect settlement location, time of occupation, patterns of interaction, or other factors, such as ethnicity. The BC site was located in the northern part of the Wheatfields project area, whereas the Rocky Point site was in the central project area (Wheatfields section). Regardless, the variability in mortuary treatment manifest in the Wheatfields Project sample implies social-identity distinctions at some level.

Roosevelt Community Development Study

The Meddler Point site is unique among the sites in the comparative sample, including the CCP sites, in that cremations apparently dating to the Classic period were found along with inhumations. Accordingly, information about these burials is summarized here. Seven secondary cremations were found in the same central cemetery that yielded the pre-Classic period cremations discussed above (Swartz et al. 1995). These features resembled earlier secondary cremations in the irregular, shallow pits, general lack of burning, and scarcity of calcined bone.

Accompaniments included partial ceramic containers, two of which represented a bowl inverted over another bowl; numerous sherds of different wares and types, usually found in clusters; steatite disk beads and shell beads; and fragmentary projectile points. The lack of human bone in several of these pits calls into question whether they actually represented cremations. Two secondary urn cremations were dated to the Classic period. The remains in Feature 392 were placed in an indeterminate red ware jar and covered with an indeterminate painted corrugated bowl. The only other object was a hand stone found above the urn (Swartz et al. 1995:189). The remains in Feature 457 were inside a partial Gila or Salt Red jar covered with a partial Walnut Black-on-white bowl and sherds from a corrugated bowl. The fill contained numerous sherds from several plain ware and red ware vessels. A quartzite pendant also was found (Swartz et al. 1995:189). The lack of ritual objects and ornaments in these cremations contrasts with the relatively richly appointed secondary cremations from Meddler Point and with Classic period inhumations.

Several features of these cremations contrast with the mortuary practices of inhumation burials and imply differences in social identity. First, the cremations were placed in unbounded, outdoor space (the central cemetery,) whereas the great majority of contemporary inhumations were interred in residential courtyards inside compounds. Second, the lack of ornaments and utilitarian objects indicating special skills is notable, although of course, the sample is small. Third, no Salado Red ceramics were associated with these burials, which also contrasts with inhumations in Tonto Basin (Salado Red ceramics were recovered from other contexts at Meddler Point). Small cremation cemeteries also were found elsewhere in the Lower Tonto Basin during the Classic period. One was present at the Schoolhouse Point Mound (Loendorf 1996b), and the other was at the Bass Point Platform Mound (Loendorf et al. 1995). Neither cemetery was large, as the entire RPM sample consisted of 24 cremations (Loendorf 1998b:200). The association of small cremation cemeteries with large inhumation cemeteries at residential compounds and the differences noted previously imply that the cremated individuals were culturally distinct from the local population. It is intriguing that most cremations were found at sites with inferred platform mounds.

Gila Phase and Classic Period Mortuary Practices

Grasshopper Pueblo (AZ P:14:1 [ASM])

Grasshopper Pueblo was the locale of the University of Arizona Archaeological Field School from 1963 to 1992 (Reid and Whittlesey 2005). This 500-room Mogollon Pueblo settlement is located on the Fort Apache Indian Reservation west of the Apache village of Cibecue. Site layout consisted of three main roomblocks on either side of a drainage. Room Block 1was built on the east side of the drainage. This linear roomblock had no plazas; architectural information indicates that it was built by and continued to be home to Anasazi, or Ancestral Pueblo, people initially deriving from the Colorado Plateau. On the west side of the drainage, Room Blocks 2 and 3 were two large, plaza-centered roomblocks that were built and occupied by local Mogollon people. A great kiva built over an earlier plaza (Plaza 3) was located at the south end of Room Block 2 (Reid and Whittlesey 1999).

During the 30-year history of the field school, excavations at Grasshopper compiled one of the strongest records for immigration and ethnic coresidence in the Southwest (Reid and Whittlesey 1999, 2005; see also Ezzo 1993; Ezzo and Price 2002; Ezzo et al. 1997; Price et al. 1994; Reid 1989; Riggs 2001; Triadan 1997; Whittlesey and Reid 2001; Zedeño 1994). Although strontium-isotope analysis, cranial deformation, architectural styles, and ceramic technology provide multiple lines of evidence for coresidence of Anasazi and Mogollon peoples at Grasshopper, mortuary practices also inform on this topic. Until the excavation of human burials ceased in 1979 in accord with the wishes of the White Mountain Apache, the remains of 674 individuals were collected (Whittlesey and Reid 2001). Thirty-nine percent (n = 263) were disturbed prehistorically.

In mortuary treatment at Grasshopper Pueblo, we can see strong parallels to practices of Tonto Basin and adjacent areas, such as the Globe Highlands. There also were some differences that can be attributed, in part, to the development of unique integrative mechanisms, including ritual sodalities, in an aggregated pueblo with a multicultural population living in conditions of social, demographic, and economic stresses. The data discussed here derive primarily from Whittlesey (1978) and Hinkes (1983) and are summarized by Whittlesey and Reid (2001), Reid and Whittlesey (1999), and Whittlesey (2002). The Grasshopper sample is significantly skewed toward subadults (66 percent) and female adults (60 percent of sexed burials), and these factors may have affected patterning in mortuary behavior to an unknown degree.

Mortuary populations from Roosevelt phase settlements in Tonto Basin appear to be much more balanced in terms of age and sex distributions. Of the sexed adult burials in the CCP sites, 46 percent (n = 16) were females and only 22 percent (n = 10) of the population were subadults. The much smaller burial population of the Mazatzal House was very similar in demographic terms to the CCP sites. Females represented 44 percent of the adult population and children represented 25 percent of the population. In TCAP sites, 53 percent of the sexed adult burials were female, and 34 percent of the population was subadults. The ratio of males (52 percent) to females (48 percent) from the Wheatfield's collection was also similar, however, the subadult ratio at 41 percent (Hurlbut 2003:151) was intermediate between the other Roosevelt phase populations and the later population from Grasshopper.

Grave Location

Strong patterning is evident in the burial locales of adults and children. Typically, subadults were buried within room spaces, and adults were buried in the plazas or architecturally unbounded spaces, such as the refuse mound east of Room Block 1. These patterns were not absolute, however. The shift to intramural burial of children is one of the most obvious differences between the Roosevelt and Gila phases. The youngest infants and fetal burials were placed in shallow pits immediately below the floors of occupied rooms. Male and female adults were buried in the plazas, although there was a slightly tendency for plaza burials to represent more of one sex than another. More female burials were interred in Plaza 2, located at the north end of Room Block 2, and more males in Plaza 1, the large plaza separating Room Blocks 2 and 3. When the Great Kiva ceased to be used as a ritual facility, women and children were buried there. There was a tendency for burials with more accompaniments to be located in the plazas, rather than in rooms or architecturally unbounded spaces.

These patterns are interpreted with reference to the group carrying out burial and mourning activities. Whereas the burial of children clearly was a family affair, adults, particularly men, were buried in public spaces and often with a great deal of community participation. This has been linked to the development of sodalities at Grasshopper and the participation of sodality members in burial activities (Reid and Whittlesey 1999; Whittlesey and Reid 2001).

Grave Facility

The same types of graves found in the CCP sites, elsewhere in Tonto Basin, and in surrounding areas, such as the Globe Highlands, were used to bury the dead at Grasshopper Pueblo. The most common grave was a simple, unelaborated pit (Type 4). There were, however, several types of elaborated graves: pits with one or two benches parallel to the long axis of the grave, often covered with wooden cribbing; alcove graves, called pit-and-chamber graves; graves covered with flat, stone slabs; stone-lined graves, in which slabs or wall stones were used to line the pit sides; cist graves, which were both lined with and covered by slabs; and multiple graves with two or more kinds of elaborations. Burial in trash without a formal pit was present but extremely rare.

Grave type varied by age and sex of the deceased. Cist graves, slab-covered graves, and burial in trash were used more commonly for children less than 4 years of age and for adult women. Cribbed graves were used less often for subadults, and when used, typically it was older children who were interred in this type of grave. Although the sample is extremely small, all alcove graves contained the remains of male adults with lambdoidal cranial deformation. Cribbed graves were used more often to bury adult females, and benched graves were used with male adults. There was a tendency to bury the oldest individuals in elaborated graves, regardless of sex.

Type of grave facility varied with intravillage provenience (Table 84). Whereas Type 4 graves were the most common in all areas of the pueblo, certain proveniences had much higher incidences of elaborated graves. Room Blocks 2 and 3, thought to have been inhabited by local residents and immigrants from outside the mountain region, had a much lower frequency of simple-pit graves. Slab-covered graves were found more commonly in Room Blocks 2 and 3, and stone-lined graves were found only in these roomblocks. Burial in trash without a formal pit was most common in Room Block 3.

Burial facilities were used repeatedly over time. This practice resulted in the disturbance of original burials and reburial of the remains and accompaniments, usually high in the pit of the most recent burial. The high frequency of disturbed and disarticulated remains in the burial sample was a product of this practice, particularly because so many burials of children were interred in rooms (Reid and Whittlesey 1999; Whittlesey 1978; Whittlesey and Reid 2001). Clearly, rooms were considered corporate family burial space, and there is some evidence that individual grave facilities were used repeatedly, as indicated by the vertical "stacking" of individuals in the same pit. There also were a few cases of multiple, simultaneous interments of two individuals laid side-by-side and sharing funerary accompaniments.

Body Position and Orientation

Extended-supine body position with legs and arms parallel to the torso was most common, found in three-fourths of the undisturbed burials, but less so than in the CCP and TCAP. Occasionally, the feet were crossed at the ankles, and the hands rested on the torso. Variations from this standard typically were subadults. About three-fourths of the few fully flexed and semiflexed burials were subadults, and there also was greater variation in the placement of the extremities.

Orientation was more variable at Grasshopper than at the CCP sites or Las Tortugas. Although most burials (about 55 percent) were placed with the head to the east, orientation to all cardinal directions was noted. The majority of individuals oriented to a direction other than east were subadults; this could be related to the practice of intramural burial of subadults, which typically resulted in grave alignment with room walls. Nevertheless, there were some intriguing differences according to intravillage provenience (Table 85). Proportionately more individuals were buried with their head to the north in Plaza II, and fewer with eastern orientations Room Block 3, the outliers, and Plaza 1.

Body Preparation

Completeness of information on pigments, clothing, and matting is a factor of preservation and skill of the excavator, which varies considerably in a field-school setting, and therefore, existing information may not be representative. Placement of nonperishable ornaments indicates that many burials were dressed for burial in clothing and adornments, and many also were wrapped in matting, blankets, or cloth. Red ochre was used less extensively than at the Roosevelt phase sites discussed previously. Sometimes powdered pigments were sprinkled on the body and accompaniments. These individuals apparently enjoyed more power, authority, or prestige than most, although Reid and Whittlesey (1999) (see also Whittlesey and Reid 2001) have linked these variables to ritual, rather than secular, leadership. A few individuals were buried with the head placed on a wooden pillow.

Artifactual Accompaniments

With the exception of objects that may indicate ritual behaviors and sodality membership, the kinds of artifacts and

Table 84. Grave Facility by Intravillage Provenience, Grasshopper Pueblo

Village Area	Pit	Cist	Slab Covered	Stone Lined	Cribbed	Pit and Chamber	Benches	Trash	Total	Burial n
East Village										
(Room Block 1)	88	1	9	—	6	—	1	1	106	108
West Village										
Room Block 2	73	—	17	4	7	2	—	1	104	107
Room Block 3	32	—	7	1	2	—	1	—	43	49
Outliers	7	—	2	—	—	—	—	5	14	12
Great Kiva	40	1	2	—	5	—	1	1	50	50
Plaza 1	16	—	—	—	—	—	—	—	16	16
Plaza 2	15	—	2	—	6	—	3	—	26	27
Outdoor areas (middens, etc.)	39	1	1	—	1	—	—	1	43	44
Total	310	3	40	5	27	2	6	9	402	413

Note: Data from Whittlesey (1978:Table 1).
Includes only undisturbed inhumations.
Other graves types and indeterminate facilities excluded.

Table 85. Burial Orientation by Intravillage Provenience, Grasshopper Pueblo

Village Area	North		South		East		West		Total	
	n	%	n	%	n	%	n	%	n	%
East Village										
(Room Block 1)	19	17.6	12	11.1	62	57.4	15	13.9	108	100.0
West Village										
Room Block 2	22	20.6	12	11.2	59	55.1	14	13.1	107	100.0
Room Block 3	12	24.5	8	16.3	18	36.7	11	22.4	49	99.9
Outliers	3	25.0	4	33.3	5	41.7	—	—	12	100.0
Great Kiva	6	12.0	3	6.0	32	64.0	9	18.0	50	100.0
Plaza I	3	18.8	4	25.0	6	37.5	3	18.7	16	100.0
Plaza II	10	37.0	—	—	17	63.0	—	—	27	100.0
Outdoor areas (middens, etc.)	9	20.5	1	2.3	28	63.6	6	13.6	44	100.0
Total	84		44		227		58		413	

Note: Percentages sum by column.
Data from Whittlesey (1978:Table 37).
Undisturbed interments only.

their placement in the grave were similar to other sites described here. Ceramic containers and personal ornaments were most common. Other than the tool kits indicating a special skill, such as flint knapping, domestic tools and equipment were conspicuously sparse among the mortuary artifacts. Whittlesey (1999) concluded from this patterning that it was the social and ceremonial memberships of the deceased, rather than their roles in everyday domestic life, that influenced their treatment at death.

Children were buried with ceramic containers, although, on average, with many fewer than adults, and with certain kinds of shell, stone, and bone ornaments—often disk beads worn as necklaces, bracelets, and anklets, and whole-shell and stone-pendant earbobs. The number of accompaniments and the number and kind of ceramic containers varied with age. Fetal burials and young infants were accompanied by the fewest objects and seldom had painted ceramic vessels. Older children had more vessels and more painted wares. Subadults also tended to be accompanied by miniature and small containers more frequently than adults.

Adult women were buried with fewer grave goods than adult men. Ornament types also varied by age. Bone hairpins, *Conus* sp. shell tinklers, *Glycymeris* sp. shell pendants, and bone beads were found only with male burials; turquoise-mosaic shell ornaments, shell frogs, and rings of shell and bone were found only with females. Both men and women were buried with *Glycymeris* shell bracelets, typically worn on the left arm.

The kinds of ceramic wares placed with burials differed extremely from the other sites discussed in this chapter. The most common ware in burial context was Cibicue Polychrome, including Cibicue Painted Corrugated and rare variants with unusual color combinations (Table 86). Mauer (1970) suggested that this ware was made specifically for mortuary use, and indeed it was rare in domestic contexts, and many vessels exhibited little or no use wear. Following in frequency were Brown Obliterated Corrugated, Roosevelt Red Ware, and White Mountain Red Ware. As among other collections discussed here, ceramic containers were placed at the head, feet, and pelvis, in that order. Although accompaniments were not tabulated by container function, many small jars were placed at the head or shoulders. Sherds recycled from pieces of larger vessels, always shallow, outcurved containers, were placed with some burials. They contained charcoal and ash, suggesting wood or other substances might have been burned in these containers during mortuary rituals.

Technological and paste-chemistry studies (Triadan 1997; Zedeño 1994) have shown that the Grasshopper ceramic assemblage consisted of locally made and nonlocal wares. Utilitarian pottery, including brown corrugated and Salado Red, was tempered with diabasic sand originating in the Q Ranch or Canyon Creek areas and also with sand deriving from Cibecue Creek to the east of the Grasshopper Plateau. Similarly, Roosevelt Red Ware and White Mountain Red Ware also have variable paste compositions indicating local and nonlocal origin. Grasshopper Red Ware, by contrast, was made locally.

Two kinds of artifactual accompaniments differed. First, a few burials were accompanied by utilitarian objects suggesting a specialized craft skill, such as flint knapping or basketry, or by ceremonial objects indicating ritual skills. The latter included quartz crystals; unusually shaped, flaked-stone tools; polished agate cylinders; marine shells; curious natural objects, such as concretions; and worked and unworked pigments. Many such objects were tightly clustered in a fashion to suggest they were originally contained in a perishable pouch or bag, and one burial had indisputable evidence of such a container—a pouch made from the pelt of a skunk with the head and feet still attached. Occasionally, such caches also were placed inside a ceramic container. Other items with probable ritual significance included painted wooden staffs, whole *Laevicardium* shells, and bone rasps that were placed with burials of adult males.

Second, a number of males were buried with objects of a patterned, unusual distribution indicating that they signaled membership in men's ceremonial associations, or sodalities. These included perforated *Glycymeris* sp. pendants worn exclusively over the pelvis in a fashion to suggest they were originally sewn to a belt, loincloth, or kilt; *Conus* sp. shell tinklers, which were used to decorate quivers of arrows, to top ritual wooden staffs, and were sewn to clothing, as indicated by their position in burials; bone hairpins; and quivers of arrows. Bone hairpins were found in stylized fashion at the skull of adult males, indicating they were worn in a knot of hair. Invariably, clusters of projectile points were placed with the points facing upward and, with one exception, were found at the left shoulder. The position of the points and other objects, such as bone rasps, implies that the points were hafted and contained within a quiver (Whittlesey and Reid 2001). Arrow quivers have been interpreted as symbols of membership in a war or hunting society; the most elaborate burial found at Grasshopper may have been the leader of this group (Reid and Whittlesey 1999; Whittlesey and Reid 2001). This aged male was accompanied not only by his own personal quiver of arrows but also by more than 130 arrows in clusters, which may have been contributed by fellow society members. The arrows, the body, and the numerous other accompaniments had been sprinkled with ground specular hematite.

Bioarchaeological Data

The majority of individuals at Grasshopper exhibited vertical-occipital cranial deformation resulting from cradleboard use in infancy. A small group of 28 individuals had lambdoidal cranial deformation. Three-fourths of these individuals were female. These people were buried in the Room Block 1 and Room Block 2 but not in Room Block 3. Proportionally more of the people with lambdoidal deformation were buried in the Room Block 1 and

Table 86. Major Ceramic Wares in Mortuary Contexts at Grasshopper Pueblo

Ware	Frequency
White Mountain Red Ware[a]	109
Roosevelt Red Ware[b]	111
Roosevelt Red Ware, salmon variant	43
Grasshopper Red Ware[c]	74
Brown obliterated corrugated	120
Plain ware	63
Salado Red Ware[d]	63
Cibicue Polychrome[e]	140
Pinedale Black-on-white	49

Note: Data from Whittlesey (1978:Table 7).

[a] Includes Pinedale Black-on-red, Pinedale Polychrome, Cedar Creek Polychrome, Fourmile Polychrome, Showlow Polychrome.

[b] Includes Pinto Polychrome, Pinto-Gila Polychrome, Gila Polychrome, Tonto Polychrome.

[c] Includes Grasshopper Black-on-red, Black-on-cream, Polychrome, Polychrome with Red, and Cream variety.

[d] Includes smoothed variant, corrugated variant, fingernail-incised variant, and Salado White-on-red; also includes smudged and unsmudged interiors.

[e] Includes smoothed variant (Cibicue Polychrome), corrugated variant (Cibicue Painted Corrugated), and several rare, bichrome and polychrome painted variants; also includes smudged and unsmudged interiors.

extramural refuse areas. A smaller group of eight individuals lacked cranial deformation. The burials with undeformed skulls were distributed throughout the pueblo, although again there was none in Room Block 3.

Summary

An overarching pattern was observed in treatment of the dead, despite the presence of two, perhaps three, different ethnic groups at Grasshopper Pueblo. Differences in treatment related primarily to the age and sex of the deceased and to membership in inferred ritual sodalities. Burial of subadults in rooms, the shift to public burial of adults, and the development of ritual sodalities appear to be linked to changing social and ceremonial organization at this large, aggregated pueblo. Whereas during the Miami and Roosevelt phases, burial of the dead was a family affair conducted for the immediate kin group and accomplished with corporately owned facilities, this practice was maintained only for subadults during the Gila phase at Grasshopper. Adults, primarily men, were buried in public settings and presumably by nonkin-related persons, perhaps members of their sodalities. The burial of women and children often was carried out in private settings, however, and differences in grave facility, body position, and orientation may indicate that family origins dictated how they were buried (Whittlesey 1999).

Classic Period Mortuary Practices in the Salt River Valley

Mitchell and Brunson-Hadley (2001) reported mortuary practices from five sites in the Salt River Valley: Grand Canal Ruins, Casa Buena, Pueblo Grande, Los Muertos, and Pueblo Salado. Platform mounds were built at Pueblo Grande, Los Muertos, and Casa Buena; Grand Canal was a smaller habitation. All sites were occupied during the Soho and Civano phases, but Pueblo Grande had a large pre-Classic period component, and Los Muertos and Pueblo Salado may have continued to be inhabited longer than the others (Mitchell and Brunson-Hadley 2001:50). Mitchell's and Brunson-Hadley's overview is supplemented with information from Pueblo Grande, as applicable.

The most obvious difference between mortuary practices at most of the sites discussed previously and the Classic period sites in the Salt River Valley is the use cremation and inhumation. Inhumation was much more common than cremation, constituting 77 percent of the burial features identified at Pueblo Grande (Mitchell 1994a:Table 3.1). For comparative purposes, the summary presented here focuses on the inhumations, noting where patterns among the cremations differ.

Grave Location

According to Mitchell and Brunson-Hadley (2001:52), "Inhumation and cremation burials are interred in discrete cemeteries. These cemeteries can be linked directly to adjacent habitation areas (see Mitchell 1992)." Adult inhumations were placed in discrete cemeteries outside of residential compounds and in courtyards within compounds, as at many of the Miami and Roosevelt phase sites discussed above. Subadult inhumations were placed in extramural cemeteries and under house floors; the latter were rare (Mitchell et al. 1994:108). One difference appears to be the frequency of extramural burials vs. those that were interred within compounds. The latter appear to have been much less frequent, judging from maps presented in Mitchell et al. (1994). Mitchell (1994c:209) concluded that the discrete burial groups represented kinship groups, and by extension, that subgroups within the cemeteries represented family groups or households.

Cremation cemeteries also were discrete but were located outside of residential compounds and only rarely within such units (Brunson 1989). Although cremations and inhumations were placed together in the same cemeteries at some sites (Mitchell 1991), at most sites, cremations and inhumations were placed in different, unmixed cemeteries (e.g., Mitchell 1994d:Figure 3.1). At Pueblo Grande, a large cremation cemetery was located between two residential compounds (Mitchell et al. 1994:Figure 5.3). Although the use of dual mortuary technological styles has been explained with reference to the status or prestige of the deceased (see Brunson 1989) or the scarcity of fuel (Loendorf 1996a), the more parsimonious explanation, in light of the connection of cemeteries with residential units and Carr's (1994) cross-cultural ethnographic survey, is that the inhumation and cremation cemeteries represent social groups with distinctive social identities. Mitchell (1994b:202) concluded that "it is not clear why these two different forms of burial were used, although it may be related to otherwise subdued ethnic divisions among the core-area Hohokam." Most of Mitchell's (1994b) analyses treated the Pueblo Grande inhumations and cremations together, thus blending the differences that might have existed. He did note, however (Mitchell 1994b:202–206) that "both burial methods probably had elaborate rituals associated with them."

Grave Facility

The normative inhumation grave type was a simple, unelaborated pit. A number of burials had benches on which wooden cribbing was placed, like those described above for Grasshopper Pueblo, the Globe Highlands, and Tonto Basin sites. About one-third of the inhumations at Pueblo Grande were buried in this fashion (Mitchell and Brunson-Hadley 2001:52). Benches were placed on one, two, three, or all sides of burial pits. Niched, or alcove, grave pits were present at Pueblo Grande, and an unexpectedly high proportion of these graves contained the remains of subadults. Twenty percent of the burial population at Pueblo Grande died at less than 1 year of age and 50.7 percent died before age 15 (Van Gerven and Sheridan 1994:9, 17). As elsewhere, simple pits were used more frequently for children, and adults more often were buried in elaborated graves (Mitchell 1994d:81).

The absence of slab-covered pits is notable. Although generally, this type of grave facility is rare, the sample from Pueblo Grande was large (664 individuals in 620 inhumation pits), and some examples of this type of facility should have been discovered if it was used prehistorically. Suitable materials were probably not available locally, however. Mitchell and Brunson-Hadley (2001:52) observed the presence of adobe-lined pits and "sarcophagi" at some sites, including Los Muertos, Mesa Grande, and Las Colinas. Although rare, multiple burials were found at all sites.

At Pueblo Grande, several lines of evidence suggest the repeated use of family "tombs." Multiple burials with several individuals were present, although not common. Multiple-burial pits held from two to four individuals, and paired individuals represented the most frequent grouping. Most often, the bodies were stacked vertically. Mitchell et al. (1994:137) observed that the more individuals that were buried in a pit, the greater the likelihood of disarticulated remains to be present. As elsewhere, "the original, articulated skeleton was placed in a pile after the grave was opened up to inter a second individual" (Mitchell et al. 1994:137). There were 50 examples of what Mitchell et al. (1994:135) termed "massed graves"—burial pits placed so closely together that the pits overlapped. These contained two to nine individual burial pits. In addition, there were 44 features that were considered to be graves, although they lacked bone. Forty-one of these features held ceramic containers (Mitchell et al. 1994:114).

Body Position and Orientation

The normative pattern was extended-supine position with the head to the east. At Pueblo Grande, three-fourths of the burial pits were oriented east; eighty percent of the excavated individuals were oriented with the head placed to the east or southeast (Mitchell 1994b:182). A few individuals were placed in a prone position, and a few were flexed. Most interesting were the eight seated burials, which were found in most burial groups (Mitchell et al. 1994:126). This body position is not found elsewhere in the region during the Formative period, but it was common in the Archaic period and was also present much later at Paquimé (Casas Grandes), Chihuahua, where it appears to reflect individuals with high standing in the community (Ravesloot 1988). Subadults tended to be placed in more varied positions (Mitchell 1994d:79, 81). Mitchell (1994d:79, 81) also found a correlation between atypical body positions and simple pits but no associations with orientation.

Body Preparation

Pigment staining was observed on 40 burials out of 664 inhumation remains at Pueblo Grande (Mitchell and Brunson-Hadley 2001:52). There was much greater variability than among inhumations in Tonto Basin and elsewhere; pigment colors included blue, green, white, and yellow in addition to red. Pigment was found most commonly on the facial area but also was present on the torso (Mitchell 1994b:185). The presence of individuals reported to have the head propped up may reflect the use of wooden pillows, as at Grasshopper Pueblo and Los Hermanos, a TCAP site (Ferg 2001:Table 7.5).

Artifactual Accompaniments

At Pueblo Grande, ceramic containers were the most frequent funerary artifacts, and personal ornaments were common, including shell beads, bracelets, and pendants; stone pendants and beads, of turquoise and other materials; and bone hairpins. Although these artifacts were represented in the CCP sample, they were not as common. Projectile points and grinding tools also were interred with the dead. Illustrations (Mitchell et al. 1994) indicate that at least some clusters of points were placed at the left shoulder of burials. Hairpins were associated with males, as elsewhere in central Arizona (Mitchell 1994a:144), and illustrated examples show hairpins at the skull. Because awls and hairpins were not distinguished in the Pueblo Grande analysis, no further information can be gleaned about hairpin placement. The bone tools associated with females likely were awls rather than hairpins, based on distributions at other sites.

Charred wood was found in some ceramic containers at Pueblo Grande (Mitchell 1994a:149) and was linked to ritual practices (Mitchell 1994a:166–167). Similar offerings were found at the Grand Canal Ruins (Kwiatkowski 1989; Mitchell et al. 1989). Ritual objects found at Pueblo Grande included painted wooden sticks or staffs, quartz crystals, bird wings and claws (eagles and ravens), bone tubes, whole *Laevicardium* shells, and concretions. Some *Laevicardium* shells were placed over the pelvic areas of adult males (Mitchell 1994a:150), as at Grasshopper Pueblo. Some, and perhaps all, of these were the same kinds of perforated-shell ornaments thought to signal sodality membership at the latter site (Mitchell 1994a:Figure 4.4).

At Pueblo Grande, ceramic wares were limited, restricted primarily to plain ware and red ware containers. Intriguingly, Roosevelt Red Ware was rare, representing only 11 vessels among more than 1,500 associated with inhumations—2 Tonto Polychrome, 1 Gila/Tonto Polychrome, and 8 Gila Polychrome vessels (Mitchell 1994a:Table 4.1). Wares were distributed differentially among inhumations and cremations (Table 87). Red ware vessels were much less common among cremation burials than inhumation burials, most polychrome was found with inhumations, and buff ware (primarily Casa Grande Red-on-buff) was slightly more common among cremations (see Table 87) (Mitchell 1994a:130). This also was true for Los Muertos, where Red-on-buff was found primarily with cremations and was scarce as an accompaniment with inhumations (Brunson 1989:450), although there were some cremations that had both wares. Haury (1945:43) had acknowledged a similar distribution in his earlier study of the Los Muertos material. Whereas cremations tended to be accompanied by buff ware, and polychrome typically was found with inhumations, a few burials of both types had polychrome as well as buff ware.

Whole and restorable vessels from Pueblo Grande were subjected to an attribute analysis rather than typed, but Walsh-Anduze and Abbott (1994:221) suggested that most red ware vessels in the early component represented Gila Red, and most vessels in the later component were Salt Red. Only two intrusive vessels were found, typed as Kana'a Black-on-white (from an inhumation) and Kiako Black-on-white (from a cremation) (Mitchell 1994a:130). Illustrations (Mitchell et al. 1994) show that jars and pitchers were placed at the head of some burials.

Bioarchaeological Data

Insofar as can be determined, cranial deformation was not observed on the Pueblo Grande burials before they were repatriated (Van Gerven and Sheridan 1994).

Summary

Cremation and inhumation appear to have constituted discrete mortuary programs at Pueblo Grande and other sites in the Salt River Valley. These modes were distinguished by location—cremation cemeteries were located outside of residential compounds—and by some distinctions in accompaniments. These differences probably can be related to ethnic variability and a multicultural, coresident population at sites such as Pueblo Grande and Los Muertos. Little distinguishes the inhumation burials of the Salt River Valley and inhumations of Tonto Basin, Globe Highlands, and Grasshopper Pueblo, however. Burial location, grave type, body position and orientation, body preparation, and accompaniments were much the same. The reuse of grave facilities to bury multiple individuals and the clustering of graves in certain locations also were similar and imply corporate ownership of cemeteries and grave facilities and links to family groups. Some practices were unique to the Salt River Valley, however, such as bird-wing ritual accompaniments, seated burials, and more diverse pigments used to paint bodies and other objects.

Together, this information indicates probable relationships among the populations practicing inhumation burial in Tonto Basin and the Salt River Valley and contrasts with the populations practicing cremation burial. Immigration may be indicated. This is supported by differences observed through time at Pueblo Grande. There was more variability during the early Classic period (Mitchell 1994d:81), suggesting this was a time when people of different social groups established themselves at the settlement.

Table 87. Ceramic Wares in Inhumation and Cremation Burial Contexts at Pueblo Grande

Ware	Inhumations		Cremations		Total
	n	%	n	%	
Red ware	645	40.9	71	16.4	716
Plain ware	871	55.3	336	77.8	1,207
Buff ware	49	3.1	23	5.3	72
Polychrome	11	0.7	2	0.5	13
Total	1,576	100.0	432	100.0	2,008

Inferences from Mortuary Practices

Following the premises outlined at the beginning of this chapter, we believe that mortuary practices reflect ethnicity as an expression of technological style and by representing ideology, cosmology, and worldview. We have summarized the mortuary program found at the CCP sites and compared it to mortuary programs across a sample of sites in Tonto Basin, Globe Highlands, adjacent mountain areas, and the Salt River Valley. These comparisons provided strong evidence for two dichotomous, overarching patterns in mortuary treatment that characterized ancient central Arizona. Each program was distinguished by a technological style and reflected distinctive ideologies and cosmologies. We conclude, therefore, that there were two broad ethnic groups above the level of the local community within which we can define less-broad social identities that may have been at the level of settlement cluster, lineage, or clan. We suspect that the inhumation mortuary program was distributed throughout much, if not all, of central Arizona. Although the sample is limited, some of these patterns may have been established late in pre-Classic times.

In this section, we summarize the mortuary programs and contrast them. We also consider social organization and demography. We conclude with our inferences concerning ethnicity.

Inhumation Burial

The inhumation burial pattern consisted of extended-supine inhumation in simple, rectangular grave pits that often were elaborated with benches or alcoves and were covered with wooden cribbing. The deceased were dressed, painted with pigment, and wrapped in matting or cloth. Ceramic containers, personal ornaments, and a restricted range of utilitarian objects and ritual items accompanied the dead. Orientation was primarily to the east, but variability in this mortuary characteristic by region and site was noted. Limited variation in burial goods, body position and orientation, and grave treatment, when it existed, apparently was based largely on the age and sex of the deceased, individual skills or craftsmanship, and social memberships of the deceased. In the latter, we believe we can see memberships based on kinship or place of origin as well as memberships based on nonkinship factors.

Technological Style

The overarching style of burial throughout central Arizona was inhumation in a pit of varying depth, typically in proportion with the age of the deceased (Whittlesey 1978). This was a labor-intensive method of burying the dead, particularly for adults, under certain soil conditions, and in mountainous areas, where underground burial would be impossible in winter when the ground was frozen and covered with snow. The practice of burying multiple individuals in single family “tombs” may have stemmed, in part, from a desire to reduce the labor and expense required to bury the deceased. Additional grave elaborations added further labor to an already difficult task.

We reconstruct the sequence of events as follows. The construction of Type 4, or unelaborated, simple pits, was relatively straightforward and involved few materials or tools other than the digging stick. By contrast, the elaborated facilities required several different construction steps and a range of materials. The narrow, lower-pit level containing the deceased—the central shaft in CCP Type 2 burials—typically was excavated to a depth and size sufficient to contain the body and accompaniments. Cases of bodies that apparently were squeezed into the pit space and instances of small alcoves at the head and feet to contain accompaniments indicate that the ancient morticians occasionally miscalculated the necessary space and made adjustments. Typically, simple pits and the lower levels of elaborated graves were subrectangular and U-shaped in cross section. Additional labor was necessary to dig alcoves, if these were used. We note that the alcove grave was an accommodation to provide additional space for the body or accompaniments without expanding the entire pit. In some cases, soil conditions may have predicated use of these techniques.

After the body and accompaniments were placed in the pit, the wooden-cribbed coverings were constructed. It is clear from the presence of fine, laminated, waterlain silts in many cribbed graves and evidence of contact between skeletal elements and wood that no soil or other fill was placed between the deceased's body and the cribbing (Berg, Bushèe, et al. 2003:253). The ideological significance of this practice is discussed below. Cribbing represented a small-scale roof similar to the roofs of masonry rooms. The ledges, or benches, found in most cribbed graves were necessary to support the crosswise poles. Although a few instances of poles placed lengthwise, much like the primary beams used in roofs, have been reported (e.g, Loendorf 1996a), the majority of cribbed grave pits lacked them. Considerable effort was required to obtain the poles used in cribbed covers. Most of the wood represented high-altitude species (ponderosa pine, spruce, and fir) acquired from distant areas (Grindell 2005:200), although juniper was used most commonly, and oak was found in some cribbed covers (Bushèe and Berg 2003:112). Smaller poles, matting, grass, adobe, and other closing materials were then used to complete the cribbed roof (Grindell 2005:199). Occasionally, accompaniments were placed on the cribbing or the adjacent ledges.

In a few cases, flat stone slabs were then placed above the cribbing. In addition to examples in the comparative sample discussed here, stone-slab coverings have been reported at the Cline Terrace Mound (Loendorf 1997a, 1998b), Besh-ba-gowah, and Ash Creek (Hohmann, ed. 1985, 1992; Vickery 1939). That gypsum slabs were used to cover graves at Las Tortugas, rather than the more ubiquitous cobbles or sandstone slabs, may suggest selective use of stone resources in mortuary contexts.

Last, the pit above the cribbing or stones was backfilled with redeposited sediment, often containing refuse. The pit representing the upper-grave fill typically was much wider than the lower-level pit containing the body and accompaniments. No doubt this was necessary to accommodate the laborers digging the lower-level grave and constructing the cribbed cover.

Some archaeologists have attempted to correlate grave facility with the status or prestige of the deceased (Hohmann, ed. 1985; Hohmann and Kelley 1988; Loendorf 1998b). We concur with Ravesloot and Regan (2000:75), who concluded that "there is no evidence from either the prehistoric or historic record to support the proposition that bench and cryptlike graves were elaborate tombs constructed only for 'elite' families or socially prominent individuals."

The issue of grave marking remains unresolved. The ownership and reuse of family "tombs" and the orderly, parallel alignment of some graves in the comparative sample imply use of aboveground markers. The superpositioning of many graves and the disturbance and redeposition of earlier remains and accompaniments may indicate that some grave facilities were unmarked, or the markers had been toppled, disintegrated, or simply forgotten. Although the slanted-vertical placement and presumed visibility of some slabs implies they might have served as grave markers (Berg, Bushèe, et al. 2003:253–254), in most cases, the slabs were laid flat and covered by upper-pit fill, and they could not have served this function. If grave markers were used, they must have been made of perishable materials. Together, this information suggests that considerable time often elapsed between episodes of grave use and may imply repeated, seasonal occupation of settlements over time.

Reopening and reuse of mortuary facilities was observed repeatedly in the comparative sample. In part, this practice was related to family ownership of "tombs" and, in part, probably to simple practicality. Given the labor-intensive technological style of these mortuary practices, any opportunity to reduce the necessary labor no doubt would have been welcome. Examples of empty graves were noted in the comparative sample. These may have represented family facilities that were prepared but never used. It is possible that family "tombs" were prepared when residential structures were built. A family could have constructed a mortuary facility to establish claim to a part of the burial ground owned by their extended family, lineage, or clan segment. It would have been practically advantageous to have a facility ready at hand when needed, given the labor required to construct graves and the likely necessity of burying the deceased within a relatively short time. Among many Western Pueblos, the dead are buried almost immediately after death, certainly on the day of death (although the mourning rites themselves require four days) (Parsons 1939:69). Alternatively, the empty graves containing accompaniments may represent original interments from which the skeletal remains were removed and reburied elsewhere.

Loendorf (1998a) has forwarded the interesting possibility that the deceased were not interred immediately but were curated for some time, and groups of individuals subsequently were interred simultaneously upon the death of the most important family or lineage member. In support of this notion, he cites oral histories, limited ethnohistoric information, and archaeological evidence for charnel houses in Tonto Basin. As Loendorf (1998a:343) has acknowledged, this hypothesis is difficult to support empirically. One of the two so-called charnel houses he cites contained the disarticulated remains of a single individual, and the other case appears to represent postdepositional disturbance to earlier interments. Loendorf (1998a:344) explains the lack of further evidence for delayed burial, postmortem handling, and charnel houses in terms of Tonto Basin climate: "Elaborate processes for storing of deceased individuals may not be necessary in Tonto Basin. The generally dry conditions and low humidity in the basin can result in natural mummification. . . Preservation of the body. . . could have been accomplished simply by storing them in a structure."

Although this hypothesis cannot be ruled out, the more parsimonious explanation is that family burial facilities were reopened and reused repeatedly. This is supported by the presence of disturbed and redeposited remains high in the pit fill of undisturbed burials, undisturbed burials located at different vertical levels and separated by considerable fill, and little or no evidence for defleshing, postmortem handling, and curation of remains (see discussion in Berg, Bushèe, et al. 2003). The contrast with facilities that were indisputably used as so-called charnel houses, such as those found at Paquimé, makes this conclusion more certain. Ravesloot (1988:56) has written: "The highest ranking individuals identified at Casas Grandes were interred within two specially prepared burial vaults that were housed within an elaborate mortuary-religious complex. The bodies of these deceased were initially left to decay, after which the disarticulated bones, minus skulls, were placed inside large Ramos Polychrome ceramic vessels."

Ideology and Cosmology

Following Carr's (1994) proposition that mortuary behavior reflects ideology and cosmology as well as social organization, we believe that in the technological style of inhumation we can see reflections of a suite of ideological and cosmological principles. In this section, we borrow heavily from Western Pueblo ethnography for ideological and cosmological analogues, recognizing that this procedure is imperfect.

The most basic ideological principle we can identify is that people of central Arizona employing inhumation burial believed that there was life after death. This concept permeated ethnographically documented Western Pueblo religion. For example, "The most fundamental concept of Hopi religion," Titiev (1992:107) wrote, "is a belief in the continuity of life after death." In concert with this belief, mortuary rites focused on separating the dead from the living and preparing the deceased for the journey to the afterworld (Parsons 1939:74). According to ethnographers, the Pima viewed death as a product of magic influences (Russell 1980:193). The corpse was provisioned with food and water for use in the other world, and stories of ghosts returning to revisit the living (Russell 1980:194–195, 253) testify that the Pima also believed in life after death. We believe we can see these principles reflected in the treatment of the deceased and their accompaniments among people of central Arizona. The predominance of vessels as mortuary offerings suggests that dead were also provisioned with food and water, implying a similar journey, and mortuary treatment was designed to identify the deceased in the afterlife. Several features of mortuary behavior would seem to be indicators of these beliefs, including burial location, orientation, grave facilities, body preparation, and accompaniments.

Burial location appears to have reflected social identity, particularly the kinship affiliation of the deceased. The location of graves within residential compounds was a persistent pattern throughout the comparative sample. We suggest that the social identity of the deceased was based primarily on descent group relationships—most likely, membership in a lineage or clan—and this identity was marked in mortuary ritual so that the dead could take their proper roles in the afterworld. It does not seem coincidental that most burials were placed within residential courtyards and further within the bounded architectural spaces of compounds. The demarcation of burial grounds by walls was repeated consistently in the comparative sample, and burial within bounded spaces clearly appears to have been preferred. Some burials were found outside of courtyards and compounds in unbounded architectural space, however. These people might have been outsiders to the community—newcomers that had not established residence and history—or they might have had lineage or clan affiliation differing from most residents in the community.

The pattern of burial within bounded, architectural space that also was used for residential and domestic purposes represents one of the strongest differences between ethnographically recorded mortuary practices and the ancient mortuary program. Historically, Western Pueblo peoples typically buried their dead in separate cemeteries away from residential communities. These "houses of the dead" were designated by the same term denoting the place of the dead in the afterworld. In some pueblos, the location of cemeteries was dictated by the presence of a church and consecrated burial ground. Regardless, except for the practice of burying infants who had not yet been initiated into the *katsina* cult in occupied rooms, discussed below, the houses of the dead and the living were separated among the Western Pueblos (Eggan 1950; Parsons 1939; Titiev 1992). At Zuni, for example, burials were placed in the refuse mounds outside of the residential roomblocks (Smith et al. 1966). At prehistoric sites in the comparative sample, this was not the case. Instead, the dead were integrated into the daily lives of their relatives both spatially and metaphorically. This pattern may be more similar to Piman practices. The Pima typically burned the house of the deceased, dug a deep shaft for the grave, and placed the burned structural components of the house on top of the grave. It is not clear where the grave was, although they never buried the dead beneath house floors. Also, they rarely practiced cremation (Russell 1980:193–195).

Although most Native Americans have cosmologies linked to vertical and horizontal differentiation of the universe, directional orientation is particularly strong among Puebloan peoples. Parsons (1939:99) wrote that "in ritual and folk tale the Pueblo sense of direction is very conspicuous." The emphasis on the cardinal directions in the inhumation mortuary program is marked. Cemeteries outside of bounded architectural spaces tended to be located on the east side of residential settlements, as at Mazatzal House. Those located within courtyards also were placed toward the east when possible, which is evident at AZ U:8:450/14b. At Las Tortugas, cemeteries outside of bounded space were placed to the north of residential compounds.

Orientation may mirror the place where the dead live and the direction the deceased must travel to reach the land of the dead. The Pima believed that the home of the dead was to the East, although the head of the corpse was usually oriented to the south (Russell 1980:193–194, 252). Among puebloan peoples, the west is often considered the direction where the land of the dead lies (Eggan 1950:58; Tyler 1964:54), but this is not true among all Pueblos. At Isleta and Taos, for example, south is the direction of the dead. Regardless, the deceased typically are placed in the direction he or she is to go; if west is the land of the dead, the deceased would be placed with the head to the east, thus facing the direction of the journey (Parsons 1939:98–99).

In Pueblo cosmology, the land of the dead may be underground or underwater, below the place of emergence (Parsons 1939:217). At death, people return to this place. The *sipapu* is not only the place where humans came forth upon the earth, it also is the entrance to the underworld where the spirits of the dead live (Titiev 1992:134). The practice of inhumation, involving the digging of a deep pit to bury the dead below the ground, clearly links the ideology of ancient people of central Arizona to a similar construct. Graves that may be likened the Classic period slab-covered or wooden-cribbed graves were constructed at Hopi. A house was built for the dead, which in earlier times may have been walled up and timbered over "with as much care as was given a house" (Parsons 1939:70). The house-grave symbolizes the house of Ma'asaw, the deity associated with death. A planting stick was placed over the house of the dead symbolizing a ladder that would allow the spirit to leave the grave. Building a house for the dead also created a shelter for the deceased and prevented the dirt used to backfill the grave from touching the body. The spirit would not be weighted down by soil, but could emerge and rise up the ladder. Conversely, the Pima buried their dead at the bottom of a deep shaft and covered it with wooden billets in order to keep the dead from returning to haunt the living (Russell 1980:193–194).

The inclusion of provisions for the dead with inhumations is strong evidence that people of central Arizona believed the deceased journeyed to the underworld. Ethnographically, food commonly accompanied the deceased (Fewkes 1896:159, 163). At Hopi, two or three rolls of wafer-bread (*piki*), cooked or dried meat, mescal cake, and cornmeal were laid on the deceased's belly as journey food (Parsons 1939:70). A jar of water was placed at the feet (Parsons 1939:72). During the four-day mourning period, the deceased's household observed certain practices that typically included bringing food from family meals to the grave. Food was prepared for the dead to avoid having the spirit linger near the living and cause sickness (Parsons 1939:69). The Pima provided their dead with water and pinole (Russell 1980:194). There can be little doubt that at least some of the ceramic containers interred with central Arizona burials contained food and water. Pollen samples taken from mortuary vessels recovered during the Wheatfields Project yielded high frequencies of cheno-am, cattail, and other aquatic pollen (Berg and Phillips 2003). The vessels may have held seeds, pollen, or water from a spring or other source surrounded by cattails and reeds. Cattail and corn pollen are commonly used for ceremonial purposes (Fish 1998:159; Fish and Gillespie 1987), and springwater is considered particularly powerful and healing (Whittlesey 2003:153).

At Grasshopper Pueblo, a transition in the life cycle was noted at about one year of age. The number of ceramic vessels accompanying deceased children increased dramatically when the age at death was one year or more (Whittlesey 2002:159). This also seems to be the case for many sites in the comparative sample, at which young children had fewer accompaniments. This may indicate that such children had not been initiated into a ceremonial group before their death, or it may simply connote that children less than one year of age had not yet been weaned and therefore did not require provisions for the journey to the underworld (Whittlesey 1989). It is also possible that infants were not considered to be people until they reached a certain age, perhaps because of high infant mortality. In some cultures, a child is not given a name at birth and must wait until he or she has reached a certain age (Wales 1933:448). This was true among the Pima, who waited until a child's first birthday to give it a name. The naming ceremony was followed by gifts of clothing, food, and baskets from the child's godparents (Russell 1980:188). In this case, however, ethnographic accounts seem to reflect some Christian influence.

Ethnographically, body preparation and accompaniments among Western Pueblo peoples reflected the need to identify the deceased in the afterworld and to transform the dead into *katsinam*, or rainmakers. "With few exceptions," Parsons (1939:216) wrote, "life after death is envisaged as the same as before death; the deceased journeys to a town where he joins a group such as he was associated with in life—racers, hunters, curers, dancers, or rain-makers who may be thought of as clouds or lightning." Titiev (1992:107) echoed this, writing that oral histories emphasize that the behavior of the deceased is a replica of life on earth. It was a general Puebloan practice to identify the deceased's memberships in religious groups or leadership of these groups by face paint, certain ornaments, and ceremonial costumes (Bunzel 1932:482; Cushing 1920; Eggan 1950:266; Parsons 1939:70, 72; Smith et al. 1966:254; Stevenson 1915; Tyler 1964:53; White 1942:175, 1962:215). Early ethnographers of the Pima provided little detail about the ornamentation and costumes of the deceased (Russell 1980).

Similar practices evidently ensured that the ancient dead of central Arizona took their proper place in the afterworld and continued the activities they had carried out in life. Red ochre and other pigments were used commonly to paint the faces and bodies of the dead. The fact that pigment was not used universally appears to indicate that painting identified only particular memberships or social identities among burials in the comparative sample.

The nonperishable and perishable objects placed in graves also indicate that the dead were dressed and accompanied by items indicating ritual activities and the tool kits reflecting special skills. Caches and clusters of objects suggest the inclusions of tool kits for flint knapping, basketry, and perhaps lapidary work; medicine bags, shaman's tool kits, and ritual staffs or standards may indicate ritual specialists. In some contexts in the comparative sample, such as Grasshopper Pueblo, objects symbolizing membership in ritual sodalities were interred with the dead. Ornaments may have indicated leadership; turquoise was fastened to the ears of officers at Hopi, for example (Taleyesva 1942; Titiev 1992; Voth 1912). The absence of funerary objects that reflect the everyday, domestic roles of men and women—grinding equipment, multiple-use tools such as hammer stones, flaked stone tools, and so on—indicates that special skills and ceremonial memberships influenced mortuary treatment more than the deceased's gender identity.

During some interments, wood or other organic substances were burned in ceramic plates recycled from other containers, and the plate and contents were buried with the deceased. The ideological significance of this practice and its purpose remains unknown. Among the Western Pueblos, arrowheads and ashes are considered medicine against witchcraft. Graves could be protected by marking around them with an arrow point (Parsons 1939:106); ashes were used in many rituals when protection was needed. The charcoal found in Transition Zone burials may have been the residue of such a protective act. The common presence of single projectile points in the graves of women and children may reflect a similar practice.

There is little to suggest the presence of the *katsina* cult in the comparative sample. In Pueblo cosmology, resurrection of the dead as *katsinam*, rainmaking, and fertility are linked. The cloud people or spirit people, called *katsinam* in Hopi, generally are associated with the dead, and they bring rain, fertility, and good health to the people (Eggan 1950:58; Parsons 1939:171). The cloud people are described as "our ancestors, those who have died." Symbolic objects and ritual acts effected the transformation of the deceased into rainmakers, reflected the importance of farming and fertility, and emphasized cosmological principles and symbolism of breath, clouds, and lightness. The planting stick was placed on Hopi graves to "plant" the deceased for another world. Cotton was placed on the face of the deceased so that he or she would become a cloud—a rainmaker, or *katsina.* Cotton wedding garments, feathers, and other items symbolized the lightness and texture of clouds and assisted the dead on their journey to become *katsinam* (Parsons 1939:92). Spirit exorcism was carried out on the fourth day after death (Parsons 1939:98), and at Keresan towns and Jemez, the curing societies carried out this ritual (Parsons 1939:73). During this rite, the deceased was exhorted: "You are no longer a Hopi, you are a cloud. You must help your people and tell the rain clouds to hasten" (Parsons 1939:171).

The description Parsons gives of a burial at Hopi reveals these practices and beliefs. After washing the body and hair in yucca suds and rubbing the body with cornmeal:

> His father blackened the chin, to represent the clouds, the black clouds of the Nadir. A fillet of pendent prayer-feathers made by kinsmen was put around the head and lay over a cotton mat or mask which covered the face. (Feathers and cotton render the breath-body light for travel.) The dead man's best apparel, his dance kilt, was put on, and a string of beads, all being slashed or impaired. . . . The body was wrapped in a rabbit-skin rug [Parsons 1939:70].

It is intriguing that the two common denominators of Western Pueblo cosmology reflected in mortuary practices—return to the underworld, symbolized by an underground grave pit and a house for the dead, and cloud spirits, symbolized by material culture representing clouds, breath, and lightness—are diametrically opposed. We can see an agricultural metaphor of burying a seed in the ground, which bursts forth to grow and provide nourishment. Although we have evidence for pigment use and painting among central Arizona burials, no evidence has survived of cotton masks, feathers, or cotton garments. The question of *katsina* ceremonialism therefore remains unanswered.

An interesting pattern observed in the comparative sample and apparently common throughout the mountain Transition Zone relates to the secondary treatment of the dead and beliefs concerning death, the dead, and the afterlife. We have seen that the repeated use of the same burial areas and grave facilities, probably by family or other kinship groups who owned burial facilities in common, led to the disturbance and secondary reburial of interments. When older burials were discovered during the process of interring the more recent deceased, the earlier remains were removed and redeposited nearby, without regard to the original placement of the remains or the accompaniments. This practice suggests that the original burial and its accompanying ritual were sufficient to send the deceased to the afterlife in the appropriate manner, and subsequent uncovering of the remains did not require reburial similar to the original. Among the Western Pueblos, the spirits of the dead are believed to remain in the grave for three days and then to rise on the fourth morning and follow the path to the land of the dead (Eggan 1950:58). Because the dead eat only the "odor" or "breath" of food (Titiev 1992:107), we can assume that the ceramic containers holding water and food were used only during the four days before the spirit leaves the grave. On the fourth day, spirit exorcism ensured that the dead would depart. After this was accomplished, the transformation would have been considered complete.

The disturbance of earlier interments has been explained as a lack of grave marking, the use of perishable markers, the fact that grave locations had been forgotten, or their original location was unknown. These are plausible interpretations, and indeed little, if any, evidence of deliberate grave marking has been recovered. In light of the high percentage of disturbed interments throughout central Arizona at many different sites and in multiple contexts, it is more likely that the disturbance and reburial of previous interments was deliberate and a product of the pervasive use of family "tombs."

There is no clear evidence that encounters with the dead or skeletal remains were feared or considered to be polluting, although the casual nature of the redeposited remains and accompaniments—typically piled together not far from the original locale—does imply a certain reluctance to deal with human remains for an extended period or move them far from their original resting place. There also is little evidence to support the idea that prehistoric disturbance means that ancient peoples had a lack of regard for the dead (e.g., Hohmann 1992; Ravesloot 1994). In some cultures, the state of the corpse may be taken as a cultural model of the fate of the soul. For example, the Berewan and other Borneo peoples believe that while the corpse is deteriorating, the deceased's soul wanders and can cause mischief and illness. When the corpse is reduced to strong, dry bones, the soul is thought to become equally strong and can leave the living world to join the society of souls in the afterlife (Huntington and Metcalf 1979, cited in Carr 1994:65). Similar parallels between the corpse and the soul may have characterized the belief systems of central Arizona peoples; the soul's journey having been completed during the original interment, it was unnecessary to repeat the procedure upon subsequent interment. This certainly affirms Carr's (1994:56) hypothesis that the manner in which the body is handled can directly reflect a society's beliefs about the nature of the soul, the afterlife, the soul's journey to the afterlife, and similar concepts of worldview.

A final ideological aspect of inhumation mortuary practices in central Arizona is the color red. Red is prominent in the form of red-slipped ceramic containers (Salado Red, Gila Red, San Carlos Red, other red wares) and the use of red ochre or hematite to cover the bodies of the deceased and accompaniments. Color symbolism is important in Puebloan cosmology. Each direction is associated with colors as well as with living creatures. Color symbolism varies from pueblo to pueblo, but, often, red is associated with the south and white with the east (Parsons 1939:99). Orientation of the dead and color symbolism may have been linked, and this would be a fruitful avenue for future study. At some sites in the comparative sample, red pigment was used primarily with deceased females and was painted on the pelvic area. It may not be too farfetched to associate the symbolism of the color red with fertility. It also is possible that red ochre was used to ensure a successful delivery. The high mortality rate among women of childbearing age and the presence of fetal remains in situ among the skeletal remains of female burials in the region indicate the extraordinary dangers of childbirth in societies without benefit of modern medical care (Whittlesey 1999, 2002). It should be noted, however, that a high mortality rate among women of childbearing age was not reported for the CCP. Many of the women were over 40 years old, which was presumably beyond childbearing age.

Cremation Burial

Technological Style

Cremation was a less labor-intensive technological style than inhumation. It was not necessary to dig a large pit for burial, and although wood may have been difficult to obtain in a fuel-scarce desert environment, it was the only required expense in labor and materials. Typically, the deceased and accompaniments were cremated in an area designated for that purpose. Traditionally, it has been assumed that the deceased were dressed and adorned with ornaments, and other accompaniments were placed on the platform with the deceased and burned along with the body. Burned basketry and macrobotanical remains with some cremations (Mitchell et al. 1994:148) may indicate offerings, coverings, or matting. Primary cremations were then buried in place, in the shallow pit used for burning. In secondary cremations, the remains were collected and reburied in a cemetery that usually was adjacent to, and presumably the corporate property of, a residential group (e.g., Haury 1932, 1976; McGuire 1987; Mitchell et al. 1989; Saul 1988). In some cases, the remains were buried in a shallow pit; in others, the remains were placed in a ceramic container and buried in a pit sufficiently large to contain the vessel.

Primary and secondary cremations were found at sites in the comparative sample. At Pueblo Grande, cremation trenches were shallow, oval to subrectangular, and had a basin-shaped cross section (Mitchell et al. 1994:143). There was little evidence of intensive burning, and Mitchell et al. (1994:144) noted that the primary cremations at Pueblo Grande differ from primary cremations at other Hohokam sites. Trench cremations had a limited spatial distribution (Mitchell et al. 1994:146–147), and most of these cremations did not show any evidence of in situ burning, such as oxidation, charcoal or ash. Mitchell et al. concluded that the general lack of burning "seems counterintuitive to inferring their function as crematory facilities. Nonetheless, it is possible that . . . [these features] were primary processing facilities for burning the body and that some of the trenches were then used as the receptacles for the cremated remains" (Mitchell et al. 1994:145). Secondary cremations of the pit and urn types were found at Meddler Point, although the former were more numerous, and we do not know where the crematoria at this site were located. It has been suggested that the lack of burning in primary cremation pits was a product of raising the body and accompaniments on a platform (Mitchell et al. 1994:145–146).

In urn secondary cremations, the cremated remains and ashes were placed inside a ceramic container, typically a jar or other restricted-aperture vessel, and then covered with one or more ceramic containers, usually bowls. At Pueblo Grande, some cremations consisted of remains that were placed directly in a shallow pit and then covered with inverted ceramic bowls or baskets (Mitchell et al. 1994:152–153). Additional ceramic containers and other objects were then placed over or within the pit in primary and secondary cremations. Invariably, these objects were broken or burned, or both.

A distinctive aspect of the cremation mortuary style that differs strongly from inhumation burial is the possible postmortem handling of remains. Typically, the amount of incinerated bone is small, and the mixing of remains from several individuals has been noted (McGuire 1987). The mixture of different kinds of cremations at some sites also may imply postmortem manipulation (Mitchell et al. 1994:146). At Pueblo Grande, there was one instance of several individuals buried in a single feature. Haury (1945:45) reported three such cases at Los Muertos. Swartz et al. (1995:210–211) wrote that the secondary cremations from Meddler Point varied greatly in the amount of incinerated bone, but all were well below the weight Binford (1972) estimated would represent the remains of an adult male. Although low bone weight, small bone fragments, and uniformly high incineration could be attributed to a hot and efficient cremation fire and stirring or crushing the remains, partitioning of the body prior to cremation also could account for these patterns (Swartz et al. 1995:210–211). If that was the case, the Hohokam mortuary ritual may have been carried out in steps over a long time, contrasted with the apparent rapid interment of the deceased in the inhumation mortuary style. Despite Loendorf's (1998a) hypothesis of delayed burial and containment in charnel houses, there is no good evidence that human remains were manipulated or curated before inhumation.

Ideology and Cosmology

Contrasts with cosmology and ideology as reflected in inhumation burial are striking. Preucel (1996:125) and Whittlesey (2004) have suggested that the Hohokam cosmology was predicated on a general Mesoamerican worldview. Themes of rebirth and resurrection, transformation and renewal, sacrifice, and purification permeated this ideology. As an agricultural people with a long history of cultivation and plant domestication, cults devoted to the deities of wind, rain, and other natural forces were vital aspects of religious beliefs and practices. Most relevant to our discussion here is the Mesoamerican cult of the dead and ancestor veneration. This cult was integrated with notions of power and fertility (McAnany 1994; Pohl 1983; Schaafsma 1999:184). The ancestors were incorporated into the world of the living by placing the dead in residential contexts—at shrines, under house floors, and within funerary pyramids built in cities (McAnany 1994).

In accord with this cult, mortuary practices were designed to transform the deceased into ancestors. Protracted burial rites, often involving the exhumation and curation of body parts, and elaborate, postmortem handling of the dead were the means by which this was accomplished (McAnany 1994:11). These procedures included display of skeletal parts and ashes, bone bundles curated as important symbols of group identity (Carmack 1981; Coe 1956; Tozzer 1941), and successive refurbishing of the household compounds in which the dead were interred, often over several generations.

Ideological principles included fire as a cleansing destroyer that swept away impurities in the living and the dead, the concept of sacrifice as a means of achieving cosmic balance and harmony, and ceremonial purification (Miller and Taube 1993). Bloodletting and the color red played important roles in the rituals. Séjourné (1976:101, 108) and Markman and Markman (1992:197–197) have suggested that the dead were cremated as a final rite of purification to liberate the soul and prepare it for rebirth. In the Quetzalcoatl story, he was transformed into a god through self-sacrifice by cremation, burial underground, and rebirth (Sahagún 1946; Séjourné 1976). In another story, Quetzalcoatl brought the remains of humans who had lived in previous worlds to his consort, who ground the bones and ashes and put them into a vase. Quetzalcoatl's blood poured on the remains resurrected the dead (Delhalle and Luykx 1986).

Parallels with these concepts and principles can be seen in Hohokam mortuary practices (Whittlesey 2004:518–523). Cremation of the dead, their belongings, and perhaps their houses (as suggested by Huntington [1986]) represented purification and transformation by fire, designed to resurrect the dead in the afterlife as in the Quetzalcoatl legend. Broken and burned objects accompanying cremations and the use of red pigment may have substituted for the more violent sacrifices seen among Mesoamerican peoples. The small amounts of cremated bone, the mixing of different individuals in cremations (Haury 1976), and the presence of different cremation styles may indicate the postcremation reworking of human remains characteristic of the protracted rituals in ancestor veneration (Whittlesey 2004). Mitchell et al. (1994:146) suggested that "particular mortuary features may represent different stages of processing in the burial program (Brown 1981)."

Fire also was employed in magical performances that may have been carried out during mortuary rites. Censers and palettes were used together to burn mineral substances, the ultimate goal perhaps being to create colors with symbolic meaning (Haury 1976:288–289; Hawley 1965). Mitchell et al. (1994:148) noted that the light, superficial burning seen in Classic period cremations might be related to burial or postburial ceremonialism.

Contrasts with beliefs and concepts associated with inhumation burial are marked. Instead of linking the dead to the underworld through underground burial, provisioning the dead for a journey, and emphasizing air, breath, and lightness in mortuary rituals and accompaniments, as did Western Pueblo peoples, the Hohokam liberated the souls of their dead and resurrected them through fire (see Whittlesey 2004:518–523). The immediate act of cremation can be construed to imply there was no journey to the afterworld, as does the absence of food and water offerings with most Hohokam burials. No obvious directional symbolism can be seen among Hohokam cremations, unlike the clear orientation of inhumation cemeteries and individual burials. This may imply that there was no "land of the dead," as we have inferred for the people of central Arizona practicing inhumation.

The Hohokam mortuary complex apparently combined ancestor veneration with persistent Mesoamerican themes of purification and transformation. Although in central Arizona, both inhumation and cremation burial associated the deceased with social groups, there are differences. The inhumation mode often placed the dead within residential areas and clearly demarcated cemeteries with architectural walls. At Hohokam sites, cemeteries typically were set apart from, but adjacent to, residential areas. There was no bounding of cemeteries by walls or fences and no physical association of the dead with house clusters. In addition, there were no family burial "tombs" that were periodically reopened and reused. The ideology accompanying both inhumation and cremation connected the dead with the living, but this was accomplished in very different ways.

Social Organization and Demography

Based on the comparisons discussed in this chapter, we suggest that there existed a pattern of corporate ownership of burial grounds and family ownership of grave facilities among communities practicing inhumation. Cemeteries or burial groups were associated with residential areas, and we infer that some burial locales were owned by families, lineage segments, or clans. Courtyard walls bounded burial areas as well as residential areas. There evidently was a patterned recognition of social groups probably based on kinship, and we assume that social identity largely was based on kinship affiliation. During the Miami and Roosevelt phases, burial evidently was a private rite carried out by family members.

In addition to repeated, sequential interments and the use of certain facilities for multiple interments, bioarchaeological data confirm these inferences. Close family relationships appear to have characterized the individuals interred in corporate cemeteries and in multiple-use burial facilities, which is not surprising given the isolated nature of these small, rural settlements. Regan et al. (1996:807) identified six individuals from Schoolhouse Point Mound with developmental abnormalities of the foot. Four of the six individuals were interred in the same burial facility, suggesting that these particular individuals had a close genetic relationship. At the Vegas Ruin, several developmental anomalies also indicated familial ties (see Volume 2, Chapter 8). As previously mentioned, there were three possible cases of Klippel-Feil syndrome, which is congenital fusion of cervical vertebrae 2 and 3 that occurs in utero (Barnes 1994; Ortner and Putschar 1985). These cases were distributed among Group 1 (Feature 101), Group 3 (Feature 182), and Group 5 (Feature 33). Two cases of vastus notch, a small notch of the upper lateral border of the patellae (Finnegan and Faust 1974), were observed. This anomaly also has been observed among the TCAP burials (Minturn 2001:319). Last, there were two instances of pedal symphalangism, a congenital defect of the intermediate and distal phalanges of the toes caused by the failure of cartilaginous separation in utero (Case and Heilman 2004). The two individuals with this defect (Features 108 and 144) were found in the same burial group (Group 4).

Several demographic patterns are unusual and imply that the mortuary population was not a representative reflection of the population as a whole. Most striking are the unusually high numbers of burials compared to the number of residential structures and the high percentage of adult burials at some sites. The low population estimate calculated from household size compared to the large burial population observed at the Vegas Ruin, discussed above, is repeated throughout Tonto Basin at the larger sites (Doyel and Hoffman 2003c; Hohmann, ed. 1985; Minturn 2001:313). The burial population far exceeds the population that could have lived at these settlements at any one time. Explanations for these discrepancies include sampling biases, the possibility that certain settlements represented "persistent places" (Schlanger 1992) to which people returned periodically to bury the dead, and disease.

Sampling certainly affected the burial populations to some degree. Few sites have been excavated completely, and the excavated sample rarely included the entire occupied area. This was a particular problem at the CCP sites. At the TCAP sites, however, many sites were sampled intensively, and some Wheatfields Project sites were excavated completely. Regarding persistent places, we would expect that only certain sites in a region would evolve into sacred places to which people returned for rituals and to bury the deceased. This is not the case for the sites compared here, most of which displayed discrepancies between residential structures and burials. Although few diseases were evident in the skeletal remains, the incidence of nutritional stress indicators suggests that the Tonto Basin populations were relatively healthy (Minturn 2001:323). We are left with the conclusion that in the burial populations of Tonto Basin sites and those in adjacent areas, we are seeing the result of either long-term, year-round habitation or repeated, periodic occupation (Ravesloot and Regan 2000). The absence of architectural, stratigraphic, and chronometric evidence for the former implies that the latter is a more plausible hypothesis.

Similar discrepancies can be seen in the proportions of subadults and adults. There was considerable variability in these proportions, and at some sites, they were skewed greatly. At the Vegas Ruin, only 24 percent of the remains were subadults (see Volume 2, Chapter 8). Minturn (2001:313) observed that 34 percent of the burial population from the TCAP sites represented subadults (birth to 12 years of age). At Las Tortugas, the proportion of subadults varied by locus; it was 27.1 percent at Locus 1 and 50 percent for Locus 2. Among all the Wheatfields sites, the proportion of subadults (fetal through age 14.9) was 39.7 percent (Hurlbut 2003:Table 10). Turner et al. (1994a) reported that 27.7 percent of individuals from the Livingston group sites (RPM) were under the age of 10.

Although most of these percentages fall within the range for prehistoric populations (30–50 percent subadults; Howells 1960; Weiss 1973), they contrast strongly with higher proportions of subadults at Grasshopper Pueblo and Classic period sites in the Phoenix Basin. Minturn (2001:317) reported that 47.4 percent of individuals from early Classic period contexts at Pueblo Grande were subadults, and 51.0 percent from late Classic period contexts were subadults. At Grasshopper, subadults (less than 15 years in age) represented 65.7 percent of the entire sample, including disturbed and disarticulated burials. Given the practice of intramural burial of children at these sites, the proportions of subadults actually may be more representative than elsewhere. When combined with an extraordinary degree of infant mortality and a short life expectancy (Minturn 2001:Table 2.11), the high percentages of subadults does not seem remarkable.

Minturn and Heilman (see Volume 2, Chapter 8) suggested several possible explanations for the unusually low percentage of subadults observed at some sites: (1) subadults were buried in areas other than those excavated; (2) fewer subadults were found, because their bones decompose more rapidly and more intensively than adult bones; (3) subadults have greater life expectancy; and (4) there were sampling biases (the small number of subadults is an artifact of sample size). Whereas all of these factors may have contributed to some degree, the first explanation is most likely. The shift to intramural burial of subadults is one of the most marked changes in mortuary behavior between the early and late Classic periods. This leaves us to wonder where the majority of subadults were being buried at the Miami and Roosevelt phase settlements of Tonto Basin with mortuary populations primarily consisting of adults. Again, a considerable degree of mobility and periodic, seasonal reoccupation of sites is indicated.

Ethnicity, Mobility, and Migration

In this section, we turn to the original question that spurred comparisons between mortuary practices observed at the CCP sites and those seen elsewhere in Tonto Basin and adjacent areas spanning the transition between the Middle and Classic periods: who were the people of Tonto Basin? We summarize our observations and inferences in attempting to answer this question. Although definitive answers remain elusive, we can draw certain conclusions. Two contemporary mortuary programs indicate two populations maintaining an ethnic identity above the level of the community, perhaps at the tribal, language, or more general levels. Within both programs, differences suggest additional distinctions in social identity at lower levels, perhaps in accord with place of origin or clan. Several lines of evidence point toward mobility among the population practicing inhumation burial. Although multiculturalism characterized the Transition Zone throughout its history, there is evidence for immigration beginning in the Miami phase, if not earlier. Last, there is evidence that ethnogenesis was the end result of these processes, resulting in the development of a distinctive Western Pueblo identity. These conclusions are supported by bioarchaeological data. We consider each of these inferences in turn.

Ethnic Identity

We have defined two overarching mortuary programs and accompanying suites of ideological and cosmological principles: inhumation burial and cremation burial. By far, the former was most common, suggesting that the population practicing inhumation burial was much larger (Ravesloot and Regan 2000:73). Whereas cremation burial was the most common mortuary style in pre-Classic times in Tonto Basin, it appeared at only a few sites dating to the Classic period, primarily those with platform mounds (Loendorf 1996a). Dual mortuary programs also were found in Classic period sites of the Salt River Valley, where the proportion of inhumation burials also greatly exceeded the number of cremations.

The great degree of uniformity within both programs is noteworthy and indicates close relationships among the populations practicing each mortuary style, regardless of geographic location. The Salado of the Upper Tonto Basin, Lower Tonto Basin, and the Globe Highlands; the Mogollon Pueblo people who lived alongside Anasazi and other, unknown social groups at Grasshopper Pueblo;

and most of the population living at Classic period sites of the Salt River Valley shared the overarching, inhumation mortuary style. The population of this large region of central Arizona possessed, recognized, and identified in their mortuary practices clear concepts of ethnic identity. Although we must be cautious in extending ethnographic analogy into prehistory, comparisons with ethnographically described Western Pueblos indicate considerably commonality with the Salado and Mogollon Pueblo in mortuary technology and inferred cosmology and ideology, a conclusion also reached by Berg, Bushèe, et al. (2003:259).

This identity can be recognized first in the Miami phase, although aspects of late pre-Classic period burial treatment indicate that the roots of ethnic identity may have been in place earlier. The technological style of inhumation and the ideological concepts of extended-supine inhumation and eastern orientation were clearly in place during the Sedentary period in Tonto Basin, where they contrasted with the cremation technological style and ideology practiced at other settlements.

It is intriguing that the normative inhumation pattern found throughout the Transition Zone does not depend upon a specific suite of ceramic wares, although several scholars have forwarded this idea (e.g., Crown 1994). For example, Wood and McAllister (1982:91) wrote that Roosevelt Red Ware was extremely popular "as burial furniture in a widespread mortuary complex." Ciolek-Torrello (1987c:368) concluded that "in many areas peripheral to the Salado heartland, the Salado presence may represent in part the spread of a cultural horizon expressed in a form reminiscent of a mortuary cult rather than an actual Salado presence." As the comparisons presented in this chapter have indicated, however, Roosevelt Red Ware was not distributed uniformly among Roosevelt phase burials, and indeed, was rare in most contexts. Only at Grasshopper Pueblo was Roosevelt Red Ware (Pinto Polychrome and Pinto-Gila Polychrome in particular) a strong component of the mortuary ceramic assemblage. Whereas in part this may reflect the temporal placement of Tonto Basin sites in the comparative sample—Pinto Polychrome postdates A.D. 1280—the rarity of Roosevelt Red Ware at fourteenth-century sites indicates that time is not a completely satisfactory explanation. Gila and Tonto Polychrome were extremely rare at late Classic period Hohokam sites in the Salt River Valley, and the dearth of this ware at Paquimé, often considered to be the source, is particularly noteworthy. None of the excavated burials at Casas Grandes contained Gila Polychrome vessels (Ravesloot 1988:Table 5.1). Whereas the inhumation mortuary program described in this chapter may have represented a kind of cult, it was not defined by Roosevelt Red Ware (Whittlesey and Reid 2001).

By contrast, unpainted red ware does appear to be a strong component of the puebloan mortuary ritual and ideological complex described here. Whether it was Gila Red, Salado Red, or other types, textured and smoothed red-slipped ware, often smudged, was common in the comparative sample, and at many sites, including the CCP sites, often it was the most frequent mortuary ware. A connection to the Mogollon ceramics is apparent. Despite the pervasive tendency of many archaeologists to equate red ware with the Hohokam (e.g., Wood and McAllister 1982), red-slipped brown wares were a strong component of the Mogollon ceramic assemblage beginning around A.D. 600 and remained so throughout the sequence (Haury 1936; Reid 1989; Wheat 1955; Whittlesey 1998).

Social Identity

Moerman (1965) and others have stressed that people's self-definitions of social identity are nested and fluid. We believe we can see social identity operating at lower levels than that of ethnic identity. Within both overarching mortuary patterns, there are relatively minor distinctions that may reflect social identity commensurate on the level of lineage, clan, village, settlement cluster, dialect group, or place of origin. Variability in grave facilities and orientation appears throughout Tonto Basin and adjacent regions. Some graves were elaborated with cribbing or stone slabs and others were not; some individuals were interred with the head to a direction other than east. Moreover, there was a correlation with body position and grave facility at some sites, such as Grasshopper Pueblo and Pueblo Grande.

The fact that certain grave types and orientations tended to segregate according to site, and at the larger sites, often were clustered spatially, suggests that family groups of differing social identities practiced familiar ways of treating their dead that differed only slightly from the normative pattern. These groups may have belonged to different clans or lineages, or they may have come from different places. As seen most clearly at Las Tortugas, these family groups occupied architecturally bounded residential courtyards that also served as cemeteries. This appears to support the "we" vs. "they" dichotomy that characterizes distinctions in social identity (Eriksen 1992).

Similar variability in mortuary treatment can be seen among the ethnographically described pueblos. Certain villages have particular notions of where the land of the dead lies, for example, therefore dictating burial orientation. Grave facilities also varied from pueblo to pueblo. According to Parsons (1939:70–71), First Mesa graves were pits covered with wooden cribbing, whereas Third Mesa graves were simple pits that were filled and covered with rocks. These variations in mortuary practices may indicate, as Duff (2002), Bernardini (2005), and Ferguson (2004) have suggested, that Western Pueblo identity was perceived primarily at the clan rather than community or broader levels.

Duff (2002:182) has argued that Western Pueblo populations were characterized by a variety of distinct ritual programs. The variability in mortuary style we describe here may reflect such ritual programs as a part of social identity. Diversity in ritual knowledge and ceremonies was an advantage in the context of population movement and aggregation. Duff has observed that in historical times, groups wishing to join an existing pueblo were required to contribute a particular ceremony for admittance (Eggan 1950:98; Schlegel 1992; Whiteley 1986).

Mobility

The comparisons presented here suggest the possibility of periodic movement, or mobility, as well as migration among people of central Arizona. Although the repeated reuse of single mortuary facilities gives the impression of sedentism, the discrepancy between settlement populations as estimated from household size and the burial population contravenes this impression of sedentism and suggests some degree of mobility. Although a number of factors may have influenced these unusual distributions, we think it most likely that people returned to abandoned settlements to bury their dead. The small size of many settlements like those found during the CCP, TCAP, Mazatzal Piedmont, and Wheatfields projects suggests that the large burial populations found at some of these sites did not result from internal population growth. We do not mean to imply that this pattern reflects long-distance migration. Rather, it indicates a pattern of short-term sedentism in which populations shifted settlements locations frequently, but returned to ancestral settlements to bury their dead.

Although it is not a popular notion with most archaeologists, population movement, often over considerable distances, characterized central Arizona over much of prehistory and was a notable feature of the late thirteenth century (Reid and Whittlesey 1999). For example, the Cholla Project, a large transmission-line project spanning most of the state of Arizona and crossing the Transition Zone through the Globe Highlands, found evidence that multicultural populations used the region as a sort of joint-use area (Reid 1982). Such movement brought groups of different identities together and facilitated the immigration of small groups into regions such as Tonto Basin.

Scholars are beginning to recognize that population movement is more than migration. For example, Redman (1993:171) wrote that “mobility must be seen as a basic process of Southwestern existence.” C. Cameron (1995:112) concurred, observing that “movement of communities within a region, even when such movements have a lengthy periodicity, can be expected to be a normal part of a regional environmental adaptation that involves adjustment of a group’s home range.”

Duff (2002:188) has contributed a similar point of view to our understanding of Western Pueblo social identity. By regularly entertaining visitors from other areas and traveling to other places, communities in areas of low population density, established social networks that fostered the transformation of social structure, ritual practices, and the redefinition of group identities. In short, it was the regular interaction among widely dispersed populations over decades, if not centuries, that resulted eventually in the development of discrete ethnic identity among ancient Western Pueblo peoples.

Immigration

Various lines of evidence suggest immigration of different peoples into Tonto Basin and coresidence of these groups. Like mobility, immigration and coresidence of multicultural populations took a backseat to other questions of prehistory during the processual-archaeology years, but both are returning as processes of interest to contemporary scholars (C. Cameron 1995; Clark 2001; Ezzo and Price 2002; Lyons 2003; Madsen and Rhode 1994; Redman 1993). Coresidence of Anasazi and Mogollon populations in the Transition Zone has long been recognized at places such as the Forestdale Valley and Point of Pines (Haury 1958, 1989; Reid 1989). Building on this foundation, archaeologists working at the University of Arizona Field School at Grasshopper investigated processes of immigration and coresidence throughout the school’s 30-year history (Reid and Whittlesey 2005). By the late 1970s, researchers had accepted the migration model as the most parsimonious account of growth at Grasshopper Pueblo and in the region (Graves et al. 1982; Longacre 1975).

The rapid appearance of the inhumation mortuary program in Tonto Basin is perhaps the strongest piece of evidence for immigration of new populations into the region. We have seen that this mortuary style was established in the Miami phase, although there is evidence that at least some residents of Tonto Basin practiced inhumation during the Sedentary period. In the Miami phase, burial in a simple, unelaborated pit was the normative inhumation style. The practice of constructing a house for the dead with a wooden-cribbed covering appears to date to the beginning of the Roosevelt phase, and it may signal the immigration of family groups into the region who brought with them a new mortuary style and ideology. We note that the log-cribbed grave facility was used at settlements other than those discussed here, including Kinishba (Cummings 1940) and Rye Creek Ruin (Haury 1930).

The inhumation style not only was introduced abruptly, it was associated with increased immigration. The issues of population dynamics and demography have yet to be resolved completely, and controversy remains, but most archaeologists accept an increase in Tonto Basin population during the Miami and Roosevelt phases (Doelle 2000). Doelle (2000:105) concluded that to achieve the estimated population size, low levels of immigration would have been necessary.

We know, however, that the Tonto Basin population was culturally mixed during the Sedentary period. People practiced both the cremation and inhumation mortuary styles, and within the cremation program, there were minor variations evocative of cultural distinctions. In addition, individuals with lambdoidal cranial deformation and without evidence for artificial cranial deformation were found among the inhumation burials (discussed further below). This suggests that immigration of Colorado Plateau populations may have begun in the pre-Classic period.

Cranial deformation provides evidence for multicultural populations. Child-care practices represent one of Bourdieu's *habitus* characteristics that signify social identity; the tradition of swaddling infants in cradleboards, the form of cradleboards, and the materials used to make them differ from group to group and are learned within the family setting (Piper 2002). Two types of cranial deformation resulting from cradleboard use are found in the Southwest. Vertical-occipital deformation is flattening of the lower parts of the occipital bone (Reed 1981; Stewart 1973). Occipital deformation is common throughout the Southwest and was most likely the unintentional result of swaddling infants to hard cradle boards. This type of deformation has long been thought to characterize Mogollon populations (Reed 1948; Reid 1989) and is found in Salado, Sinagua, and Classic period Hohokam populations (Bennett 1973; Fink 1989; Reed 1949; Regan et al. 1996; Reid 1989). Piper (2002:61) (see also Dennis and Dennis 1940) has suggested that this type of deformation resulted from an infant lying in one position on its back most of the day—that is, in a cradleboard placed in a flat position. Recent studies, however, suggest that occipital flattening may be attributable to premature suture closer—a genetic syndrome—rather than cultural practices (see Volume 2, Chapter 8; Danforth et al. 1994:97).

Lambdoidal flattening has been considered to be an intentional modification most commonly found in Puebloan crania of the San Juan Anasazi (Ancestral Pueblo) and upper Rio Grande areas (Minturn 2001; Reed 1949; Regan et al. 1996; Stewart 1937, 1940). Lambdoidal deformation is flattening of the skull higher on the occipital bone, in conjunction with the parietal bones. Piper (2002:63) believes that this kind of deformation resulted from use of a hard pillow or headboard, positioning of the cradle, or both (Reid and Whittlesey 1999:101). Piper (2002:67) concluded that "function, not form, caused the patterning of artificial cranial deformation."

In addition to these types of cranial deformation, some populations in the ancient Southwest evidently had no tradition of cradleboard use, and their skulls lacked deformation. We know of no region or culture particularly associated with the absence of cradleboard deformation, although we note that a significant number of the burials from Point of Pines Pueblo exhibited undeformed crania (Bennett 1973). Ezzo (1993:52) linked the absence of cradleboarding with desert populations.

Inhumation burials in the comparative sample displayed both types of artificial cranial deformation (vertical-occipital and lambdoidal), and a small number of burials had undeformed skulls, suggesting the presence of three populations with different traditions of child care and cradleboard use. As the comparisons demonstrate, vertical-occipital cranial deformation was most common in Tonto Basin and adjacent areas (Minturn 2001:Table 2.23). The percentages varied by site according to the number of individuals with sufficiently complete skulls to permit observations to be made, but all or most individuals at most sites exhibited this kind of cranial deformation.

A small number of individuals displayed lambdoidal deformation. Three individuals with lambdoidal deformation were recovered during the TCAP (Minturn 2001:326, Table 2.22), and one dated to the Sedentary period. During later times, deceased individuals with lambdoidal cranial deformation were buried much the same as those with occipital deformation. Feature 139 from Tres Huerfanos was buried in a pit with a bench and a deep alcove but no cribbing. The pit also was capped by rocks. The association between lambdoidal deformation and alcove graves also was found at Grasshopper Pueblo. The male individual, whose age was given variously as 35–49 and 45–50, was buried in an extended position with the head to the southeast and accompanied by four vessels (Salado Red and other red ware). The burial could date to the Miami phase (Hall et al. 2001:251–251). Feature 177 at Granary Row was a female aged either 13–19 or 16–19 years and buried in an extended position with the head oriented to the east. The simple pit was not elaborated. The only accompaniment was a string of steatite beads around the right wrist (Hall et al. 2001:299–300). This burial probably dated to the Roosevelt phase. The small number of individuals displaying this trait in such large burial populations indicates the number of Anasazi (or Ancestral Pueblo) immigrants into Tonto Basin was quite small. It is possible that Puebloan cultural practices could have been brought into Tonto Basin by Mogollon immigrants, who were indistinguishable from the Tonto Basin population.

Burials at Grasshopper Pueblo with lambdoidal deformation also were treated in the same way as the deceased of the local population. Accompaniments tended to be more elaborate and numerous, however, suggesting that these individuals may have enjoyed somewhat greater wealth or prestige.

A single individual without cranial deformation was found during TCAP (Minturn 2001:Table 2.23). This burial was dated to the Sedentary period (Minturn 2001:327; Vint et al. 2000:334). The burial (Feature 25 from Tres Huerfanos) was one of the few indisputable cases of violent death in Tonto Basin. Several projectile points were found in the chest and abdominal areas of the body, suggesting they were the cause of death. Body position and pit characteristics implied that interment was hasty (Vint et al. 2000:344). Burials lacking cranial deformation at Grasshopper Pueblo were not treated so violently. Their graves were much the same as those of the other dead, although somewhat less elaborate.

The obvious concern among Transition Zone peoples with identifying their dead and associating the deceased with residential groups may reflect immigration. Both immigrants and indigenous populations may have sought to distinguish themselves and establish separate identities. Founding cemeteries and building family tombs was an additional means of claiming land and strengthening ties to it.

That immigration and mixing of populations was not always peaceful, however, is indicated by evidence for trauma and violence. In addition to the instance of violent death discussed above, evidence for conflict was found at the Grapevine Springs South site, a Roosevelt phase site (Shelley and Ciolek-Torrello 1994; Turner and Turner 1998:292–293). Several bodies were found unburied and sprawled on burned room floors; one individual, a 30–50-year-old male, had a perimortem skull fracture. The incidence of trauma was also comparatively high among the CCP individuals from the Vegas Ruin—14 percent if one individual with a possible fracture is included, compared to 8 percent for the TCAP burials (see Volume 2, Chapter 8). Observing that the healed fractures were seen in older male individuals, Minturn and Heilman (see Volume 2, Chapter 8) suggested that violence may have been responsible. No direct evidence of violence-related trauma was found during the RPM, and Turner (1998) believed this was surprising.

Finally, we can see abrupt changes in mortuary practices, ideology, social organization, and demography during the Gila phase at Grasshopper, some sites in Tonto Basin, and in the Phoenix Basin that apparently were established in part by immigration and were occupied by culturally mixed groups. The development of large, aggregated settlements consisting of different cultural and ethnic groups fostered a shift in mortuary practices and other aspects of ceremonial life. Sodalities developed, and burial of adult males shifted to public locales where the rites presumably were conducted by non-family members. By contrast, women and children lacking memberships in ceremonial societies continued to be buried by family members, and the practice of intramural subadult burial developed (Whittlesey et al. 2000).

The shift to intramural burial of subadults also may signal changes in ideology and cosmology. Among Western Pueblo peoples, only people who had been initiated into the *katsina* cult were able to make the journey to the land of the dead. Therefore, uninitiated infants were buried below room floors so their spirits would return to the mother in the form of her next baby (Beaglehole and Beaglehole 1935; Eggan 1950; Parsons 1939; Voth 1912). This is one of the tantalizing clues suggesting that *katsina* ceremonialism developed in east-central Arizona after A.D. 1300. It is striking that these developments were taking place at the same time that platform-mound ceremonialism was declining in Tonto Basin, although in the Phoenix Basin and elsewhere in southern Arizona, it continued to develop. It has long been thought that such religious-ritual systems served as appealing integrative mechanisms among populations experiencing economic, climatic, and social stresses (Whittlesey and Ciolek-Torrello 1992; Whittlesey et al. 2000). The co-occurrence of inhumation burials and small numbers of cremation burials at platform-mound sites in Tonto Basin is evocative of such mixed populations.

Ethnogenesis

We noted at the beginning of this chapter that social and economic conditions in central Arizona during the thirteenth century would have been conducive to the emergence of new ethnic identities. Whereas we cannot state for certain that ethnogenesis took place there around A.D. 1300, it would not be far fetched to suggest that the people who ultimately became part of Hopi and Zuni culture began to develop unique identities at that time. Duff (2002:182) has suggested that "incorporation of immigrant groups from the Upper Little Colorado, Arizona Mountains, and Silver Creek regions into the large communities at Hopi and Zuni might have occurred over several years, as segments of the smaller communities left their villages to join other communities, probably those with whom they had developed relationships over lifetimes."

Further, Duff (2002:184) has suggested that the Hopi gained the *katsina* cult by adopting people from the regions where *katsina* concepts developed—the upper Little Colorado region, the mountains of central Arizona, and the transitional areas adjacent to the Mogollon Rim. In essence, it was immigration that brought about the ideology and ritual performances so critical to the self-identity of contemporary Western Pueblo peoples.

Oral histories are in accord with these notions. Migration of clans, the incorporation of immigrant clans into Hopi, and the ranking tied to the arrival order of clans are central to contemporary Hopi social order (Bernardini 2005; Fewkes 1900; James 1974; Whiteley 1988). Zuni oral history locates the emergence place to the west, across a river, and Tedlock (1994:164) has observed an "ideological seriation" of *katsina* concepts that runs from west to east, which may mirror the cult's development. This suggests to Duff (2002:186–187) that archaeologically identified populations crossed the Little Colorado River to join people living at Zuni, and there was a strong link between populations of the upper Little Colorado River region and Zuni.

Bioarchaeological Data

Bioarchaeologists have been following the ephemeral trail of cultural and genetic affinity through the mountains and deserts of Arizona for several years by means of comparative dental morphology. Establishing cultural affinity through bioarchaeological studies was an important component of the RPM research design (Redman et al. 1992). Affinity analyses have provided contradictory results suggesting that analytic results are skewed readily by sample size and failure to control for multiple ethnic groups among single populations. Initial assessments of affinity (Turner and Irish 1987; Regan et al. 1996) concluded that the Classic period Hohokam of the Grand Canal and Casa Buena sites were dentally more like the Mogollon of Grasshopper Pueblo than the pre-Classic Hohokam of La Ciudad. Analyses of some RPM skeletal samples revealed similar affinities. The Schoolhouse Point burials and the Cline Terrace burials were more similar in dental traits to the Mogollon of Grasshopper Pueblo than to the Hohokam (Regan and Turner 1997:664; Regan et al. 1996:825). In fact, Regan et al. (1996:829) believed they had found a "biological smoking gun" pointing to the Salado as the population who migrated into the Phoenix area. In the RPM synthesis, however, the physical anthropologists pooled all the samples and essentially reversed their conclusions (Turner 1998:160–161). Because the "Hohokam" samples included the Classic period populations that have dubious affinity to the pre-Classic peoples, these conclusions are not troubling.

The most recent analysis of dental traits yielded results that are consistent with the inferences made here on the basis of mortuary practices. Lincoln-Babb analyzed 19 traits among 11 groups, including the TCAP, RPM, and CCP samples (see Volume 2). The CCP group proved more closely related to the Pueblo IV populations of Grasshopper and Point of Pines Pueblos than to the other groups and least similar to Sinagua and Anasazi groups. The TCAP Salado were related to the Mogollon Pueblo populations even more closely. By contrast, the RPM samples clustered more closely with the Classic period Hohokam samples. The Grasshopper, Point of Pines, and pooled Hohokam samples reflect mixed populations, however, and future affinity studies on the basis of dental traits would do well to sort the cases by inferred cultural affiliation.

The presence of possible Mesoamerican dental modification among some Tonto Basin inhumations (Lincoln-Babb 2001; Regan et al. 1996) and the cases of seated-flexed burials found at Pueblo Grande (Mitchell et al. 1994) add to a suite of architectural traits with connections to Chihuahua. These include T-shaped doorways, wicker or *jacal* granaries with cobble bases, pillars, and of course, platform mounds. Whether these individuals represent people who actually originated from homes somewhere in what is today Mexico or simply emulated the dental modifications may be immaterial; clearly, there were wide-ranging contacts among peoples of Tonto Basin and other regions (Ravesloot and Regan 2000:72). The close relationships of dental traits among Tonto Basin, Mimbres, and northern Mexican populations observed in previous studies of dental affinity (Ravesloot and Regan 2000:72) may have a genetic basis.

Lincoln-Babb concluded that "considerable genetic heterogeneity existed in the early Classic period populations living in Tonto Basin" (see Volume 2, p. 319). It appears that Tonto Basin may indeed have been a 'melting pot' where groups from a wide geographic area came together." This conclusion reaffirmed a previous inference that "Tonto Basin was a corridor of sorts for human migration and gene flow" (Regan et al. 1996:829).

Concluding Thoughts

This study has shown the importance of mortuary practices to reconstructing ancient life and the ability of mortuary behavior to answer questions about ethnicity and social organization. Because mortuary practices represent both technological style and congruent systems of ideology and cosmology, we believe that the treatment of the dead is more useful in reconstructing identity than aspects of material culture, such as ceramics. We have demonstrated that beginning in the A.D. 1200s or perhaps earlier, the majority of people living in Tonto Basin and adjacent regions participated in an overarching practice of inhumation burial that represented ethnic identity above the level of the community. This mortuary practice differed strongly from the cremation practice that preceded it. We conclude that this practice was brought to Tonto Basin by immigrants from more northern parts of ancient Arizona. Ethnographic comparisons indicate marked parallels in technological style and associated ideology among the Western Pueblo practices.

This population satisfies several of Barth's (1969) criteria for identifying ethnicity (see discussion in Duff [2002:188]). The people clearly constituted a self-sustaining population, as indicated by the long-term and periodic reuse of settlements resulting in large mortuary populations. They definitely communicated and interacted with one another, and they shared economic and social relationships with peoples living in distant regions, as indicated by intrusive ceramics. They probably also shared the same values, if the ideological constructs visible in mortuary practices reflected other shared cultural values. We cannot be certain, but it seems likely that they may have considered themselves distinct from others. Certainly, this is indicated by the clear spatial segregation of inhumation and cremation cemeteries at settlements where both burial styles were practiced.

We have also shown that Tonto Basin and adjacent parts of central Arizona were occupied by people of mixed social identities. A small contingent of people continued to practice cremation burial and probably represented the remnants of Hohokam populations, who had settled earlier in the basin. Variability in the inhumation burial style indicates social identity on a level finer than that of ethnic group, perhaps that of lineage, clan, place of origin, or dialect group. Conditioned by long-term population movement across the Transition Zone for religious, social, and economic reasons, many of these people settled permanently together at the same settlements. Although cooperating in many aspects of life, they retained certain distinctive practices that were reflected in mortuary behavior as well as other aspects of daily life, such as architecture and child-rearing practices. At least some of the people sharing the mortuary technological style also moved to the Phoenix Basin, where they may have settled alongside Hohokam, and even some Yuman populations, at settlements such as Los Muertos and Pueblo Grande, as originally suggested by archaeologists of Gila Pueblo Archaeological Foundation. These instances give us cause to consider Bernardini's (2005:166) caution that "regions, settlement clusters, and even individual villages are now seen to have been composed of diverse and distinct social groups, each of which pursued a unique migration pathway, chosen independently of its neighbors."

Finally, we believe we can see the processes that led to the emergence of the historically described Hopi and Zuni peoples operating in Tonto Basin and adjacent regions. Continuing the movement that had characterized earlier generations, many of these puebloan peoples immigrated to large, aggregated settlements below the Mogollon Rim, such as Grasshopper Pueblo, bringing with them distinctive ritual programs. In such contexts, the *katsina* cult and its ceremonial associations emerged.

The importance of archaeological studies in tracing processes of ethnogenesis, immigration, population movement, and aggregation is evident. As Jones (1997:1) concluded, "The role of archaeology in the construction and legitimization of collective cultural identities is coming to be perceived as one of the most important issues in archaeological theory and practice." Archaeologists must take a new approach to studying issues of ethnic identity, however. Bernardini exhorted his colleagues:

> We must replace a synchronic approach to identity, which compares arrangements of culture areas across space at different slices of time, with a diachronic approach that traces identity in small social groups through time. Rather than minimizing variability by lumping populations into broad culture areas, it is the variability itself that is significant and deserving of study. For some important questions, large populations can be properly understood only in terms of their component smaller groups [Bernardini 2005:167].

In studying ethnic identity in the archaeological record, we can make a real contribution toward understanding the histories of the ancient peoples of Arizona. This chapter represents a small step toward the comparative framework, the broad perspective, and the appropriate methods necessary to achieve this end.

CHAPTER 8

Summary and Conclusions

Richard Ciolek-Torello and Eric Eugene Klucas

The CCP involved data recovery investigations at nine small prehistoric sites dating from the Sedentary to the early Classic period and five segments of FH 9 (the historical-period Globe-Payson Highway) and associated structural features. These investigations where directed toward the major portions of two small late Sedentary to early Classic period hamlets, a Sedentary period farmstead, a Sedentary period food-processing locale that was an outlier of a larger hamlet, a peripheral Sedentary period component of a much larger multicomponent settlement, an early Classic period field house, and three low-density artifact scatters. In total, 8 pit houses, 9 cobble-adobe-foundation structures, 46 human burials, and scores of extramural food-processing and storage features were investigated at these nine sites.

FH 9 was a vital lifeline to what had been the almost inaccessible Tonto Basin and surrounding region and was the first route to open the Payson and Mogollon Rim areas to traffic from the south. The road carried passengers, freight, and mail and was used by wagons and, later, automobiles. During the late nineteenth century, the road opened Tonto Basin and the Payson areas to ranching and settlement and connected residents of these areas to markets for their products and to cities where they could purchase manufactured goods. The road also played an important role in opening up Tonto Basin, the Sierra Ancha, Payson, and Mogollon Rim areas to recreational activities. It was continually used and updated until 1960, when it was realigned and renamed SR 188.

The five segments of FH 9 identified within the project ROW included two segments that may have been in use at least as early as 1907, when the road followed the course of Gold Creek to Hardt Creek and may have continued in use until the construction of SR 188. Two other segments were constructed by 1919, when the road veered away from the mouth of Gold Creek and headed eastward around Tonto Hill and then south. The fifth road segment at the southern end of the project area connected to the Tonto Hill road segments. The associated features included three bridges that were most likely built between 1941 and 1957, although they may have replaced earlier bridges. The rest of the features consisted of roadcuts and rock retaining walls. No deposits of historical-period refuse were found in association with these segments.

The importance of the CCP, however, far exceeds this small collection of prehistoric and historical-period archaeological sites. The CCP is one of the last links in a series of recent ADOT-sponsored projects that have provided an almost continuous transect of the prehistory of Tonto Basin and neighboring areas, and the remainder of this chapter focuses on the prehistory of the project area and its place in the larger regional context. This transect runs along SR 88, SR 188, and SR 87 from the city of Globe in the Pinal Mountains, through the various subdivisions of Tonto Basin, to the city of Payson below the Mogollon Rim. A second transect along SR 87 traverses the western flanks of the Mazatzal Mountains from the city of Mesa to where it meets SR 188 in the Upper Tonto Basin (see Figure 1). The archaeological research that resulted from these projects, together with more-widespread investigations around Theodore Roosevelt Lake sponsored by Reclamation and large-scale surveys sponsored by TNF, has made Tonto Basin one of the best-known archaeological regions in the Southwest. This situation is a radical departure from that of only 30 years ago, when the region was poorly documented and there was much disagreement among archaeologists regarding chronology, cultural affiliations, and other important aspects of the region's prehistory.

Thus, the importance of CCP lies in the opportunity it presents for synthesizing the vast body of recently collected data. We recognize, however, that such a synthesis is not realistic within the scope of the CCP. Nevertheless, the CCP does present an opportunity to synthesize important aspects of Tonto Basin prehistory, particularly those that pertain to CCP sites and the boundary area between the Upper and Lower Tonto Basin. Our initial research design (see Chapter 1) addressed a wide range of research issues in the prehistory of Tonto Basin. Once we learned, however, that the vast majority of features found in the CCP dated to a narrow temporal period—the transition between the pre-Classic and early Classic period—this period became the focus of our research efforts. This transition represents a critical time in the prehistory of Tonto Basin, when settlement patterns, architectural and ceramic styles, and mortuary treatments changed dramatically. Population increase and the dispersion of settlements throughout every corner of the basin were equally dramatic (Clark and Vint 2004; Doelle 2000:Figure 4.2; Elson et al. 2000). This period was also characterized by an important transformation in the direction of regional interaction. Hohokam cultural influences, interaction, and even immigration from the Phoenix Basin were dominant during the pre-Classic period, although this influence and degree of interaction varied in different parts of Tonto Basin (Clark and Vint 2004). By the early Classic period, Hohokam interaction decreased markedly and Western Pueblo influences became important, although the degree of this interaction also was highly variable from area to area within Tonto Basin (Clark and Vint 2004). Anasazi immigrants from the Colorado Plateau (Dean 2000:13) or unidentified immigrant groups from the north and east of Tonto Basin (Clark and Vint 2004; Elson et al. 2000) also may have had an important impact on Classic period developments in Tonto Basin, although Wood (2000, 2005) minimized the significance of such immigration in the Classic period. Many of these patterns have long been recognized since to the inception of archaeological research in the region. Nevertheless, until recently, there was insufficient data to describe these changes accurately or to evaluate the cultural and environmental forces behind these changes.

It is within this framework that we conducted the CCP analyses, placing the nine project sites in a regional context to understand better the major research issues of chronology, subsistence and settlement patterns, demography, and exchange, trade, and commerce. In this final chapter, we summarize our findings and make our final statements concerning these research issues.

Chronological Issues

According to Dean (2000:4–8), a major accomplishment of the Roosevelt Archaeology Project was the adoption of a standard chronology and phase system for Tonto Basin following a meeting of the Roosevelt Research Teams (of which SRI was a member) at Arizona State University in January 1994. Nevertheless, Ciolek-Torrello, Whittlesey, and Deaver (1994:597) argued in their review of the state of the Tonto Basin chronology that some of the basic elements and many of the details of Tonto Basin culture history and chronology still remained to be worked out. Although they recognized that a solid and broad outline of cultural development in Tonto Basin existed as presented in the Roosevelt Chronology, the temporal framework for this sequence was poorly supported by chronometric data. Like the contemporary Hohokam chronology, the Tonto Basin chronology was dependent to an enormous extent on cross-dated ceramics and a small number of low-precision absolute dates (see Dean 1991). In the few cases for which radiocarbon dates were available (Ciolek-Torrello 1987b; Hohmann, ed. 1985; Lindauer 1991), good dating contexts were often not found, and it was often unclear whether the date obtained actually related to the context being dated. The result was often poor and ambiguous dates (see Elson 1992c).

To avoid these problems in the Rye Creek Project (Elson 1992c), DAI eschewed radiocarbon dating entirely and depended on archaeomagnetic dating, which was not complicated by many of these contextual issues. This dating method, however, also suffers from a number of inherent problems. One of the most notable is that the secular variation exhibited by the movement of the paleomagnetic pole position reverses direction upon itself from time to time. Thus, the regional master curve used to measure individual archaeomagnetic-pole positions overlaps at certain times, which results in multiple or ambiguous calendric dates. This problem occurs at the time of the Sedentary to Classic period transition, usually resulting either in the assignment of both Sedentary and Classic period dates to a particular feature, or a date that spans most of the 300 or 400 years encompassed by these two periods. This imprecision and ambiguity has been a particular problem in Elson's (1992c) assessment of Tonto Basin chronology; in several cases, he assigned Sedentary dates to features with obvious Classic period ceramic and architectural associations.

Whereas the contextual problems associated with radiocarbon dating can only be resolved by finding datable materials in better contexts, the problems with the existing archaeomagnetic dates can be resolved in two ways. As Deaver and Lengyel (see Chapter 3) point out, much of the ambiguity and muddling of archaeomagnetically determined calendrical dates can be resolved by analyzing pre-Classic and Classic period data sets independently. In addition, the calendrical dates assigned to archaeomagnetic samples are interpretations based on a variety of statistical methods and master curves. Thus, published dates are often not directly comparable and are affected by the weaknesses (portions of the curves for which there are few dates) inherent in each of the master curves. Deaver (1988, 1998) (see also Deaver and Whittlesey 2004) has pioneered a method of temporal interpretation that is independent of any particular master curve. This method focuses on the inherent temporal value of each archaeomagnetic sample and interprets the sample's relative age, as opposed to its absolute calendrical age, within a framework of archaeological knowledge, such as the feature's stratigraphic, ceramic, or other cultural associations. Although this method does not provide absolute dates, all samples can be compared to each other, and it is often possible to interpret samples that are ambiguous or undatable because of weaknesses in the master curve. Essentially, it is this method that Deaver and Lengyel use in their reassessment of the Tonto Basin phase system presented in Chapter 3.

In addition to problems with absolute dates, Ciolek-Torrello, Whittlesey, and Deaver (1994:598) noted several additional areas of the Tonto Basin phase system that needed clarification. First, the Tonto Basin phase sequence was based—and still is—largely on the Phoenix Basin Hohokam phase system. They were concerned that the parallels between these two sequences were neither temporally, materially, nor organizationally coterminous. As Deaver and Lengyel point out in Chapter 3, this problem remains a concern. The Hohokam had an undeniably important influence on Tonto Basin, particularly during the pre-Classic period; yet, beginning in the Classic period or perhaps as early as the Sedentary period, the culture history of Tonto Basin followed a somewhat different trajectory, and the two regions experienced differences in settlement patterns, patterns of interregional interaction, and material culture during the Classic period, although it is important to recognize that Hohokam influence in Tonto Basin continued to be important, as reflected by the construction of platform mound communities in the Roosevelt phase. The differences are best reflected in the ceramic assemblages. For example, the early Classic period in the Phoenix Basin is associated with Casa Grande Red-on-buff ceramics, whereas the early Classic period in Tonto Basin is characterized by red wares, corrugated wares, white wares, and Pinto Polychrome. As Whittlesey and Reid (1982) noted previously, buff ware is relatively sparse in Tonto Basin, in comparison to the Phoenix Basin. Indeed, Elson et al. (1992) have suggested that it diminished by the beginning of the Sacaton phase and disappeared almost entirely before the end of this phase. By contrast, Sacaton Red-on-buff is probably the most abundant Phoenix Basin buff ware. Textured wares, such as Tonto Corrugated and Salado Red, Cibola White Ware, and White Mountain Red Ware are important components of Classic period Tonto Basin ceramics but are extremely rare in the Phoenix Basin.

Second, there are also important organizational differences between the two areas. Despite their varying degrees of participation in the pre-Classic period Hohokam regional system, the residents of Tonto Basin were never full-fledged participants, as indicated by the absence of ball courts (Ciolek-Torrello 1998; Wood 2000:119), although Wood (2005) also insisted that the absence of ball courts in Tonto Basin is a reflection of incomplete investigation and inundation of the most likely sites. Furthermore, few large villages were established in Tonto Basin until the middle of the Classic period (Clark and Vint 2004) (although once again, Wood [2005] has argued that they have not been recognized), whereas they were present throughout much of the Hohokam region by the Colonial period, or even earlier. Given the distance between the two regions and the material and organizational differences, coincidence between the timing of major cultural events is not likely. For example, although platform mound communities similar to contemporaneous communities in the Phoenix Basin were built throughout Tonto Basin during the Roosevelt phase, they arrived later and have a different history of development. Platform mounds originated in the beginning of the Classic period in the Phoenix Basin, a time equivalent to the Miami phase, and were built primarily as ceremonial structures with limited evidence for residential use. As indicated above, platform mounds were not introduced in Tonto Basin until the late Roosevelt phase (or Pinto phase [see Wood 2005]) and were built as residential structures for presumably elite members of the community. This alternative function emulated late Classic period platform mounds in the Phoenix Basin. Furthermore, some of the Tonto Basin platform mounds were not purpose built but represented modifications of preexisting structures by filling in older residential structures (Clark and Vint 2004; Whittlesey and Ciolek-Torrello 1992).

Third, as discussed in Chapter 3, the Tonto Basin phases, as traditionally defined, are based on a limited number of decorated pottery types rather than a complete constellation of material and organizational criteria. The Classic period is particularly problematic, as the phases are distinguished by the presence of two types of Roosevelt Red Ware, Pinto Polychrome and Gila Polychrome, that remain insecurely dated and are known to vary contextually as well as temporally. The role of Roosevelt Red Ware vessels as mortuary accompaniments also has been well documented (Ciolek-Torrello 1987c; Whittlesey 1978; Whittlesey and Reid 1982). For this reason, Roosevelt Red Ware may not be abundant at small, seasonally occupied and short-term settlements, which are not likely to produce or use decorated pottery of any kind in abundance (Whittlesey and Reid 1982). Because of these various reasons, we maintain that the current Tonto Basin phase system, particularly for the Classic period, does not adequately account for the temporal variation that can be described at present.

Elson (1996) published a revised chronology for Tonto Basin based on the results of the 1994 meeting of members of the Reclamation's Roosevelt Research Team, which consisted of leaders of the RPM, RCD, and RRSS research teams; peer reviewers; and Reclamation and TNF archaeologists. This chronology involved the insertion of three major time periods into the previously accepted chronology. The first was an Early Formative period component identified as the Early Ceramic period, which was placed between A.D. 100 and 600 or 700. The second addition to the chronology was the division of the Sedentary period into a Sacaton phase (A.D. 950–1025 or 1075) and a later Ash Creek phase (from A.D. 1025 or 1075 to A.D. 1150).

These were followed by a revised Miami phase placed between A.D. 1150 and 1250 or 1270. In his original definition of the Miami phase, Doyel (1978) envisioned it as a brief transitional phase bridging the gap between the Hohokam-influenced culture of the pre-Classic period and the Classic period Salado culture. In the revised chronology, the Miami phase was seen as the initial, pre-aggregation, pre-polychrome phase of the Classic period, whereas the Ash Creek phase represented the termination of the pre-Classic period, as indicated by the disappearance of Hohokam Buff Ware ceramics and the appearance of transitional architectural forms. The revised chronology also involved a shortening of the Roosevelt phase to A.D. 1250 or 1270–1320 or 1350 and extending the later Gila phase from A.D. 1320 or 1350 to 1450. In this chronology, the Roosevelt phase was considered as the first phase of aggregation in Tonto Basin, represented by platform mounds and large compounds and distinguished by early polychrome ceramics. By contrast, the Gila phase was considered the final phase of aggregation, which involved the replacement of platform mounds and compounds with a smaller number of nucleated puebloan-like settlements. The Gila phase also was distinguished by later polychrome ceramics and small numbers of Yellow Ware ceramics.

Wood (2005) subsequently outlined an alternative sequence for the Classic period phase system that was not tied to the two poorly dated Roosevelt Red Ware types but to major cultural events and changes in settlement systems. He divided the Classic period into three periods and five phases (see Figure 12). The Early Classic period includes the Hardt/Miami and Roosevelt phases. His view of the Miami phase as representing the emergence of the Salado tradition and heavy borrowing of cultural patterns from contemporary Classic period Hohokam, remain unchanged from Doyel's (1978) original conception, whereas the Hardt phase represents a version represented in the Upper Tonto Basin. Wood characterized the Roosevelt phase by both rapid change and population growth as well as the adoption of a distinctive suite of architectural, settlement, and ceramic patterns. Although these patterns closely resemble those of Classic period Hohokam, there are some notable differences that we have come to recognize as identifying the Salado tradition. The presence of distinctive compound architecture, a ceramic inventory that lacked a local decorated tradition but included imported Western Pueblo ceramics, and the most widespread distribution of settlement in riverine and upland areas. Wood distinguished the late Roosevelt phase by the beginning of the abandonment of marginal upland areas and the inception of large, hierarchically arranged compound settlements (see also Wood 1985, 1989, 1992).

Wood (2005:68–69) distinguished a Middle Classic period represented by the Pinto phase, which corresponds with the early Gila phase in Elson's chronology. The Pinto phase is characterized by the complete abandonment of upland areas and surrounding areas, such as the Payson Basin, and the resettlement of these people as immigrants in riverine communities. This phase is further distinguished by the founding of platform mounds and development of a competitively spaced, multiple-compound community pattern extending from one end of Tonto Basin to the other and "coincidentally, perhaps" (Wood:2005:68–69), it also saw the introduction of Pinto Polychrome.

In Wood's (2005) phase system, the Late Classic period is divided into the Gila and Tonto phases. The Gila phase is characterized by a continual process of reorganizing the complex settlement system through further aggregation of population into large aggregated settlements, which Wood (2000) termed "caserones," and the abandonment of most platform mounds, although elsewhere Wood (2000:114) argued that most platform mounds continued to be occupied well into the late Classic period. Wood (2005) also placed the abandonment of large portions of the riverine zone and most of the remaining upland areas in this time period. Finally, he associated this phase with the introduction of Gila Polychrome. Wood (2005) also resurrected the concept of the Tonto phase to account for the final Classic period phase, which was characterized by the consolidation of the platform-mound organizational system into three geographic units, each associated with a single platform mound, although in some cases, the platform mound was incorporated into a caseron-type structure. Wood's (2005) revised phase system has much merit, particularly as it involves important settlement and sociopolitical developments and avoids dependence on the insecurely dated Roosevelt Red Ware types in the Classic period. The system however, almost completely abandons ceramic indicators, limiting its application to contexts with high-precision absolute dates, which are notoriously lacking in Tonto Basin.

In their synthesis of archaeomagnetic dates from all the recent Tonto Basin projects, Deaver and Lengyel (see Chapter 3) argue for an even more streamlined chronology that consists of essentially only three periods—the Early, Middle, and Late Formative. Whereas the Early Formative period corresponds with Elson's (1996) Early Ceramic period in the revised Tonto Basin chronology, Deaver and Lengyel's Middle Formative period combines the late Pioneer, Colonial, and Sedentary periods. Their Late Formative period encompasses the entire Classic period. Deaver and Lengyel do not explicitly reject the use of the Colonial and Sedentary period divisions of the Middle Formative period, but they find no chronometric evidence to support the subdivision of the Sedentary period into Sacaton and Ash Creek phases. They also found little support for the expected differences in architecture and ceramics between the early and late part of the eleventh century. By contrast, they find strong chronometric evidence to support the Miami phase, as envisioned in Elson's and Wood's revised chronologies—the earliest phase of the Classic period and initial development of what came to be regarded as the Salado culture. However, they also emphasize that the Miami phase represents the earliest phase lacking Hohokam architectural and ceramic associations and the resurgence of indigenous cultural developments. They concluded that the transition between Hohokam and post-Hohokam influence in Tonto Basin occurred around A.D. 1100 or 1150, not in the eleventh century, as suggested by the Ash Creek phase.

In addition, Deaver and Lengyel found many errors in the classification of Sedentary period assemblages. That is, dates for the Ash Creek phase assemblages are coterminous with many Sacaton phase assemblages. They suggest that errors in classifying Sedentary period assemblages can be greatly reduced simply by eliminating the Ash Creek phase concept entirely.

Lengyel and Deaver also address the chronology of the later phases of the Classic period. Surprisingly, they also find many errors in the assignment of archaeological assemblages to the Roosevelt phase, as they encounter dates that run the gamut of the Classic period. These errors are surprising, because Roosevelt phase sites and assemblages are probably the most commonly investigated sites in Tonto Basin. Lengyel and Deaver tentatively concluded that the division between the Roosevelt and Gila phases should also be discarded, although they do not entirely reject the possibility of subdividing the later part of the Classic period. This solution is not as successful as their solution for the Sedentary period errors. The situation with Roosevelt phase assemblages is not nearly as clear cut. Dates for Roosevelt phase assemblages overlap earlier Miami phase assemblages and later Gila phase assemblages, and, in contrast to their Sacaton–Ash Creek discussion, Lengyel and Deaver argue that Miami phase assemblages are chronologically and compositionally distinct from the later Classic period.

The major problem appears to lie in inconsistent application of defining criteria for the various phases of the Classic period by different researchers. Part of this inconsistency is because the Miami phase was not generally accepted as a legitimate chronological construct until after the 1994 Reclamation meeting (see Ciolek-Torrello 1987b; Whittlesey and Reid 1982). Prior to that time, almost all early Classic period assemblages were classified as Roosevelt phase in age. For example, Ciolek-Torrello (1987a) recognized that several small Mazatzal Piedmont settlements he investigated were earlier and lacked the decorated ceramics generally associated with the Roosevelt phase. The assemblages from these small sites, however, did not meet the criteria of the Miami phase, as originally defined by Doyel (1978); thus, he classified them as Roosevelt phase. Following the revisions to the Miami phase agreed upon in the 1994 Reclamation meeting and outlined in Elson's (1996) revised chronology, these settlements would clearly be classified as Miami phase in age and composition. Until recently, there were also very few unambiguously dated Miami phase contexts. As a result, despite the acceptance of the Miami phase after 1994, there was little consensus concerning what distinguished the Miami and Roosevelt phase assemblages found in smaller sites. Similar problems plague the definition of the boundary between the Roosevelt and Gila phases. This fuzziness in phase boundaries is reflected in the 20- to 30-year overlaps between the different Classic period phases in Elson's chronology.

As Lengyel and Deaver's study clearly revealed, well-dated Miami phase contexts are no longer a rarity. Their study also synthesized the defining architectural and ceramic characteristics of the Miami phase. Better-dated contexts and clearer defining criteria also made it possible to be much less inclusive and more consistent in the classification of Roosevelt phase assemblages. The error measured by Lengyel and Deaver in Roosevelt phase assemblage classifications would be greatly reduced if the assemblages were reclassified according to consistent criteria.

In contrast to the Roosevelt phase, the plethora of archaeology in the last two decades has not resulted in the collection of a large body of archaeomagnetic dates from Gila phase assemblages. The paucity of unambiguously dated Gila phase assemblages continues to make it difficult to gain consensus on the distinguishing attributes of the Roosevelt and Gila phase assemblages. For example, the date for the introduction of Gila Polychrome into Tonto Basin has never been unambiguously defined. In the RRSS, Ciolek-Torrello, Whittlesey, and Deaver (1994) resorted to tree-ring dates from the Chodistaas and Grasshopper sites to pinpoint the introduction of the different Roosevelt Red Ware ceramics. However, this approach does not really resolve the issue, given possible delays in the transmission of ceramic types from region to region. This problem is compounded by the fact that Gila Polychrome's significance is also questioned. Long considered the hallmark of the Gila phase, Wood (2005) suggested that Gila Polychrome was not introduced until the what is considered the middle of the Gila phase in Elson's sequence, whereas others have suggested that early varieties of Gila Polychrome were introduced in the later part of the Roosevelt phase (Whittlesey 1994). With such inconsistencies in accepted definitions for different assemblages, the errors discovered by Lengyel and Deaver in the classification of Roosevelt phase assemblages are not surprising.

In conclusion, Lengyel and Deaver address problems in the Tonto Basin chronology using a large collection of archaeomagnetic samples from 15 recent projects. They present a strong argument for eliminating the subdivision of the Sedentary period into Sacaton and Ash Creek phases. Their desire to emphasize differences between events in the Phoenix and Tonto Basins, however, could be met by replacing the Sacaton phase with the Ash Creek phase. In this sequence, the Ash Creek phase is temporally equivalent to the Sacaton phase in the Hohokam chronology but reflects the distinctive characteristics of Tonto Basin settlements during this time period. Lengyel and Deaver also find strong support for the Miami phase as the first phase of the Classic period. Finally, they discover many errors in the classification of Roosevelt phase assemblages and few unambiguous dates from purported Gila phase contexts. Thus, more research—and the collection of more thirteenth-century dates—is required to clarify the chronology of the Classic period.

Dating Cottonwood Creek Project Sites

During the course of archaeological investigations of the CCP sites, it became obvious that the majority of the excavated features spanned the transition between the pre-Classic and Classic periods. Given the ambiguities in the definition and dating of the Sedentary and early Classic periods at the outset of this project, we were unsure how to classify these features and their assemblages. Were Ash Creek phase features and assemblages present? Were they Miami phase or Roosevelt phase? Although Lengyel and Deaver's synthesis has important theoretical implications for regionwide studies, they also have the more practical advantage of assisting in the classification of our project sites. In this section, we synthesize the various chronological data—absolute dates, stratigraphic relationships, ceramics, and architectural styles (Table 88)—to address the project chronology.

The Ceramic Evidence

Ceramics provide the primary data set for temporal placement of the CCP sites, because diagnostic ceramics were recovered from most of the sites and features, whereas chronometric dates were obtained from a much smaller set of sites and features. Two major periods of occupation are represented at the CCP sites, with relatively little temporal overlap between these occupations at individual sites. The earlier occupation occurred in the late Colonial and Sedentary periods and is represented at four sites: the Rock Jaw site (AZ U:3:407/2014), AZ O:15:41/583, AZ U:3:406/2013, and AZ U:3:408/2015. The later occupation occurred in the Miami and Roosevelt phases and is represented by the Vegas Ruin (AZ U:3:405/2012), the Crane site (AZ U:3:410/2017), and AZ U:3:404/2011. Site 406/2013, a small, low-density artifact scatter, is the only site that may have been used in the pre-Classic and Classic periods. Site 408/2015, a really extensive site, also contained several spatially discrete Classic period components. These, however, were located well outside of the project ROW and were not investigated. The remaining two prehistoric sites, AZ O:15:103/2061 and AZ U:3:409/2016, contained too few ceramics—four and seven artifacts, respectively—for any kind of age assessment.

Pre-Classic Period Occupation

Using generally accepted date ranges for decorated ceramics, Heckman (see Chapter 2) dates the Rock Jaw site between A.D. 1050 and 1175. Heckman arrives at this date range based on the midpoints for the date ranges of small numbers of Little Colorado and Tusayan White Ware ceramic artifacts with an overall date range of A.D. 1050–1250 and Hohokam Buff Ware ceramics with a combined date range between A.D. 850 and 1150 (see Table 8). Decorated ceramics from the site includes additional indeterminate Little Colorado and Tusayan White Ware and indeterminate Hohokam Buff Ware sherds, which probably also date to this time range (see Volume 2, Table 9). A much larger number of Wingfield Plain sherds, a diagnostic of the Sedentary period in the Phoenix Basin, provides further support for a primarily pre-Classic period occupation at this site. Also present are a few indeterminate Cibola White Ware sherds and other indeterminate white ware sherds that could date to either the pre-Classic or early Classic periods. The Classic period is represented by a single Salado Red Corrugated sherd and red ware sherds with smudged interiors. The relatively small number of Classic period sherds is consistent with Heckman's end date of A.D. 1175 and suggests that the site was abandoned early in the Classic period.

Heckman places the occupation of Sites 41/583 and 408/2015 between A.D. 975 and 1100. Heckman's temporal placement of Site 41/583 is based on the presence of a few Tusayan White Ware sherds dated between A.D. 950 and 1180 and Hohokam Buff Ware sherds dated between A.D. 850 and 1150 (see Table 6). In addition to these sherds with well-defined date ranges, a few indeterminate Cibola White Ware sherds, a single Lino Gray sherd, a larger number of indeterminate white ware and buff ware sherds, and Wingfield Plain sherds support the conclusion that Site 41/583 dated primarily to the pre-Classic period. This is not surprising, given the location of this site about 100 m east of the Ushklish Ruin. On the other hand, the presence of two Salado Red Corrugated sherds and several other red wares with smudged interiors indicates a Classic period overlay. Hoffman (1991) noted the presence of a smaller Classic period occupation at the Ushklish Ruin, and a large early Classic period hamlet is located on the far side of the hill that overlooks Site 41/583. Heckman places Site 408/2015 in this temporal range based on two Little Colorado White Ware sherds dated between A.D. 1050 and 1250, a single Red Mesa Black-on-white (A.D. 950–1100) sherd, Kana'a Black-on-white (A.D. 850–1050) sherds, Deadman's Black-on-red (A.D. 800–1000) sherds, and a number of Hohokam Buff Ware sherds (dated between A.D. 850 and 1150) (see Table 7). Further support for this temporal placement is provided by several indeterminate Tusayan White Ware sherds, an indeterminate San Juan Red Ware sherd, and indeterminate Hohokam Buff Ware and Wingfield Plain sherds. The paucity of Classic period white wares in the CCP area suggests that the small number of indeterminate Cibola White Ware and other indeterminate black-on-white sherds also represent coeval ceramics. A stronger Classic period presence is indicated by the presence

Table 88. Chronometric Data from the Cottonwood Creek Project Sites

Feature No.	Feature Type	Context	Date	Type	Ceramic Age[a]	Comments
			41/583			
1	*horno*		1010–1315	archaeomagnetic[b]	975–1100	
			Vegas Ruin (405/2012)			
11	cobble-adobe-foundation room	cotton seed	1230–1300	radiocarbon[c]	1150–1300	room attached to compound
		maize	1030–1240	radiocarbon		
11.2	hearth		935–1115	archaeomagnetic		
			1135–1315			
19	pit structure	upper hearth	1010–1115	archaeomagnetic		cobble-and-post-reinforced adobe
			1160–1215			walls; house under compound and
		lower hearth	935–1140	archaeomagnetic		superimposed on F99
			1160–1315			
34	pit structure	upper hearth	935–1365	archaeomagnetic		*jacal* structure w/ posts & floor
		lower hearth	935–1690	archaeomagnetic		groove
99	pit structure	upper hearth	1010–1190	archaeomagnetic		post-reinforced adobe walls
		lower hearth	1010–1290	archaeomagnetic		house under compound & F19
179	pit structure	upper hearth	935–1315	archaeomagnetic		post-reinforced adobe walls; house
		maize	1030–1240	radiocarbon		under NW corner of compound
154	roasting pit	cotton seed	1200–1290	radiocarbon		pit in NW corner of compound
			Rock Jaw (407/2014)			
1	pit structure	hearth	1110–1140	archaeomagnetic	1050–1175	pit structure w/ posts & floor
		Phaseolus	910–920	Radiocarbon		groove; under Feature 3
3	pit structure	hearth	1010–1265	archaeomagnetic		true pit house superimposed on
		Phragmites	980–1060	radiocarbon		Feature 1
			Crane Site (410/2017)			
6	cobble-adobe-foundation room	maize	1160–1270	radiocarbon	975–1100	
30	pit structure	hearth	1010–1140	archaeomagnetic		house superimposed by
			1160–1215			Classic period granary pedestals
			1235–1365			

[a] Ceramic dates from Heckman, Chapter 2, this volume
[b] Archaeomagnetic dates are all based on SWCV595, all dates A.D.
[c] Radiocarbon dates are all 2σ-calibrated dates, all dates A.D.

of a number of Salado Red Corrugated, brown corrugated, and smudged red ware sherds (see Volume 2, Table 9).

Although no ceramics with well-defined date ranges were recovered from Site 406/2013, comparison with the collections from the other sites suggest that this site was used during the pre-Classic period. This conclusion is suggested by the presence of indeterminate Tusayan White Ware, indeterminate Little Colorado White Ware, and Wingfield Plain sherds—ceramic wares and types usually restricted to the pre-Classic period. In contrast to the other three sites, however, almost equivalent proportions of Classic period sherds were recovered from Site 406/2013, including a few Salado Red Corrugated, other smudged red ware, and brown corrugated sherds (see Volume 2, Table 9).

Classic Period Occupation

The remaining three sites with temporally diagnostic ceramics most likely range in age from the early to middle Classic period, a range that Heckman dates between A.D. 1150 and 1300. The largest collection of temporally diagnostic sherds was recovered from the Vegas Ruin. Of the several hundred ceramic samples with well-defined date ranges, only little more than two dozen have end dates prior to A.D. 1150 (see Table 9). The remainder range in age from A.D. 1000 to 1450, although the most abundant types date between A.D. 1040 and 1300. Although these date ranges do not preclude a pre-Classic period occupation at the Vegas Ruin, as such an occupation likely would have been quite limited in extent. This conclusion is supported by the several thousand Classic period red ware and corrugated ceramic sherds in comparison to only a few Wingfield Plain sherds, which are diagnostic of the Sedentary period. Abandonment of the site prior to the late Classic period is indicated by the absence of Pinto or Gila Polychrome among the small number of Roosevelt Red Ware ceramics and the high proportion of red ware (close to 40 percent) relative to brown ware and Salado Red in the undecorated ceramic collection. This is similar to the mean of 41.7 percent red ware for Miami phase sites versus 10.7 percent for Roosevelt and Gila phase sites noted by Ciolek-Torrello, Whittlesey, and Deaver (1994:Table 6.7). By contrast, Ciolek-Torrello, Whittlesey and Deaver noted an increase through time in the percentage of Salado Red in Tonto Basin Classic period collections. However, the frequency of Salado Red at the Vegas Ruin is much higher than that found in most late Classic period Tonto Basin sites examined by Ciolek-Torrello, Whittlesey, and Deaver. The high proportion of Salado Red at the Vegas Ruin may be a product of this type having been selected as mortuary vessels, as appears to have been the case at Tapia del Cerrito (see Ciolek-Torrello, Whittlesey, and Deaver 1994:618). All three Classic period sites in the CCP, however, contained relatively high proportions of Salado Red.

The collection of decorated ceramics from the Crane site is much smaller but is otherwise remarkably similar to the Vegas Ruin. Only a small number of the decorated ceramic sherds have end dates prior to A.D. 1150, and the most common types found at this site are Snowflake and Roosevelt Black-on-white (see Table 10). A single sherd of the notable type Casa Grande Red-on-buff is the only example of this early Classic period buff ware found in the CCP. Higher relative frequencies of Roosevelt Red Ware sherds are also present, including examples of Pinto and Gila Polychrome. These ceramic frequencies suggest a similar occupational range for the two sites, although perhaps a relatively more intensive Gila phase occupation at the Crane site. A lower frequency of red ware sherds and higher frequencies of Salado Red Corrugated and brown corrugated sherds (see Volume 2, Tables 23 and 24) all point to a slightly later occupation at the Crane site relative to the Vegas Ruin.

No decorated ceramics or other well-dated types were recovered from Site 404/2011, a field house in the Gold Creek drainage. The relative frequencies of undecorated ceramics, however, can be used to assign this site tentatively to the middle Classic period. The small collection of sherds recovered from this site includes just under 20 percent red ware (see Volume 2, Table 6), a number consistent with the Roosevelt or Gila phase (see Ciolek-Torrello, Whittlesey, and Deaver 1994:Table 6.7). The frequency of Salado Red is similar to that at the Vegas Ruin, although no mortuary features were identified at the Gold Creek field house. The frequency of brown corrugated wares relative to other undecorated wares was slightly higher than the Vegas Ruin collection but less than half that of the Crane site. Taken together, these relative frequencies suggest an occupation sometime in the Roosevelt phase.

Stratigraphic and Architectural Evidence

In Chapter 3, Deaver and Lengyel present the argument that different architectural construction styles and methods have temporal significance in Tonto Basin prehistory. Based on Clark's (2001) (see also Clark 2004b) recent architectural studies of Tonto Basin Classic period sites, they suggest a four-stage construction sequence from Sacaton-style houses-in-pits, to post-reinforced adobe-walled pit rooms, followed by cobble-reinforced adobe-walled pit rooms, and culminating in coursed-masonry pit rooms and surface structures. Their argument has its roots in Wheat's (1955) classic study of early Mogollon architecture, in which he distinguished the true pit houses typical of Mogollon architectural styles from Sacaton-style houses-in-pits (see Chapter 1; see also Haury 1976). But perhaps more germane is McGregor's (1941) earlier study of changing Sinaguan architectural styles at Winona Village and the Ridge Ruin in the Flagstaff area.

An Architectural Sequence from the Flagstaff Area

McGregor's (1941) architectural study documents the shift from pit houses to surface masonry architecture in the Sinaguan region that was contemporaneous to architectural shifts in Tonto Basin. It is also relevant to this discussion because the shift involved many similar architectural forms as those found in Tonto Basin and is especially instructive because the sequence is precisely dated with tree-ring dates. For example, the Winona focus at Winona Village is contemporaneous with the Sedentary period and Winona-focus pit houses are architecturally similar to Sacaton-style houses-in-pits (McGregor 1941). McGregor (1941:121) assigned various types of pit rooms that are intermediate between these pit houses and surface masonry structures to the Angell focus. The earliest pit rooms had clay-lined walls or a combination of clay-lined and masonry walls, whereas fully masonry-lined pit rooms became the dominant form by the end of the Angell focus.

What makes the Angell-focus houses important is their association with tree-ring dates, which provide the best evidence for the age of these transitional architectural forms. Reevaluation of the tree-ring dates from Winona Village by Robinson et al. (1975) has supported McGregor's architectural sequence. For example, House A at NA2133, a subrectangular Winona-focus pit house, is indistinguishable from Sacaton-style houses (McGregor 1941:92, Figure 27). This large subrectangular house, with peripheral posts set in a floor groove, provided a large series of cutting dates between A.D. 1085 and 1086, securely dating its construction to a time contemporary with the end of the Sedentary period.

McGregor (1941:Figure 33) also assigned House C at NA2135 to the Winona focus. This house represents an early type of rectangular pit room characterized by clay-lined walls with embedded peripheral roof-support poles; essentially what Deaver and Lengyel (see Chapter 3) characterize as post-reinforced-adobe walls. Two cutting dates of A.D. 1087 and several other noncutting dates as late as A.D. 1096 for this house (Robinson et al. 1975:89) suggest it may have been built slightly later than the Sacaton-style House A at NA2133. House M at NA3644 is another intermediate structure with a slightly subrectangular shape. The walls were entirely lined with clay with embedded wall posts, and only the passage connecting the vestibule with the main house was lined with masonry (McGregor 1941:117, Figure 40). Cutting dates of A.D. 1097 and 1104 (Robinson et al. 1975:90) suggest that this house is slightly later than both the Sacaton-style House A at NA2133 and House C at NA2135, the other clay-lined pit room.

By contrast, House C at NA3644, an entirely masonry-lined pit room, provided a much later cutting date of A.D. 1120. More enigmatic is House P at NA3644, a small and shallow rectangular house with large, upright cobbles lining the walls (McGregor 1941:118–120, Figure 41). Roof-support posts also lined the walls of this pit room but were not embedded in them. McGregor assigned this house to the Angell focus but pointed to similarities with later Padre-focus houses, which like House P, lacked lateral entryways. Padre-focus houses, however, were distinguished by ventilators and were presumably entered from the roof. House P showed no evidence of such an entryway. A single cutting date of A.D. 1107 and another noncutting A.D. 1107 date suggest this house was built slightly after the two clay-lined pit rooms, House M at NA3644 and House C at NA2135, but well before the coursed-masonry-lined pit room, House C at NA3644.

The sequence of pit rooms at Winona Village is completed with the Padre-focus houses. These houses have no parallel in the lower desert regions of the Southwest. They were rectangular pit houses excavated into deep pits with coursed masonry lining the pit walls and ventilator shafts replacing lateral entryways. These houses were presumably entered from the roof, as indicated by ladder postholes in the floor. House A at NA2134 is representative of this type (McGregor 1941:Figure 43). No cutting dates are available for this house, but a large series of noncutting dates indicate it was constructed as late as the A.D. 1140s but probably no earlier than the A.D. 1130s. Residents of the area quickly shifted to surface masonry pueblos, as indicated by the nearby Ridge Ruin, a small masonry pueblo of 19 rooms. Numerous cutting dates from three rooms at this site indicate that construction occurred at some time between A.D. 1101 and 1137. A few noncutting dates extend as late as A.D. 1173, although Robinson et al. (1975:79) were dubious of their association. They concluded that the rooms with these dates were probably built between A.D. 1128 and 1135, utilizing construction elements from slightly earlier structures.

The Winona Village and Ridge Ruin provide an unparalleled view of architectural change in the Southwest. McGregor describes a well-dated architectural sequence from Sacaton-style houses-in-pits to more-rectangular post-reinforced adobe-walled pit rooms, followed by fully rectangular pit rooms with masonry-lined walls. Masonry-lined pit rooms, in turn, were replaced by surface masonry pueblos. What is most remarkable about this sequence is that all these changes occurred over a 30–40-year period, less than two generations in the human life span.

The entire architectural sequence evident at Winona Village and the Ridge Ruin has not been duplicated at any single site anywhere else in the Southwest. Nevertheless, the shift from Sacaton-style houses-in-pits to various types of pit rooms incorporating some form of post- or cobble-reinforced adobe and, eventually, to coursed surface masonry construction is common in Tonto Basin and adjacent areas during the transition between the Sedentary and early Classic periods. McGregor's pit rooms were built in deep pits, but similar pit rooms built in shallower pits like those in lower desert regions of the Southwest have been found at the Calkins Ranch Ruin (Breternitz 1960:3; Stebbins et al. 1981) in the middle Verde Valley, at the Lone Juniper site in the lower Verde Valley (Klucas et al. 1998:509) (see Figure 2), and in houses excavated in Sunflower Valley on the western flanks of the Mazatzal Mountains (Vanderpot 1999). Unfortunately, these houses are all poorly dated, although all are assigned to the transition between the pre-Classic and Classic period or the early Classic period by their excavators.

Although the temporal precision of McGregor's data cannot be matched in the lower desert regions of the Southwest, we can infer from his data that the shift from pit houses to surface structures began at the end of the eleventh century. This time corresponds well with Deaver and Lengyel's dating of the end of the Sedentary period in Tonto Basin, although there might have been a lag in the transition in Tonto Basin. Although the possibility that pit houses, pit rooms, and surface structures were occupied contemporaneously in Tonto Basin cannot be ruled out, McGregor's data clearly indicates that they were not and that the shift in architectural forms was rapid.

Cottonwood Creek Project Sites

With this architectural model in mind, we can examine the architectural sequence and stratigraphic evidence from the CCP sites. Architectural features were excavated at four sites: the Vegas Ruin, Crane site, Rock Jaw site, and Site 404/2011. Only a single field house with an attached, partially enclosed area was found at the latter site and no chronometric data was recovered. Thus, the focus of this discussion is on the remaining three sites.

The Rock Jaw site is the earliest of the three and is assigned to the Sedentary period and early Miami phase, as discussed above. Two superimposed pit houses were found at this site. Feature 1 was a typical Sacaton-style house-in-a-pit. It was subrectangular in form, with peripheral wall posts set in a floor groove. This house is an ideal example of the Sacaton-style houses that characterized many areas of the Southwest during the Sedentary period. This house was overlain by a true pit house with clay-lined walls. No peripheral posts were identified in this later structure; thus, it is not an example of the post-reinforced structures that are believed to have replaced the Sacaton-style houses in many areas of the Southwest.

A more complete sequence is evident at the Vegas Ruin, where five habitation structures were found at this largely early Classic period settlement. Feature 34 is another example of a Sacaton-style house—subrectangular in form with peripheral posts and a floor groove. A short distance to the southwest and aligned slightly behind Feature 34 was Feature 179, suggesting that it was not contemporaneous with Feature 34. Feature 179 is a good example of the proposed intermediate-style pit houses. It was more rectangular in shape and was characterized by post-reinforced adobe walls similar to McGregor's Angell-focus houses. The large, bulbous entryway of Feature 179 retained the peripheral posts set in a floor groove typical of the earlier Winona phase houses. The northwest corner of a low, cobble-adobe-foundation wall that made up the compound at the Vegas Ruin was superimposed upon the southeast corner of Feature 179, confirming that cobble-adobe-foundation walls superseded post-reinforced walls at this site. An almost identical structure, Feature 99, was located within the compound, slightly southeast of Feature 179 and aligned with Feature 34. This arrangement of the three houses suggests that Features 99 and 179 may not have been contemporaneous, and Feature 99 was more likely associated with the older-style Feature 34.

Superimposed on the southeast corner of Feature 99 was a more subrectangular house with upright cobble- and post-reinforced adobe walls representing the final stage in pit-room construction. This house, Feature 19, lacked the large, bulbous entry of the earlier pit rooms. Its stratigraphic relationship to Feature 99 unambiguously indicates that the mixed cobble- and post-reinforced construction method replaced the post-reinforced method. The final structure to be built was a cobble-adobe-foundation room, Feature 11, attached to the north wall of the compound. Actually, the compound wall was abutted to Feature 11. A short wing wall and granary pedestal were located on the south side of Feature 11. The location of Feature 19 within the southwestern part of the compound suggests that it could have been contemporaneous with Feature 11 and the compound. Although Feature 99 was also contained within the compound, the stratigraphic superposition between the compound wall and the almost identical Feature 179, suggest that Feature 99 also predates the compound. Burials and other pit features also intruded Features 34, 99, and 179, suggesting that all three houses predate Features 11 and 19, which contained no burials.

The Crane site provides less-complete evidence. At this site, a subrectangular pit house, Feature 30, lacking peripheral postholes or floor groove was found within an open courtyard area partially bounded by a large, L-shaped structure composed of several cobble-adobe-foundation rooms. The pit house did not appear to be associated with the compound, because two granary pedestals and a third cobble feature were superimposed on the floor of the pit house. Feature 30 appears to be similar in construction to Feature 3 at the Rock Jaw site, and like the latter feature, does not match any of the house forms in the proposed architectural sequence suggested by McGregor's and Clark's research.

Chronometric Evidence

A small number of archaeomagnetic and radiocarbon dates were obtained from four of the seven prehistoric sites with ceramic data. These chronometric data provide tentative support for the pre-Classic and Classic period occupations identified by the ceramic data and the architectural sequence.

Archaeomagnetic dates were obtained from the hearths in each of the two superimposed pit houses at the Rock Jaw site. The date from Feature 1 is a high-precision date, which clearly supports a late Sedentary period occupation for the initial occupation of the site (see Table 88). Unfortunately, the date from Feature 3, the later house, is of lower precision and encompasses the entire date range for Feature 1 and much of the early Classic period. Two high-precision radiocarbon dates from these two houses suggest a late Colonial or early Sedentary period age. These two dates are consistent with the stratigraphic relationship between the two houses—the stratigraphically lower house (Feature 1) is slightly older than the upper house (Feature 3).

A single archaeomagnetic date was obtained from the *horno*, Feature 1, at Site 41/583. This date encompasses the entire period in question from the Sedentary to the middle of the Classic period. It contributes little to the chronological placement of this feature or the site.

The largest number of dates was obtained from the features at the Vegas Ruin. Two dates were obtained from superimposed hearths in the presumed oldest house, the Sacaton-style Feature 34. Unfortunately, both dates provide poor chronological resolution and do not contribute to the chronological placement of this house. Features 99 and 179, the intermediate post-reinforced houses, provide slightly better temporal resolution. Archaeomagnetic dates obtained from the lower and upper hearths in Feature 99 indicate abandonment sometime in the late Sedentary period or early Miami phase. An archaeomagnetic and a radiocarbon date from maize recovered from Feature 179 provide poor temporal resolution.

Two archaeomagnetic dates were obtained from superimposed hearths in Feature 19, the later cobble- and post-reinforced adobe-walled pit room that was superimposed upon Feature 99. There are two options for each dated hearth in Feature 19. In each case, one option suggests a Sedentary period age and the other an early Classic period age. Following the reasoning used by Deaver and Lengyel in Chapter 3, the early Classic period age is selected in the case of both features, given the architectural style and the ceramic age for the site. The date from the upper hearth provides the best resolution and places Feature 19 in the Miami phase.

Feature 11 is the cobble-adobe-foundation room attached to the compound wall that is stratigraphically superimposed upon Feature 179. A radiocarbon date from charred maize cupules recovered from the hearth of Feature 11 contributes little to the dating of this house, as the dates span much of the Sedentary and early Classic periods. An archaeomagnetic sample from this hearth also sheds little light on the dating of this feature, as it provides two date options, one spanning most of the Sedentary period and the other spanning the end of the Sedentary period to the beginning of the late Classic period. A radiocarbon date from a cotton seed recovered from Feature 11 spans late Miami phase to the end of the Classic period. Taken together, these dates suggest a late Miami or early Roosevelt phase age for the cobble-adobe-foundation features at the Vegas Ruin. A radiocarbon date provided by a cotton seed from a small roasting pit, Feature 154, located inside the northwest corner of the compound, suggests a similar age.

The final date from the Vegas Ruin was collected from a firepit, Feature 225. Two date options were obtained from this sample. Again, the first option is consistent with a Sedentary period age, whereas the second option points to an early Classic period occupation.

Two dates were obtained from the Crane site. An archaeomagnetic sample from the hearth in the pit house, Feature 30, returned three date options: a Sedentary period date, an early Classic period date, and a middle Classic period date. The latter date can easily be excluded based on our archaeological knowledge that this feature underlies the features associated with the later occupation of the site. However, based on ceramic evidence from the Crane site, Feature 30 could date to either the Sedentary or early Classic period. A radiocarbon date was obtained from a charred maize cupule from one of the later, low-walled cobble-adobe-foundation structures, Feature 6, at this site. This date does little to clarify the temporal placement of cobble-adobe-foundation structures at the Crane site, as it ranges from the middle Sacaton (or Ash Creek phase [see Elson 1996]) through the Roosevelt phase.

Taken individually, the low resolution of most of these dates provides highly equivocal evidence for the dating of CCP sites. In the case of archaeomagnetic samples, most of the CCP samples date between the twelfth and thirteenth centuries, which is one of the times when the dating curve reverses its direction. Taken together, however, the chronometric data tend to support the ceramic, architectural, and stratigraphic reconstructions. A high-precision archaeomagnetic date from Feature 1 at the Rock Jaw site and two high-precision radiocarbon dates from the two superimposed houses ostensibly support a Sedentary period occupation for this site. At the other extreme, the cobble-adobe-foundation structures at the Vegas Ruin and Crane site are well dated to the late Miami and early Roosevelt phase by a series of radiocarbon dates. Feature 19 is the best dated of the sequence of pit houses at the Vegas Ruin. The late date option from the upper hearth in this house clearly points to a Miami phase occupation sometime between A.D. 1160 and 1215 for this house. The location of Feature 19 within the compound suggests that this pit room could have been contemporaneous with the cobble-adobe-foundation structures at the Vegas Ruin. The much later radiocarbon date obtained from the cotton seed (A.D. 1210–1390) from the cobble-adobe-foundation of Feature 11, however, does not overlap with the date from the later hearth in Feature 19 and conclusively demonstrates that the two types of construction were not contemporaneous.

Subsistence and Settlement

As discussed in the introduction to this volume, at the outset of the project, we focused our attention on the theme of subsistence and settlement as the most directly applicable research theme and the one that was most likely to be addressed with the type of sites we expected to find in the project area. A number of subsistence-related concerns, such as land-use patterns, plant domestication, means of food preparation and storage, intensification of food production, and agricultural strategies, have been outlined for Tonto Basin (Macnider and Effland 1989). In most respects, our expectations were borne out, and we were able to gather sufficient evidence to address many of these subsistence-related issues.

Human subsistence is a complex phenomenon that involves human-land relationships, storage and processing features, food-collection and -processing tools, domestic artifact inventories, and evidence of wild- and domesticated-resource use. Detailed analyses of domestic ceramic and lithic tools are presented in Volume 2 along with paleobotanical and faunal analyses. In addition, Chapter 4 of this volume is devoted to a functional analysis of ceramic containers, and Chapter 5 presents a synthesis of the paleobotanical and faunal data. The latter attempts to examine prehistoric diet and resource use across time and space in Tonto Basin by placing CCP data within a regional context. This is accomplished by comparing CCP results with 11 other archaeological projects carried out in Tonto Basin. Thus, we will only summarize the results of this synthesis here and discuss other subsistence-related findings in greater detail.

Paleobotanical and Faunal Evidence

In Chapter 5, Wegener and Adams divide Tonto Basin into lowland and upland areas and compare prehistoric subsistence data from the Upper and Lower Tonto Basin. In lowland areas, prehistoric people had access to extensive alluvial floodplains along the Salt River and Tonto Creek, where relatively large-scale floodwater and irrigation farming were possible. By contrast, the residents of upland areas in the piedmont zone of the Sierra Ancha and Mazatzal Mountains only had access to relatively small plots of arable land along small- and medium-sized drainages where small-scale runoff agriculture or overbank floodwater farming could have been practiced. Small-scale irrigation could also have been practiced using water from upland springs. Some upland areas also had potential for dry farming, although farm plots would have been very small. Wild-plant and animal resources available to people in the lowland and upland areas were also expected to have been very diverse. In addition to this geographic division, Wegener and Adams also examined trends in plant use, agricultural strategies, and animal procurement from the pre-Classic and Classic periods, with a focus on the pre-Classic to Classic period transition—the period of time best represented in the CCP data.

The evidence from the CCP sites is consistent with regional data suggesting a general pattern of increasing specialization and perhaps intensification of agriculture between the pre-Classic and Classic periods. Pre-Classic period residents of the Cottonwood and Hardt Creek localities appear to have been primarily sedentary farmers who cultivated both cool- and warm-season crops and gathered the cool- and warm-season wild plants in these areas; hence, they likely resided at their settlements year round. An abundance of cottontail rabbits suggests that land disturbance was low, whereas high artiodactyl indexes indicate that deer populations were not overexploited. Taken together, this evidence suggests a pre-Classic period pattern of low population density, relatively high rates of sedentism, and a subsistence strategy that focused on the cultivation and gathering of a wide variety of wild and domesticated plants during multiple seasons, as well as hunting practices that primarily targeted deer and cottontail rabbits. Evidence from the much larger sample of pre-Classic period sites in the nearby TCAP project suggest a similar pattern of low-density population but reduced residential intensity during the Sedentary period, when settlements appear to be primarily repeated seasonal occupations rather that permanent year-round occupations (Clark and Vint 2004:275; see Ciolek-Torrello 1994b).

These subsistence strategies changed markedly beginning in the Miami phase. These changes are evident in the CCP data, which indicate that a pattern of increasing agricultural specialization and intensification in production occurred in conjunction with increased seasonal mobility. Early Classic period farmers in the three localities touched by the CCP focused heavily on growing warm-season maize, beans, squash, and cotton that would have required expansion of irrigation systems (see Bohrer [1996] and Halbirt and Gasser [1987] for discussions of early Classic period farming in the Hardt and Gold Creek areas). This pattern was matched by a declining emphasis on cool-season wild plants and indigenous, managed resources, as well as little barley, a cool-season domesticate. Cottontail rabbit populations plummeted in lowland areas during the Miami phase, suggesting a tremendous increase in land clearing, probably as a result of increasing human population and the expansion of irrigated fields. The focus on maize production in the Classic period is supported by other evidence. Trough metates and loaf manos, the ground stone tools generally associated with corn processing, were abundant at the Vegas Ruin and Crane site (see Volume 2, Chapter 4). By contrast, agave, which saw increasing use during the Classic period in many regions of central Arizona, decreased slightly in ubiquity in the paleobotanical collections from the CCP sites (see Volume 2, Chapter 7). Tabular tools, usually associated with agave processing, were also very rare in CCP lithic collections (see Volume 2, Chapter 4). Finally, dietary information from the osteological data is also pertinent. Lincoln-Babb (see Volume 2, Chapter 9) argued that a high incidence of carious anterior teeth, cervical caries, and antemortem loss of anterior teeth and molars all point to a carbohydrate-rich diet, such as one that is dependent upon maize. Clark and Vint (2004:289) pointed to similar evidence for intensification of maize, beans, squash, and cotton production but also suggested an increase in agave exploitation and even possible cultivation in the early Classic period TCAP sites. Thus, the reduction in agave use (and divergence from most other early Classic period sites in the region) among the CCP sites may be a product of sampling error in this smaller site sample compared to TCAP.

Subsistence patterns in lowland and upland areas also began to diverge in the Miami phase. Both types of areas were characterized by a reduction in food diversity. In lowland sites, the pre-Classic period strategy involving a dependence on a diversity of agricultural and wild-food resources was replaced by a focus on a few staple crops—maize, cotton, and agave. This shift occurred in the Miami phase and changed little in the later phases of the Classic period. Subsistence strategies in upland areas were more variable during the Classic period, although most areas were characterized by a reduction in food diversity. For example, in some upland locations, such as the Sycamore Creek valley on the west flanks of the Mazatzal Mountains, the shift in strategies involved a decreasing emphasis on cultivation and an increased use of wild plants (Adams 2003). Other upland areas were characterized by a continued reliance on domestic- and wild-plant foods. Adams suggested that the diversity of upland subsistence strategies indicates that individual groups focused on the strategies that worked best in each upland area.

Variable artiodactyl indexes suggest increasing regional variation in hunting patterns. Classic period hunters, especially in the Lower Tonto Basin, procured fewer artiodactyls than their predecessors. Wegener and Adams (see Chapter 5) infer that this trend is a product of increasing human population density and concomitant landscape modification and overexploitation of artiodactyl populations. This trend is not evident in upland areas, where big-game hunting actually increased during certain periods. Wegener and Adams suggest that the higher index values for artiodactyls in the upland areas is a product of lower human population densities and better protection for the game in these areas. Interestingly, however, artiodactyl remains from upland sites consist primarily of low-utility skeletal elements, suggesting that the meatier segments of the carcasses were transported elsewhere. The presence of both low- and high-utility elements at the Vegas Ruin and other lowland sites suggests that at least some of these carcasses were transported to lowland villages. The largest proportions of high-utility elements occurred in the platform-mound communities, suggesting the occurrence of transport or exchange of big-game carcasses from upland areas to these lowland population centers. Overall, however, Wegener and Adams conclude that lowland hunters targeted big game in both upland and lowland areas whenever possible. Wegener and Adams also suggest that the greater variety of animal taxa found in the refuse of the larger villages of the Lower Tonto Basin represent a broadening of the subsistence base, possibly as a result of overexploitation of local artiodactyl populations and dietary stress.

Settlement Patterns

Another perspective on the theme of subsistence and settlement is provided by examining the distribution of different types of settlements across the landscape. For this purpose, we gathered site information from previous reports and the TNF site atlas for the three localities encompassing the CCP area and adjacent areas (Table 89; see also Table 1). Although the archaeological investigation of these three localities has not been comprehensive, a variety of areas has been investigated and a sufficiently large sample of sites has been gathered to obtain a reasonable view of prehistoric settlement.

The Cottonwood Creek locality is the largest and most diverse of the three localities, including a large segment of floodplain and lower terraces extending from the northern end of the Lower Tonto Basin down to Slate Creek and including a portion of the piedmont zone of the Mazatzal Mountains (see Chapter 1 for descriptions of each locality). The Corral Creek area, a small piedmont valley on the eastern flanks of the Mazatzal Mountains, is also included with the Cottonwood Creek locality, although Corral Creek is actually a tributary of Slate Creek. Residents of the lowland areas would have had good access into this upland valley by either Cottonwood or Slate Creek to their headwaters. The Hardt Creek locality is much smaller in area within the Upper Tonto Basin but contains a large upland valley and the lower slopes of the eastern Mazatzal Mountains. The Gold Creek locality is the smallest of the three and the least diverse. It is contained entirely in the upland area and consists largely of rugged and heavily dissected mountain slopes. A small upland valley formed by Gold Creek appears to have been the most heavily settled area in this locality. The lowland portion of this locality is a narrow canyon that joins Tonto Creek at a point where it flows through a gorge that separates the Upper and Lower Tonto Basins.

All three localities were probably first exploited during the Archaic period. A cluster of lithic scatters in the Corral Creek portion of the Cottonwood Creek area

Table 89. Distribution of Prehistoric Sites in the Cottonwood, Gold, and Hardt Creek Localities, by Site Type and Time Period

Site Type, by Time Period	Cottonwood		Gold		Hardt		Other[a]		Total
	n	%	n	%	n	%	n	%	n
Archaic									
Campsite	2	28.6	—	—	1	25.0	—	—	3
Lithic scatter	5	71.4	—	—	2	50.0	1	100.0	8
Food processing	—	—	—	—	1	25.0	—	—	1
Subtotal[b]	7	11.1	—	—	4	8.9	1	3.4	12
Pre-Classic									
Artifact scatter	—	—	—	—	1	11.1	—	—	1
Food processing	—	—	—	—	1	11.1	—	—	1
Farmstead	3	60.0	—	—	6	66.7	2	100.0	11
Hamlet	1	20.0	—	—	1	11.1	—	—	2
Village	1	20.0	—	—	—	—	—	—	1
Subtotal[b]	5	7.9	—	—	9	20.0	2	6.9	16
Classic									
Agricultural feature	2	3.9	—	—	2	6.3	1	3.8	5
Artifact scatter	2	3.9	—	—	1	3.1	—	—	3
Lithic scatter	5	9.8	1	6.2	—	—	—	—	6
Food processing	—	—	—	—	—	—	1	3.8	1
Field house	22	43.1	8	50.0	18	56.3	11	42.3	59
Farmstead	12	23.5	6	37.5	8	25.0	5	19.2	31
Hamlet	7	13.7	1	6.2	3	9.4	8	30.8	19
Village	1	2.0	—	—	—	—	—	—	1
Subtotal[b]	51	81.0	16	100	32	71.1	26	89.7	125
Unknown	4		—		1		—		5
Total[c]	67	42.4	16	10.1	46	29.1	29	18.4	158

[a] Other sites are located near the confluence of Rye and Tonto Creeks, the slopes of the Sierra Ancha, and at the mouth and east of Slate Creek.

[b] Percent of all sites in locality, excluding unknown site type.

[c] Row percent.

suggests the presence of Middle Archaic period hunting camps and workstations in the higher upland valleys (Figure 75), which Ciolek-Torrello (1987b) assigned to the Corral Creek phase as the local manifestation of the Middle Archaic period. These sites are distinguished from later lithic scatters by a greater numbers and diversity of flaked stone tools, including diagnostic Middle Archaic period–style projectile points and bifacial retouch debitage made from a variety of fine-grained cryptocrystalline and dacite materials (Ciolek-Torrello 1987d). The latter is a fine-grained, almost glassy basalt that patinates easily and was preferred by Archaic period populations in the region (Dosh et al. 1987:117–118; Huckell 1973:175–176, 1978:48; Knoblock et al. 2003; Rapp et al. 1998:218; Woodall 1998). A similar setting in the Gold Creek valley is believed to hold additional camps, but this part of the valley has not been surveyed and, thus, no Archaic period sites have been documented in this area (see Ciolek-Torrello 1987b). Another cluster of sites representing the Corral Creek phase, including a possible campsite, is found in a markedly different setting along one of the lower terraces of Hardt Creek. It is possible that some of these lithic scatters may have been used by early historical-period Apache, but several sites provide clear evidence for Middle Archaic period occupation (Huckell 1973; Ruscavage-Barz 1996). Roasting middens radiocarbon-dated to the early nineteenth century, in fact, were found both in the Gold and Hardt Creek valleys (Ciolek-Torrello 1987d). No artifacts were found within the Gold Creek midden, but Apache sherds and a reworked projectile point were found at the Hardt Creek sites, where these features were superimposed on small Miami phase settlements (Ciolek-Torrello 1987b).

An ephemeral Archaic period occupation was found at the Vegas Ruin. This consisted of a cluster of three thermal features north of the compound and a single roasting feature within the compound. These features were associated with flaked stone, limited faunal remains, and juniper and mesquite charcoal. No dates or temporally diagnostic artifacts were recovered from these features, but their stratigraphic position indicates they predate the Formative period occupation of the site. An Archaic period–style

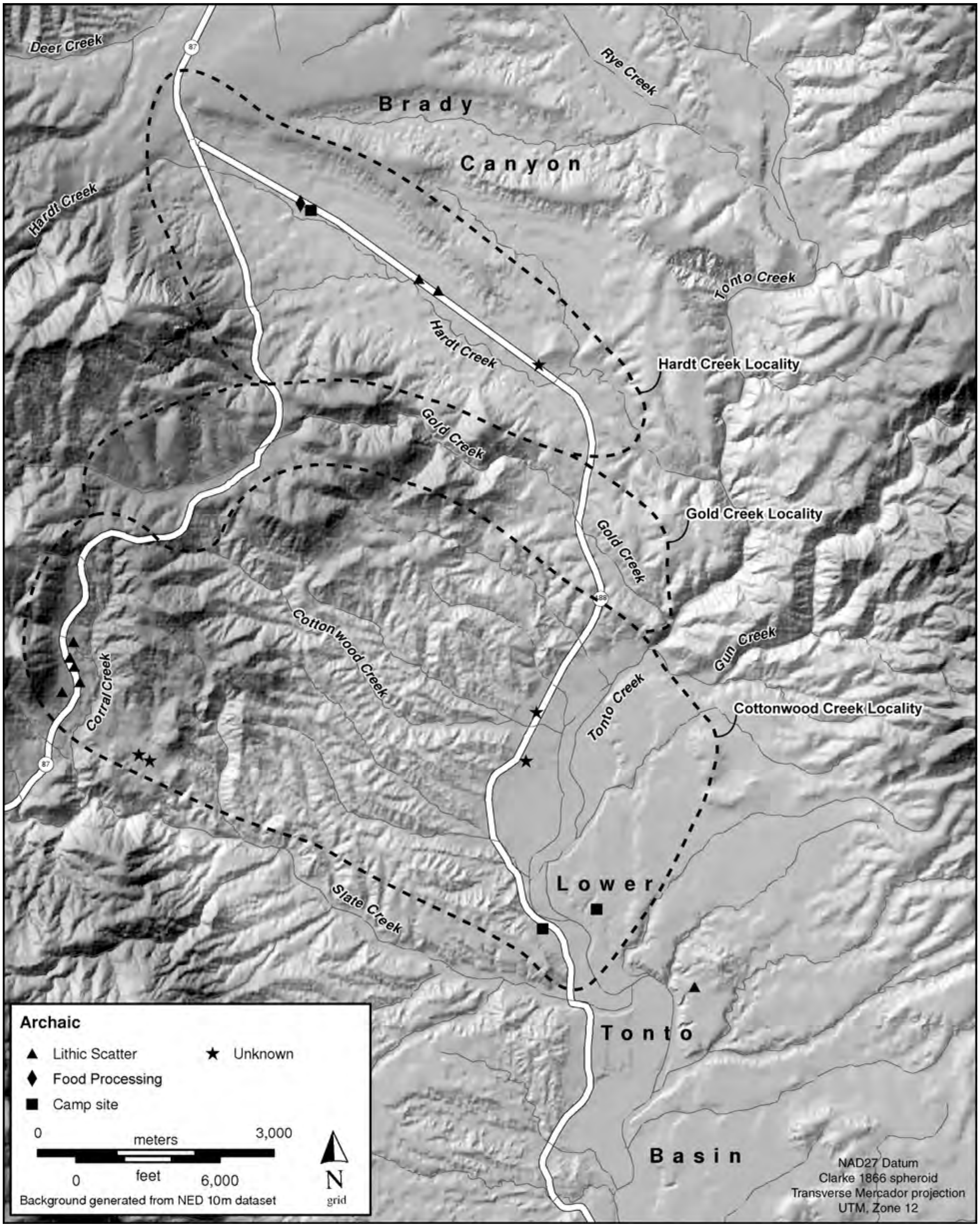

Figure 75. Distribution of Archaic period sites in the Hardt, Gold, and Cottonwood Creek localities.

projectile point, however, was recovered from a Classic period burial that intruded into one of the thermal features (Deaver and Klucas 2010). Two large Archaic period campsites are also located near a cluster of springs along Tonto Creek and a short distance above the Slate Creek confluence. One of these sites, the Boatyard site, contains the only evidence of Late Archaic period occupation in the area. The Boatyard site, located at the southern edge of the Cottonwood Creek locality at the point that Slate Creek enters the basin contains both Middle and Late Archaic (Early Agricultural) period components (Huckell 2004).

Little is known about the resources targeted at these Middle Archaic period settlements or about the size and structure of task groups that utilized them. Excavated features from the Middle Archaic period component of the Boatyard site produced carbonized grass and mustard seeds but no faunal remains. The faunal remains from the Archaic period features at the Vegas Ruin included land snails and small fragments of unburned fragments of squirrel- or rabbit-sized mammal bone. Two patterns are clear, however. First, almost all the Middle Archaic period settlements are located near springs. Second, as early as the Middle Archaic period, prehistoric populations were exploiting a variety of upland and lowland locations in Tonto Basin and, by inference, were targeting a variety of resources. Interestingly, the very different Cottonwood and Hardt Creek localities contain almost equal proportions of Archaic period sites (11 and 9 percent, respectively) (see Table 89). Only the Gold Creek locality has no evidence of Archaic period occupation, although this absence may be more of a product of sampling than prehistoric settlement patterns. The upper part of Gold Creek valley, where springs are indicated on maps and the most likely location for sites dating to this period, has not been investigated.

In contrast to the Middle Archaic period, much more evidence of resource use was recovered from the Early Agricultural period occupation. Chenopods, cheno-ams, hedgehog cactus seeds, tansy mustard seeds, and grass parts were recovered from a variety of features, along with maize and agave (Huckell 2004).The presence of a single pit house, many food-processing features, a thick cultural deposit, and the plant remains indicate an intensive, long-term, seasonal occupation (Huckell 2004).

The distribution of pre-Classic period settlements in the three localities reveals a marked contrast with the Middle Archaic period (Figure 76). A small number of pre-Classic period sites are concentrated along the larger drainages with the largest expanses of farmland, such as Tonto and Hardt Creeks. No evidence of use of the higher upland Gold and Corral Creek valleys is evident during this period. This evidence is consistent with the subsistence data that indicate a more sedentary occupation focused on a variety of agricultural and wild-plant resources in the lower elevation areas. Differences between the Hardt and Cottonwood Creek localities are evident. A higher proportion of pre-Classic period settlements is evident in the Hardt Creek locality (20 percent) as opposed to the Cottonwood Creek locality (8 percent) (see Table 89). The Hardt Creek sites, however, include more special-purpose sites, whereas the Cottonwood locality includes more habitation sites, including the only pre-Classic period village in the vicinity. As elsewhere in Tonto Basin, settlement intensity increased greatly during the Colonial and Sedentary periods. As in the case of the nearby TCAP area (Clark and Vint 2004), there appears to be an uninterrupted sequence of occupation in the CCP area from the beginning of the Colonial to abandonment in the late Classic period, although the data are much more spotty in the CCP area and we were not able to investigate any domestic structures dating to the Colonial period. Although there is also evidence of continuity in domestic construction, continuity in spatial organization and settlement location is much weaker in the CCP area. Sedentary period structures do not exhibit the same eastward orientation noted by Clark (2004b:143) as typical of TCAP structures regardless of time period, and the settlements are too small to form courtyard groups. Furthermore, the Sedentary period Rock Jaw site does not exhibit a Classic period occupation, whereas a Sedentary period period occupation was not identified at the Classic period Vegas Ruin. By contrast, a Classic period multiroom structure superimposes a Sedentary period house at the Crane site. This discrepancy between the TCAP and CCP projects, however, may be due to the much smaller sample size of the CCP. Clark and Vint (2004:270) suggested that all Colonial and Sedentary period settlements in the TCAP area were either farmsteads or homesteads. A Colonial period hamlet, the Ushklish Ruin, is present in the Hardt Creek locality of the CCP area, and others are known in other parts of Tonto Basin (Clark and Vint 2004), but the Sedentary period settlements in the CCP area are farmsteads, like those in the TCAP area. Cameron (1997f:425) also suggested that the Sedentary period settlements in the FLEX area (located adjacent to the southern Sycamore Creek section of the TCAP area), although she observed that at least one site may have been a larger hamlet-sized settlement. Ciolek-Torrello (1994b:633), Elson (1992b), and Rice (1985:253) suggested that large, informally constructed, irregular and oval-shaped Sedentary period houses represented seasonally occupied farmsteads. Clark (2004b) came to a similar conclusion regarding smaller, but still large formally constructed, subrectangular, Sedentary period houses in the TCAP area, suggesting that they represent seasonal settlements, or at most short-term permanent occupations. Clark (2004b:154) further suggested that these houses may have served as temporary residences for an agricultural workgroup consisting of an extended family or other domestic unit larger than a nuclear family. By contrast, Cameron (1997f:425) concluded that Sedentary period houses and associated middens and extramural features in the FLEX project area represented a pattern of more-intensive, year-round occupation or, at least, regular and substantial seasonal reuse, despite that they tended to

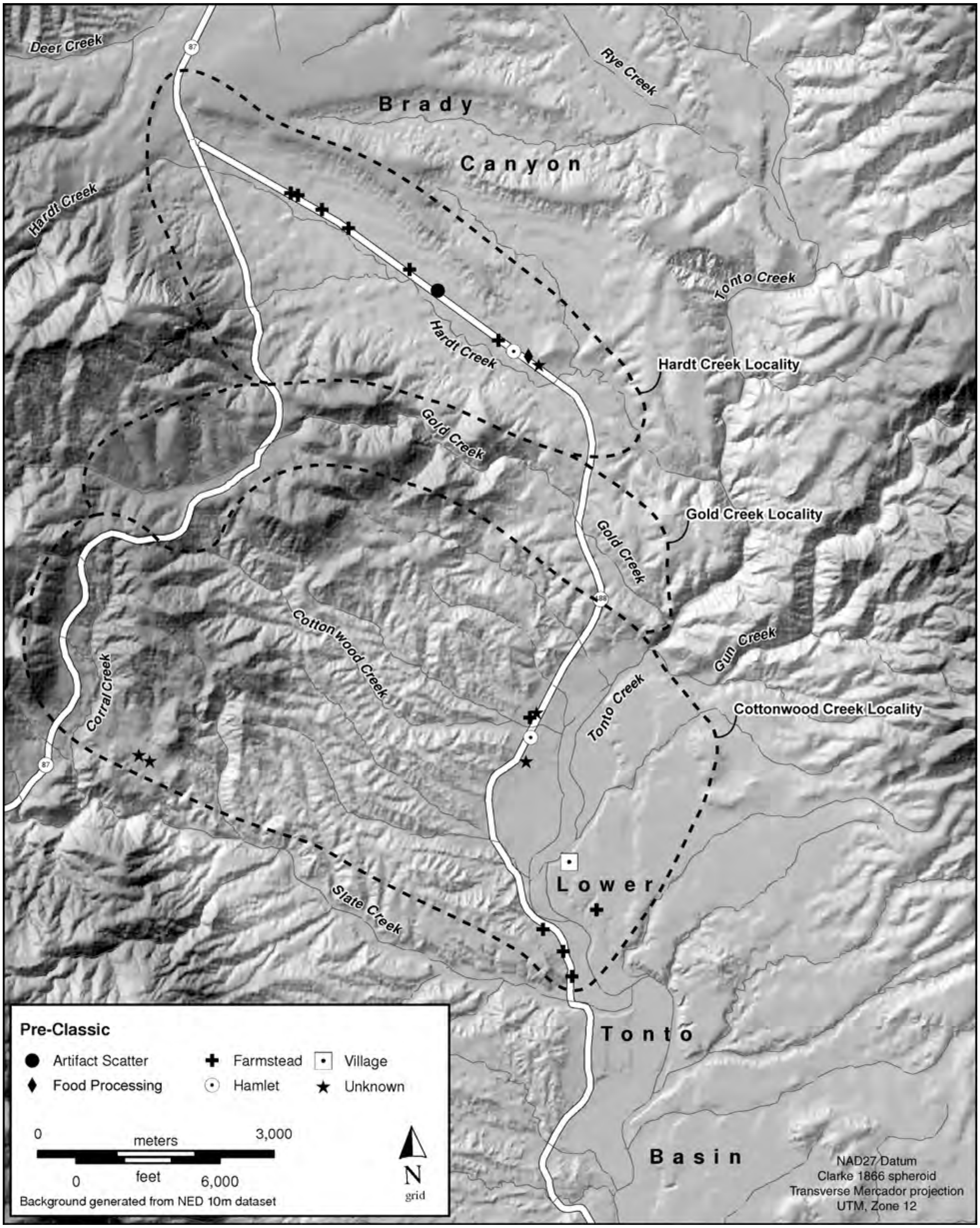

Figure 76. Distribution of Pre-Classic period sites in the Hardt, Gold, and Cottonwood Creek localities.

be very large (with an average size of 31 m^2) and oval or irregular in shape like the Ash Creek pit houses (see Rice 1985). Rice (1985) suggested that the Sedentary period sites in the Ash Creek project represent no more than a single-family residence at any particular point in time of the sites' occupations.

The small number of Sedentary period houses investigated in the CCP area conform closer to the houses described Clark (2004b) in terms of their more-formal construction and associated extramural features. Thus, it is inferred here that the CCP houses represent a more permanent and intensive occupation than the large and informally constructed Sedentary period houses described by Cameron (1997b), Ciolek-Torrello (1994b:633), and Rice (1985). Nevertheless, CCP, TCAP, Ash Creek, and FLEX settlements of the Sedentary period are much smaller than Colonial period hamlets such as the Ushklish Ruin and indicate a dispersal of occupation into small, seasonal, and year-round farmsteads in the Sedentary period. As Clark (2004b) suggested, the paucity of burials at these settlements indicates that these were, at most, short-term occupations, whereas the superimposed houses at the Rock Jaw site indicate that they were recurrent ones.

The distribution of Classic period sites reflects a number of trends already discussed. This period is characterized by the largest number of sites, greatest diversity of settlement types, and the widest distribution of settlement (Figure 77). Between 70 and 80 percent of all the sites in the Hardt and Cottonwood Creek localities are assigned to the Classic period, whereas 100 percent of the Gold Creek sites are Classic period in age (see Table 89). Comparing only the number of habitation sites, it appears that population size may have increased almost tenfold between the pre-Classic and Classic period in the Cottonwood Creek locality and threefold in the Hardt Creek locality (but see below). This population increase is even greater when one considers that almost all the habitation sites were occupied in the Miami and Roosevelt phases. The VIV Ruin was probably the only major settlement with strong evidence for Gila phase occupation.

The distribution of population also changed dramatically in the Classic period. Most of the pre-Classic period settlements were small, scattered farmsteads. Although farmsteads actually increased in number during the Classic period, their proportion relative to other sites was reduced by more than half. Farmsteads constitute approximately 69 percent of all sites in the pre-Classic period (11 of 16) but less than 25 percent of all sites in the Classic period (31 of 125). By contrast, the number and proportion of hamlets and villages remained relatively stable; 3 of 16 pre-Classic period settlements were either hamlets or villages (19 percent), whereas 20 hamlets and villages were present in the Classic period (16 percent).

What changed most in the Classic period was increasing settlement diversity, with temporary habitation sites (field houses) and specialized food processing sites making up almost half of the settlements for the first time. Field houses were probably used by task groups smaller than households and are distinguished from farmsteads, which represent more permanent seasonal or multi-seasonal residences occupied by household groups (Ciolek-Torrello 1987d). This pattern of large numbers of field houses is consistent with Wegener and Adams's (see Chapter 5) inference for increasing residential mobility by at least segments of household groups. Dry-farming agricultural features in upland areas also occur during this period, suggesting a broadening of agricultural strategies. The number of these features is belied by the frequencies in Table 89, as several Classic period field houses and farmsteads are also associated with these types of features. Interestingly, in spite of the marked differences between each of the localities, all three localities are characterized by similar proportions of more permanent habitation to temporary habitation and special-purpose sites—the latter two categories constituting almost 60 percent of all Classic period sites. The Cottonwood and Hardt Creek localities contain similar proportions of farmsteads and hamlets, although the Cottonwood Creek locality has the only village—the VIV Ruin. The Gold Creek locality, which is entirely upland in character has the highest proportion of farmsteads and only a single hamlet. By contrast, the portion of the Lower Tonto Basin surrounding the Cottonwood locality, has the highest proportion of hamlets reflecting the larger extent of arable land in the lower lying areas of the Lower Tonto Basin.

Given the presumed increase in residential mobility, it is possible that the early Classic period residential sites, especially the many small farmsteads, were occupied for shorter time periods than similar pre-Classic period settlements. For example, Ciolek-Torrello and Whittlesey (1994; Ciolek-Torrello, Whittlesey, and Welch 1994; Whittlesey and Ciolek-Torrello 1992) maintain that most of the small Classic period settlements represent very short-term occupations and few were occupied contemporaneously. Thus, Classic period population, most likely, was not nearly as large as indicated by the number of settlements dating to this time period. CCP insights on this hypothesis are equivocal. The evidence from the Vegas Ruin reveals a pattern of long-term residential stability as indicated by the sequence of pit-house construction and replacement. By contrast, the Crane site, a hamlet, and farmsteads, such as the Mazatzal House and Limestone House in the upper Hardt Creek valley, reflect much shorter-term residence (Ciolek-Torrello, ed. 1987).

Thus, taken in concert, the subsistence and settlement data suggest a long-standing pattern of pre-Classic period land use that probably had its roots in the Late Archaic period. This pattern involved a population that was dispersed largely in small, farmsteads scattered throughout the lower-lying valleys. This was a relatively sedentary population with a nonintensive subsistence strategy involving multi-seasonal cultivation of a variety of domesticated plants and collection of an equally diverse set of wild plants.

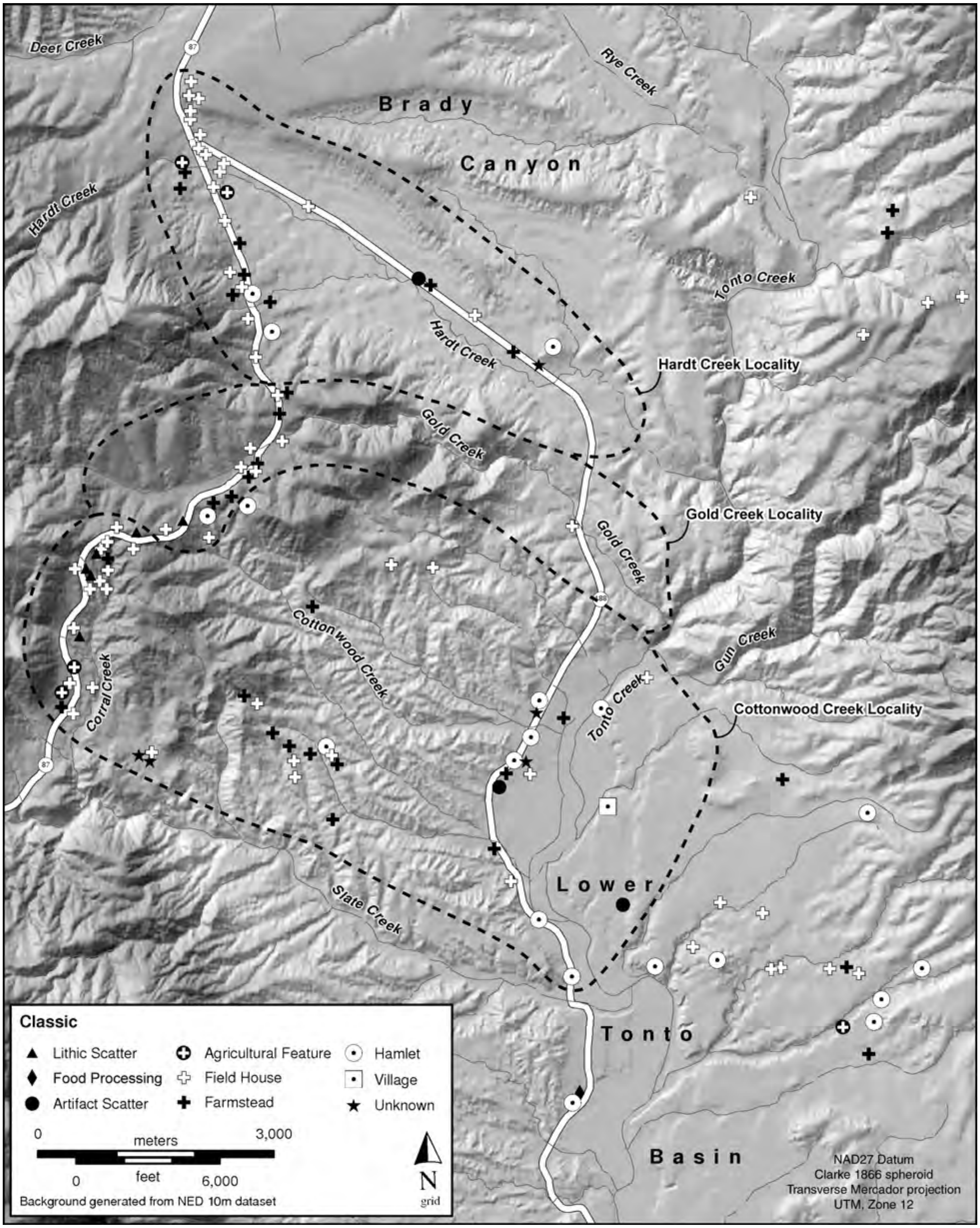

Figure 77. Distribution of Classic period sites in the Hardt, Gold, and Cottonwood Creek localities.

This pattern changed rapidly in the Miami phase, characterized by increasing population size and density and the distribution of this population through a wide variety of lowland and upland habitats. With the exception of villages, a wide range of settlement types occurred in each locality, suggesting the development of localized upland and lowland communities. These changes in settlement were associated with an increase in subsistence specialization, especially in lowland areas. Lowland sites focused on the intensified agricultural production of a narrower range of economic staples. Changes in agricultural strategies and increased production are indicated by evidence for greater land disturbance, as reflected in lower lagomorph ratios. Sites in most upland areas evidence a continuation of a diverse subsistence strategy, although Adams and Ciolek-Torrello (see Volume 2, Chapter 7) argued that there is evidence for a focus on the most productive strategies for each local setting. Such local specialization includes evidence for intensified big-game hunting in upland areas and the Upper Tonto Basin.

As Wood (2000:133) pointed out, "given the environmental constraints on agriculture derived from temperature, rainfall, and transpiration rates in the Basin, and the scarcity of high quality soils, it can be assumed that irrigation agriculture would have been required to sustain stable populations and allow for growth" (see Van West and Altschul 1994; Van West et al. 2000). Wood further argued that irrigation technology would have affected the distribution of population, which was organized into a series of irrigation districts (Wood et al. 1992; see also Van West and Altschul 1994). Wood (2000) replaced his initial model of Tonto Basin irrigation districts, which was based on the Classic period Hohokam system in the Phoenix Basin with one based on topographic constraints such as natural restrictions in Tonto Basin and the presence of major tributaries of the Salt River and Tonto Creek, which would have disrupted canals. Based on these considerations, Wood (2000:134, Figure 5.8) identified eight discrete irrigation districts in the Lower Tonto Basin and three more in the Upper Tonto Basin, each of which was associated with a platform mound. The Cottonwood Creek and Gold Creek localities of the CCP falls into the upper end of what Wood describes as the Watkins Ranch district with the VIV Ruin serving as the associated community's platform mound. The Hardt Creek locality presumably falls within the Rye Creek district of the Upper Tonto Basin. CCP studies did not shed any light on the Watkins Ranch irrigation district and investigation of possible canals was beyond the scope of the CCP, but Wood (2000:136) provides some information:

> The Watkin's Ranch District runs from Punkin Center to the box at Gun Creek [the divide between the Lower and Upper Tonto Basin at the center of the CCP area]. It too has been divided in previous analyses at the Kayler Butte meander. However, a historic canal that headed upstream of the meander and delivered water to fields downstream of it suggests that this low relief meander, unlike the one at Meddler [the southernmost district along the Salt River arm of the Basin], presented no topographic barrier to irrigation. Another historic canal heads just below Gun Creek on the east side and was probably built in the 1880s along the alignment of a prehistoric canal. The platform mound in this district, the VIV site, is near the head of this canal… All these potential districts appear to be quite equal in size of arable land, given the differences in streamflow between the Salt and Tonto Arms, a factor in how much of the available land could have been irrigated. The Tonto Creek districts tend to be larger, averaging a little more than 2,000 acres, with those on the Salt River averaging a little more than 1,500 acres. . . Based on estimated production and consumption figures (Craig 1995), if only half of the average acreage was farmed, each irrigation district should have been able to support at least 500 people on corn agriculture alone.

Archaeologists have discussed a number of reasons behind these dramatic changes at the end of the pre-Classic and early Classic periods. Wood and McAllister (1984) maintain that these changes reflected the development of organizational complexity resulting from the population growth in lowland areas and the expansion of settlement into upland areas that could not sustain intensive exploitation. By contrast, archaeologists from SRI have argued that the changes evident in the early Classic period were related in part to environmental changes that initially made Tonto Basin more attractive for settlement and the immigration of people from surrounding areas (Ciolek-Torrello, Whittlesey, and Welch 1994; Van West and Altschul 1994; Whittlesey and Ciolek-Torrello 1992). They argued further that the changes evident in the Roosevelt and Gila phases were the result of stresses created by the influx of immigrants and later deteriorating environmental conditions (see also Clark and Vint 2004).

Although data derived from the CCP cannot resolve this issue, they are pertinent to the discussion. Wegener and Adams (see Chapter 5) suggest that the broadening of the subsistence base in the Classic period may signal a response to the overexploitation of local available artiodactyl populations as well as dietary stress, especially in the Lower Tonto Basin. Some support for this view is provided by the dental analysis. Lincoln-Babb (see Volume 2, Chapter 9) suggested that a high rate of enamel hypoplasia among the teeth of males in the CCP mortuary population is indicative of a less than optimum intake of protein. By contrast, based on their osteological analysis, Minturn and Heilman (see Volume 2, Chapter 8), believe that the individuals buried at this settlement were not highly stressed. Although the rate of pathology was high in the burial population at the Vegas Ruin, they suggest that, overall, the early

Classic period residents of CCP sites were healthy. The osteological indicators of infection, degenerative changes, porotic hyperostosis, and trauma in the CCP mortuary population were similar to those in burial populations from neighboring areas.

The widespread settlement system of the early Classic period came to an abrupt end sometime in the Roosevelt phase, when the numerous small Classic period farmsteads and hamlets like the Vegas Ruin and Crane site were abandoned. It is during this time that the VIV Ruin was rebuilt as a large, nucleated settlement on the ruins of an older compound and platform mound (Wood 2000, 2005). The entire population of the three localities could not have resettled at this small village, however. It is possible that residents of the Hardt Creek valley resettled at the Rye Creek Ruin. Regardless, a reduction in population in the area is suggested for the Gila phase. This reduction in population and aggregation into fewer settlements appears to have occurred throughout Tonto Basin (Clark and Vint 2004; Wood 2000). The place of platform mounds within most irrigation districts (the Meddler and Livingston districts at the eastern end of the Basin were abandoned by the Gila phase according to Wood [2005:137]) were taken by what Wood (2005) describes as house mound/conglomerated villages or caserones—massed room blocks and courtyards with elevated rooms superficially resembling multi-story pueblos, but with "upper story" rooms built on filled walled spaces. Although Wood (2005:137) does not include the VIV Ruin among his Gila phase conglomerated settlements, the presence of a massed room block with coursed stone masonry and Gila and Tonto Polychrome and Jeddito Black-on-yellow vessels (Mills and Mills 1975) clearly indicates a large Gila phase settlement.

Issues in Demography

At the outset of the project we identified several issues that we hoped to be able to address under the broader theme of demography. Briefly, these included an examination of settlement and populations trends from the pre-Classic through the Classic period, and an exploration of shifting patterns of ethnic and cultural affiliation within Tonto Basin, issues that have been at the center of debate for many years (Ciolek-Torrello, ed. 1987; Dean 2000; Doyel and Haury 1976; Elson, Gregory, et al. 1995; Elson et al. 1992; Whittlesey and Reid 1982; Wilcox 1979; Wood and McAllister 1980). Although the data from the CCP in and of themselves are limited in what they can offer in terms of new insights into these issues, they can contribute to the substantial body of available data. With this in mind, we offer a brief summary of these data and results here.

Households and Domestic Organization

Because of the recent publication of detailed examinations of domestic organization in the prehistoric Southwest (Ciolek-Torrello 2012; Ciolek-Torrello et al. 2000; Klucas et al. 1998; Whittlesey 2004), we provide only a brief introduction to the topic here. Following Wilk (1991), we view domestic organization as the way individual social groups interact with their natural, social, and political environment. For comparative purposes, we focus on the smallest of these social groups, the household, which we define as a task-oriented group whose activities can be divided among five broad categories: production, distribution, transmission, reproduction, and coresidence. (Wilk and Netting 1984). Production is defined as "human activity that procures or increases the value of resources" (Wilk and Netting 1984:7). Distribution is defined as those activities involved with moving materials from producers to consumers, including the consumption of goods and resources by the household itself. Transmission refers to those activities associated with the passing of wealth between generations. Reproduction is defined as activities associated with the rearing and enculturation of children. Finally, coresidence refers simply to the use of a common dwelling. Defining the domestic group in terms of activities rather than kin relationships affords a material reality that is amenable to archaeological investigation.

Although all domestic activities can be assigned to one of the five categories listed above, the composition of the groups responsible for them is not necessarily isomorphic (Ciolek-Torrello 1988; Ciolek-Torrello and Reid 1974; Klucas et al. 1998). For example, the basic unit as defined by coresidence may be a nuclear family. By contrast, the basic unit of production may be an extended family consisting of several nuclear families, each maintaining its own residence. Variability in the composition of these task-oriented groups through time and across space likely reflects different adaptive strategies that, in turn, reflect different needs as well as different physical and sociopolitical environments.

Several factors associated with the CCP sample limit the kinds of questions we can address concerning domestic organization. In terms of the temporal distribution of the sample, the Rock Jaw site is the only site with habitation features that dates to the pre-Classic period, although Feature 30 at the Crane site was also most likely a Sedentary period house based on its pithouse architecture and the earliest archaeomagnetic date option obtained from its hearth. The remaining habitation sites, the Crane site and the Vegas Ruin, as well as the field house at Site 404/2011, date to the early Classic period. The pre-Classic and the Classic period samples further differ in terms of site type, with the pre-Classic period sample limited to at most two farmsteads and the early Classic period sample encompassing two hamlets and a field house. This limits the kind of contribution the CCP data alone can make to our understanding of changes in prehistoric domestic organization in Tonto Basin. A second limiting factor, one that has been repeatedly evoked, concerns the effect of the ROW and modern disturbances on the extent and representativeness of our sample. Unknown portions of the Crane site and Vegas Ruin extend beyond the limits of the current investigations. Both were also impacted by the construction of SR 188. These conditions hamper the investigation of any questions requiring extensive spatial data. In spite of these caveats, an assessment of domestic organization across the pre-Classic to Classic period transition in Tonto Basin is possible, especially given the vast comparative database that is available.

Pit Houses, Compounds, and Room Blocks

As discussed in the previous section, archaeologists working in central Arizona have long been aware of the transition from the semi-subterranean pit houses of the pre-Classic period to the surface rooms that in part define Classic period domestic architecture. These architectural changes were also associated with changes in the arrangement of houses and the structure of the coresident group. Because detailed summaries of the implications of this transition in domestic organization have been presented elsewhere, (Ciolek-Torrello 2012; Ciolek-Torrello et al. 2000; Clark 1995a, 2004b; Klucas et al. 1998), only a brief discussion of the salient points is offered here. Of the five functional categories of the domestic unit, architectural data obviously inform primarily on coresidence. The size and function of structures, their spatial arrangement, and how they define interior and exterior space, however, provide important clues to the size and composition of the coresident group. Changes in these domestic arrangements in turn inform on changes in domestic organization.

In the pioneering work of Wilcox (Wilcox et al. 1981), the primary coresident unit during the pre-Classic period in the desert Southwest is generally seen as the "house cluster," or courtyard group. This term refers to a group of discrete and contemporaneous pit houses arranged around an open, exterior courtyard that is spatially defined by the pit houses themselves and that contains a variety of extramural features, such as pits and hearths. Trash areas and *hornos* are often observed on the peripheries of the courtyards. The house cluster and its associated extramural features are also often repeated across large sites, a fact that led Wilcox to argue that each house cluster, often referred to simply as the household, represented the smallest discrete domestic unit within pre-Classic period settlements,.

Based on its ubiquity, it is clear that the house cluster had an empirical reality during the pre-Classic period. It is unlikely, however, that the individuals occupying the house clusters served as the basic unit for all five of the functional categories defined for the household. Most individual moderate- to large-sized pit houses (those greater than 16 m^2 in interior area [Ciolek-Torrello et al. 2000]) served as the residence of a single nuclear family, which would be the minimal social unit as defined by coresidency. House clusters made up of two or more moderate- to large-sized houses, therefore, probably represent groups of nuclear families. Features such as *hornos* and hearths, which reflect production and consumption activities, were located in the courtyard areas or on the periphery of the house area, suggesting that these activities were engaged in communally by the individual coresident groups. In this model, the minimal social unit for these activities encompassed a number of coresident groups.

With the Classic period came a change in architecture and site structure characterized by the abandonment of pit houses in favor of aboveground houses with either cobble-adobe foundations or full masonry walls (see Clark 2004b). As illustrated by the Vegas Ruin, clusters of these rooms were generally enclosed by a foundation wall, whereas at the Crane site they were arranged into an L-shaped block of contiguous rooms. Within the walled compound at the Vegas Ruin and the partially bounded courtyard area at the Crane site were found many of the same extramural features associated with the courtyards of the pre-Classic period house clusters; the major exception was the presence of pedestals for granaries in the courtyards of early Classic period sites. Despite the superficial differences between pre-Classic period house clusters and Classic period residential groups, several archaeologists have suggested functional similarities between the two ways of organizing space (Clark 1995a, 2004b; Sires 1987). Variability in size and composition, however, suggests changes in the structure of the resident groups (Ciolek-Torrello et al. 2000; Klucas et al. 1998). Furthermore, during the pre-Classic period, control of extramural space was defined by the arrangement of the pit houses, whereas the Classic period settlements were often characterized by a more formal demarcation of space by compound walls.

The data from the CCP sites, however, do not lend themselves easily to this model of changing domestic structure, especially as it concerns the Sedentary period houses and the earlier component of the Vegas Ruin. Only a single house was occupied at any point of time in the Sedentary period Rock Jaw site and the pre-Classic period component of the Crane site. The first house, Feature 3, constructed at the Rock Jaw site, a pre-Classic period farmstead located near the Vegas Ruin, was a relatively large (21-m^2) pit house of formal construction that could have housed a nuclear family. It faced eastwards onto a work area with several extramural features. Feature 1 was a smaller house (15.0 m^2) built within the same pit, but with an entryway that opened to the west onto a second extramural activity area. This house was of the minimal size to house a nuclear family, but its formal construction and associated extramural features and refuse indicated a relatively permanent occupation. Feature 30 at the Crane site, was intermediate in size (18.0 m^2) between the two houses at the Rock Jaw site. Interestingly, two of the three Sedentary period houses in the CCP diverged from the eastward oriented pattern Clark (2004b) observed for the pre-Classic period sites in the TCAP. Feature 30 at the Crane site faced south and Feature 1 at the Rock Jaw site faced west. Only Feature 3 at the Rock Jaw site faced east. Although the sample is very small, the Sedentary period houses in the CCP area do not exhibit a consistent pattern in orientation or evidence for the development of any kind of clustering.

The portion of the earlier component of the Vegas Ruin within the ROW consists of five pit structures. Four of these structures were moderate- to large-sized houses, possessed well-defined walls and entryways (the probable entryway of one house was destroyed by a backhoe trench), and contained formal plastered hearths centered behind the entry. These are the hallmarks of a habitation structure that was probably occupied by an independent household. The fifth structure, Feature 17, was much smaller and less substantial in its construction, lacked the well-defined walls and entryways of the other structures, and possessed only an informal hearth that was simply scooped out of the native soil. Feature 17 may represent a temporary structure used by a fifth household or an ancillary structure associated with one or more of the households occupying the remodeled Feature 34. Feature 17 was located a short distance to the northeast of Feature 34 and appeared to be oriented to the latter, suggested the two houses were part of a small courtyard. Clark (2004b) identified a similar pattern of one or more large, formal habitations associated with a smaller, informally constructed ancillary structure in the TCAP project and other areas of Tonto Basin during the Colonial and Sedentary period. Like the pair of houses at the Vegas Ruin, some of the TCAP ancillary structures were located to the north or south of the larger habitation structure partially enclosing a courtyard area. For example, Clark (2004b:165) grouped the six Sacaton phase houses at Casa Escondidas into three pairs, each consisting of a large pit house and a smaller ancillary structure. In each pair, the habitation structure was oriented to the east and the ancillary structure was located to the north or south to face onto a common area. In the Ash Creek phase component of Tres Huerfanos, Locus 1, two large habitations were associated with a single ancillary structure. The spatial arrangement of TCAP ancillary structures was more variable, however, as some ancillary structures were in line with the larger habitation structures and others faced them (Clark 2004b:164). As in the case of the Vegas Ruin, the larger habitations all were oriented in an eastward direction with entryways generally parallel to one another.

As discussed above, the superpositioning of two of the structures, Features 19 and 99, and chronometric data and architectural variation suggest some time depth for the occupation at the Vegas Ruin. What is lacking, however, are structures arranged in such a way as to suggest the existence of a courtyard group, which is indicated by habitation structures either facing one another or with entryways arranged at an acute angle to one another, thus opening onto a shared area. All four of the habitation structures opened more or less directly toward the east. Features 34 and 17 are the best candidates for defining an extramural space. Miami phase, Features 99 and 179 may have been occupied contemporaneously as they are almost identical subrectangular structures built of post-reinforced adobe with large bulbous entryways. Although their entryways are parallel to one another, Feature 179 is set back behind Feature 99. Alternatively, Features 99 and one of the later houses built in Feature 34 may have been contemporaneously occupied. Both structures, however, face eastwards and their entryways do not fit the well-defined courtyard arrangement. Feature 19 appeared to be the latest constructed pit house at the Vegas Ruin. It was partially superimposed on Feature 99 and incorporated upright stones in the construction of the post-reinforced adobe walls (see discussion of architectural sequence in Clark [2004b:167]). It is possible that Feature 99 was occupied in concert with Feature 11 and the compound wall, Feature 1. The cobble-abode foundation construction of Feature 11 and attached compound wall represents one of the final stages in house construction in Tonto Basin (Clark 2004b:167), A series of radiocarbon and archaeomagnetic dates from Feature 11, however, suggest it could have been constructed in the Miami phase. If Features 11 and 99 were contemporaneous, they too do not form a typical courtyard group. An opening in the southwest corner of Feature 11 suggests its entryway faced west away from Feature 99. The attached partially walled space, Feature 54 also opens in this direction onto a granary pedestal, indicating an extramural work area west of the Feature 11 and away from any extramural area that might have been associated with Feature 99. The Feature 11 is a moderately large structure and could have housed a nuclear family, especially with the added area of Feature 54. Thus at most, only two houses were occupied at the same time at the Vegas Ruin (at least within the known portion of the site) and only two nuclear households may have been present at any one time. Even so, these households did not share a common area. Interestingly, the cobble-adobe-foundation structures at Site 404/2011 on Gold Creek represented a similar arrangement of a habitation area and adjoining partially enclosed area as Features 11/54 at the Vegas Ruin. Nevertheless, the extremely small size of the Gold Creek habitation (7 m^2, as opposed to 19.0 for Feature 11) indicates that the former was clearly too small to house even a nuclear household on a relatively permanent basis.

If we apply the model of domestic organization implied by the house cluster, the data from the Vegas Ruin suggest a different organizational structure than the typical Hohokam courtyard group in the Phoenix Basin. Recall that in this model, the minimal coresidence unit was a nuclear family occupying a single house. Several these coresidence groups had communal use of the courtyards defined by the entryways of their houses. In the case of the Vegas Ruin, however, the architectural data do not imply the same kind of cooperative arrangement that existed between the coresident groups. Rather, the arrangement at the Vegas Ruin implies that the coresident group—the nuclear household in this case—independently conducted all the previously defined domestic tasks.

The different organizational structure suggested by the distribution of houses at the Vegas Ruin can be emphasized through a comparison with the domestic organization implied by the site structure of the Roundup site (AZ U:3:337/456), a late pre-Classic period hamlet along Camp Creek on the western slope of the Mazatzal Mountains (Klucas and Woodson 1999). This site adheres to a more typical pre-Classic period Hohokam pattern, with several individual pit houses arranged with entryways at angles to one another and opening onto a common exterior courtyard. The presence of a small cemetery, several middens, and the superpositioning of architectural features at the Roundup site suggest an intensity of occupation significantly greater than that assumed for the pit-structure component of the Vegas Ruin.

The architectural data from the Crane site reflects an entirely different organizational system from the compound at the Vegas Ruin. Although both contained pit-structure and aboveground cobble-adobe-foundation components, the spatial organization evident in the structures at both sites is quite different. At the Vegas Ruin, the organization of the compound component appears to be a continuation of that evident during the pit-structure component. The Vegas Ruin compound appears to have housed a single household that, if it indeed consisted of only the single room and adjacent enclosure, consisted of a nuclear family. It is unknown if additional rooms were present on the eastern side of the compound which was removed by earlier highway construction. This independence of the nuclear family at the Vegas Ruin is also reflected in the spatial arrangements of the earlier pit structures (few of which could have been occupied contemporaneously), in which multiple structures were not arranged around an courtyard area but all faced eastward onto a much larger area—a pattern also represented in the contemporaneous TCAP sample of sites (see Clark 2004b). A similar-sized, if not smaller, compound is located a short distance to the west of the Vegas Ruin and outside the ROW. This compound may represent the residence of a second, independent nuclear household, although the two compounds may not have been occupied at the same time either.

A very different use of space is expressed architecturally during the Classic period occupation at the Crane site. Unlike the Vegas Ruin, the cobble-adobe-foundation architecture at the Crane site reflects a more puebloan-like use of space, with at least some of the rooms arranged in a linear block. These rooms appear to have opened onto a shared exterior courtyard space containing a number of extramural features, including two granaries. This implies a level of cooperation among individual domestic units quite different from that assumed to have existed among the residents of the Vegas Ruin. The poor preservation of the rooms and compound at the Crane site, however, precludes us from a more detailed discussion of the domestic organization at this site. Interestingly, the common courtyard area as defined by the granary pedestals is located west of the rooms, indicating a southwestward facing orientation for the courtyard. This orientation indicates another divergence from the pattern of pit houses at the Vegas Ruin, although it is consistent with the orientation of Features 11/54.

Comparison with the Classic period farmsteads and hamlets investigated by the FLEX project suggests that individual domestic units like hose at the Vegas Ruin may have continued to operate independently in the Roosevelt phase, and possibly into the early Gila phase. The FLEX project investigated two farmsteads and two hamlets. AZ U:3:250/1899 consisted of two rooms facing one another and enclosed within a compound wall. The site dated to the Roosevelt phase with possibility of continued occupation into the early Gila phase. A diversity of artifacts and a well-defined midden suggest a relatively intense and permanent occupation. Feature 1 was interpreted as a storage room (Cameron 1997f). Feature 2, a much larger room was not excavated as it was heavily vandalized, but it may have served as the habitation room in what is interpreted as a single-family residence. AZ U:3:235/206 consisted of two pairs of noncontemporaneous rooms without an enclosing compound wall. The rooms exhibited considerable remodeling and scavenging of construction materials by the later occupation. At least one habitation with three replastered hearths and one storage room with a number of granary pedestals and three unprepared hearths were present, although they were not occupied at the same time. Nevertheless, Cameron (1997f) infers that the site was occupied by only a single family.

The two hamlets each contained 10 rooms enclosed within compound walls. Habitation and storage rooms and courtyard areas were identified at both sites. The compound at Locus 1 at AZ U:3:232/1370 was subdivided into two discrete smaller compounds separated by a long open space or corridor. Each of these smaller compounds contained habitation and storage rooms and individual work areas, are inferred to have been occupied by a single household (Cameron 1997f). The spatial organization of AZ U:3:246/1895 is less clear due to vandalism, scavenging and prehistoric remodeling, but Cameron (1997f) infers that it too was occupied by at least two families. Two additional sites within the CCP sample provide an interesting comparison between the pre-Classic and Classic periods in terms of residence patterns. The Rock Jaw site, a, and Site 404/2011, the Classic period field house in the Gold

Creek locality, are characterized by single houses in use at any one time. Although two discrete structures were identified at the Rock Jaw site, it is clear from their relative stratigraphic positions that one completely replaced the other. The size of the structures at both sites suggest that they were occupied by at most a single nuclear family. One of the interpretations of the Classic period field house posits that such settlements served as temporary residences for portions of a household. In spite of the superficial architectural similarities between the two sites, other lines of evidence suggest very different functions. At the Rock Jaw site, both houses were relatively large with well-prepared floors and interior hearths. These architectural features were accompanied by a large and diverse artifact assemblage and a variety of extramural pits and thermal features. By contrast, Site 404/2011 consisted of a very small cobble-adobe-foundation room with an attached three-sided cobble-adobe-foundation enclosure and low-density artifact scatter. There was no evidence of a prepared floor, interior hearth, or extramural features. This suggests that a much more diverse set of activities were performed by a complete household at the Rock Jaw site, and that Site 404/2011 could not have been used on anything more than a short-term seasonal basis. These observations are consistent with long-held interpretations of the functions of pre-Classic period farmsteads and Classic period field houses.

The domestic behavior implied by the presence of limited-activity field houses such as Site 404/2011 is that for a portion of the year, all or some of the domestic unit moved from the primary settlement and established temporary residences that presumably were closer to a specific set of economic activities. These activities are generally assumed to relate to agriculture, although intensive gathering of wild resources cannot be ruled out. This seasonal fissioning of household members for task-specific reasons, often resulting from temporal or spatial incompatibility within a set of activities, is most often found in societies with extended-family households (Pasternak et al. 1976). Although we cannot precisely date the age of field houses such as Site 404/2011, their use is clearly more consistent with the aggregated settlements of the latter part of the Roosevelt phase and the Gila phase rather than the dispersed Sedentary period and Miami phase farmsteads (Ciolek-Torrello 1987d; Moore 1976). Cameron (1997f), however, suggested greater diversity in the function of field houses than indicated by this model, although their occupations are consistently short-term or seasonal with evidence of only a limited set of domestic activities.

Looking beyond simple site-function questions, however, these limited data suggest different models of domestic organization between the pre-Classic and early phases of the Classic periods versus the later Classic period. The pattern reflected by the Rock Jaw site and the pit houses at the Vegas Ruin has the nuclear family fulfilling most, if not all, of the functions of the household, whereas multi-family or extended family domestic groups sharing storage facilities, such as granaries, outdoor work areas, and presumably family tombs are apparent at the later Crane site. Small, multi-room compounds like the Crane site, which probably served as the residences of extended families, became common by the Roosevelt phase, along with much larger aggregated compounds that housed many families (Clark 2004b). These compounds contained an increasing diversity of structures including specialized storage rooms. Clark (2004b:181) noted a general trend towards the end of the Roosevelt phase towards a greater emphasis on fixed storage facilities as indicated by the construction of these specialized storage rooms and one to two fixed granaries per household. This trend, which may reflect a concern at the end of the thirteenth century for a long-term food supply, continued into the Gila phase, as indicated by the large complex of storage rooms with granaries and massive storage vessels at the Schoolhouse Point site (Lindauer 1996).

Although the Crane site reflects the growth of extended family compounds in the latter part of the Roosevelt phase, its linear configuration of contiguous rooms is unusual in Tonto Basin. Based on TCAP and other data, Clark (2004b:181) suggested that most of Classic period compounds developed from earlier Sedentary period and Miami phase settlements consisting of detached houses. Essentially, Classic period compounds represented pre-Classic period house clusters enclosed within compound walls (for a similar sequence of architectural development in the Phoenix Basin, see Sires 1987).

Pre-Classic versus Classic Period Settlement

One area of debate about demographic trends in Tonto Basin concerns apparent changes in settlement intensity and population concurrent with the transition to the Classic period, reflected in both a greater diversity of site types and the growth of a number of large settlements. This pattern is readily apparent in the CCP area, where sites with components dating to the Classic period dominate the small sample of sites. Whereas some archaeologists attribute these changes to the emergence of a hierarchically organized socioeconomic and political system (Rice 1985, 1990a; Wood 1989), others interpret these data as reflecting a short-term occupation of sites with few occupied contemporaneously (Whittlesey and Ciolek-Torrello 1992).

Several lines of evidence suggest that, at least for the CCP sample, the latter of these interpretations is the most parsimonious. As discussed in Chapter 7, the apparent discrepancy between the small number of houses at the Vegas Ruin and the large number of individuals interred there suggests a low-intensity, but long-term occupation of the site during the early Classic period. Clark and Vint (2004) drew similar conclusions from the large number of burials found at the small TCAP compounds. It is possible, however, that people from nearby farmsteads or other settlements were brought to these sites as burials are rare at most other small settlements. For example, only 10 burials were recovered from a much larger sample of sites and habitation features investigated by the FLEX project (Nagy 1997). Certain sites such as the Vegas Ruin reported here, Los Tortugas, Granary Row, and Los Hermanos investigated by TCAP, Tapia del Cerrito investigated by the Ash Creek Project (see Hohmann 1985), and the Mazatzal Ruin investigated by the Ord Mine Project (Ciolek-Torrello [ed.] 1987) may have been considered special sites where people from surrounding settlements brought their deceased relatives for burial. These small settlements all stand out for the unusual number and elaborate treatment of burials.

Archaeobotanical data suggest that the occupation of the Vegas Ruin may have been seasonal, with occupation limited to the warm seasons. These data are consistent with a pattern of intermittent, short-term occupation of sites repeatedly occupied for a number of years, or briefly abandoned and then resettled. The Rock Jaw site, Crane site, and Vegas Ruin all show evidence of extended use that may have continued for several generations. Sites in the TCAP and FLEX project areas, however, evidence even longer-term occupations with a continuous sequence of occupation from Sedentary period farmsteads to Classic period compounds that reflect many generations of use and reuse.

Despite this pattern of settlement, tremendous population growth is evident in the early Classic period in the area surrounding the CCP (compare Figures 76 and 77). Larger settlements such as hamlets become much more common, although the bulk of the population may have continued to reside in single-family farmsteads and even smaller field houses at least during part of the year. Furthermore, the presence of complete suites of site types in a variety of locales suggests the development of a number of semi-independent local systems. This pattern of population growth may have terminated in the Gila phase, when the VIV Ruin was the only major habitation site that was still occupied, although this was reconstructed and was likely the largest settlement ever occupied in this part of Tonto Basin. Similar patterns of growth in the early Classic period are evident in the TCAP and FLEX project areas, although these areas were abandoned by the Gila phase and only limited evidence of Gila phase use is evident (Clark 2004b:183). According to Clark, the entire Mazatzal Piedmont and western terrace of Tonto Creek were abandoned by the Gila phase with settlement restricted to Cline Terrace, Oak Creek, VIV, Dresden and Trinity on eastern terrace and foothills of the Sierra Ancha (see also Wood 2000:136). Evidence of widespread burning in TCAP compounds and the presence of extensive floor assemblages from rooms in these compounds suggests catastrophic abandonment at the end of the Roosevelt phase and a time of conflict or threat of conflict (Clark 2004b:184). Significantly, no evidence of catastrophic abandonment is evident at the Crane site or Vegas Ruin, suggesting that the residents of the northernmost part of the Lower Basin were spared or insulated from the events that overtook their neighbors.

Mortuary Behavior, Land Tenure, and Social Meaning

An additional line of evidence that can be exploited for the investigation of domestic organization is the spatial distribution of the burials. As was discussed in Chapter 7 of this volume, data from the Vegas Ruin suggest the existence of burial "plots" whose function was recognized and maintained through time. This interpretation is based on the clustering of the burials into several spatially discrete clusters, occasionally resulting in earlier burials being disturbed by later interments. Although the bioarchaeological data are somewhat equivocal, the distribution of some genetic traits among the burials, specifically pedal symphalangism, suggests that the burial groupings reflect familial relationships, at least to some degree (see Volume 2, Chapter 8). The distribution of other traits, such as Klippel-Feil syndrome, suggests a more general genetic relatedness among the entire burial population. Although the incidence of Klippel-Feil syndrome among prehistoric populations of the Southwest is unknown, this syndrome is estimated to occur in 1 in 40,000 to 42,000 newborns worldwide in modern populations (https://ghr.nlm.nih.gov/condition/klippel-feil-syndrome#definition, accessed December 16, 2016). Klippel-Feil syndrome was also noted at Schoolhouse Point in the Lower Tonto Basin (see Volume 2, Chapter 8) and a high incidence of this syndrome was observed at the Carter Ranch Pueblo in the Little Colorado River valley (Danforth et al. 1994). Danforth et al. (1994) suggest that high incidence of this and other genetic abnormalities may reflect genetic isolation of small resident populations.

If the burial groups at the Vegas Ruin do indeed reflect a segregation along familial lines, a number of conditions are implied that speak to the nature of domestic organization at this place and time. In terms of how these data and assumptions can inform on domestic organization, the cemetery at the Vegas Ruin appears to attest to the maintenance and expression of both communal and familial groups. It has been long been argued that the physical location of burials and cemeteries on the landscape carries with it social meaning (Goldstein 1980; Kuijt 2001; Pearson 1999; Saxe 1971). This claim is supported by several morphological traits with a strong genetic component observed in the Vegas Ruin sample. The general relatedness of the entire burial population is suggested by the distribution of individuals expressing the rare Klippel-Feil syndrome, who were found in two of the discrete burial groups. These data suggest that the cemetery may reflect the presence of a small genetically isolated population with limited interaction with outside populations, and, as such limited opportunities for finding mates. Within the larger burial group, however, are a number of subgroups, also based on familial relationships that at some level retained a separate and distinct identity. This separate identity is expressed in the repeated use of specific interment areas, such as the burial groups and burial plots. The division of the burial ground into distinct burial groups and plots further suggests the presence of different corporate groups and social identities. It is not unreasonable to speculate that this different social identities extended to other areas of the society as well, such as rights to land and other resources.

Ethnic Identity and the CCP Project

With the renewed focus on migration studies in archaeological investigations of the Americas comes the desire and need to identify the ethnic identity of archaeologically attested populations. Because ethnicity is largely a self-defined attribute, this may not be possible in the true sense of the word. What can be done, however, is to identify those attributes that show similarities to other archaeologically defined cultures, which can then be used to assume likely affiliation. Several lines of evidence are useful in this regard, the most dependable of which are derived from an examination of the physical remains of the individuals themselves. Fortunately, the CCP project produced a relatively large burial population that, in spite of the restrictions on destructive analysis, has provided useful data on this issue. In Volume 2, Chapter 9, Lorrie Lincoln-Babb argued that, based on dental morphology, both the CCP and TCAP burial populations have their closest affinity with Mogollon burial populations from Grasshopper and Point of Pines. This stands in stark contrast to data from Classic period sites in the southern part of Tonto Basin that, also based on dental morphology, appear to be more similar to Hohokam populations in the Phoenix Basin. These data suggest a different population residing in the upper portion of Tonto Basin during the early Classic period when compared with those from the vicinity of modern Theodore Roosevelt Lake, with the northern group more closely tied to populations to the north and east compared with a more southwest focus of those in the Lower Basin.

Although certainly not as definitive as the skeletal data, a number of additional lines of archaeological data support this assertion for a more Mogollon focus for the CCP project sites. Hohokam Buff Ware sherds, although recovered from several of the pre-Classic period CCP sites, were found in much lower numbers than they were at contemporary sites in the nearby Sycamore Creek valley, which was closely affiliated with the Phoenix Basin during this time (Ciolek-Torrello et al. 2005). By contrast, Mogollon and Anasazi ceramics were much more common in pre-Classic period CCP sites than at contemporary Sycamore Creek sites, where they were virtually nonexistant, and there, frequencies increased greatly during the early Classic period. Further, the pit-structure component at the Vegas Ruin does not conform to the structural pattern characteristic of Hohokam sites and, specifically, to the creation of discrete extramural areas defined by the relative positions of the houses. The exclusive orientation of the habitation structures to the east is also similar to the early Mogollon pattern (see Ciolek-Torrello 1998; Gregory 1995). These data, along with the bioarchaeological data discussed above, suggest that Tonto Basin was occupied through much of its history by an ethnically mixed population of individuals with ties to both the Hohokam to the south and west, and the Mogollon and Puebloan peoples to the north and east.

Exchange, Commerce, and Interaction

A variety of data pertinent to this research issue were obtained during the CCP. Evidence for long-distance exchange included nonlocal painted ceramics; exotic lithic materials, such as turquoise, steatite, and obsidian; and shell artifacts from the Gulf of California and Pacific coast. Other evidence for local commerce and interaction includes ceramic petrography and the use of plant and animal resources.

Painted Ceramics and Other Exotic Ceramic Wares

The painted ceramics from the CCP sites present a record of long-distance exchange and interaction similar to that of other areas of central Arizona. For example, investigations in the Sycamore Creek valley, located on the western flanks of the Mazatzal Mountains southwest of the Cottonwood Creek locality, found evidence of pre-Classic period farmsteads whose residents apparently interacted intensively with the Phoenix Basin Hohokam. The residents of Sycamore Creek valley produced little of their own pottery and obtained virtually all of their painted pottery from the Phoenix Basin (Green 1990; Montgomery et al. 2003) as well as a large proportion of their unpainted pottery (Whittlesey and Montgomery 2009). Phoenix Basin Buff Ware ceramics occurred in high frequencies (7.6–28.8 percent) in these pre-Classic period Sycamore Creek farmsteads (Table 90), approaching frequencies in Phoenix Basin sites themselves and testifying to the high degree of interaction between this small upland valley and the much

Table 90. Proportion of Nonlocal Ceramic Wares in Ceramic Collections from CCP Sites, by Time Period

Wares	Pre-Classic Period						Classic Period			
	Site									
	41/583		Rock Jaw (407/2014)		408/2015		Vegas Ruin (405/2012)		Crane (410/2017)	
	n	%	n	%	n	%	n	%	n	%
Phoenix Basin										
Hohokam Buff Ware	50	2.6	13	1.0	57	4.4	5	0.1	13	0.2
Wingfield Plain	19	1.0	196	14.9	32	2.5	3	—	—	—
Subtotal	69	3.6	209	15.9	89	6.9	8	0.1	13	0.2
Anasazi-Mogollon										
Cibola White Ware	5	0.3	3	0.2	10	0.8	280	4.0	103	1.2
Little Colorado White Ware	—	—	20	1.5	2	0.2	214	3.0	25	0.3
Tusayan White Ware	36	1.9	4	0.3	9	0.7	5	0.1	3	—
Indeterminate White Ware	—	—	10	0.8	5	0.4	2	—	12	0.1
San Juan Red Ware	—	—	—	—	2	0.2	1	—	—	—
Reserve Series	—	—	—	—	—	—	12	0.2	2	—
Other	—	—	—	—	—	—	4	0.1	6	0.1
Subtotal	41	2.2	37	2.8	28	2.2	518	7.3	151	1.8
Other ceramic wares	1,784	94.2	1,068	81.3	1,170	90.9	6,547	92.6	8,338	98.1
Total	1,894	100.0	1,314	100.0	1,287	100.0	7,073	100.0	8,502	100.0

Note: Percentages are based on proportion of nonlocal wares to all ceramic wares from each site.

larger Phoenix Basin. Stone censers and palettes and shell ornaments, common in mortuary contexts at Sycamore Creek sites, may also have been obtained through exchange with the Phoenix Basin. By contrast, only trace frequencies of pottery in pre-Classic period Sycamore Creek sites was derived from the Mogollon or Anasazi regions, suggesting little to no interaction and exchange with these other areas. Vanderpot (2009) suggested that the Sycamore Creek people also may have exchanged agave and deer products with the Phoenix Basin Hohokam to obtain these ceramics and mortuary artifacts. This high level of interaction between the pre-Classic period residents of Sycamore Creek valley and the Phoenix Basin, which is also reflected in domestic organization and mortuary patterns (Ciolek-Torrello et al. 2009), indicates that people living on the western flanks of the Mazatzal Mountains were well integrated into the Hohokam regional system that held sway over most of central and southern Arizona during the pre-Classic period (Wilcox 1979). In fact, pre-Classic period settlements in Sycamore Creek were virtually indistinguishable in material culture, domestic organization, and mortuary patterns from contemporaneous settlements in the Phoenix Basin (Ciolek-Torello and Heilen 2016). During the pre-Classic period, the residents of the CCP area, located on the opposite eastern flanks of the Mazatzal Mountains, also obtained most of their painted ceramics from the Phoenix Basin. Their level of interaction with the Phoenix Basin, however, was not nearly as intensive as in the Sycamore Creek valley, and pre-Classic period residents of CCP sites may have interacted almost as much with the Anasazi and Mogollon regions. Pre-Classic period CCP sites contain only 1.0–4.4 percent Hohokam Buff Ware and 1.0–2.5 percent Wingfield Plain ceramics, although almost 15 percent of the ceramic collection from the Rock Jaw site consisted of Wingfield Plain (Table 91). Furthermore, in contrast to the Sycamore Creek sites, pre-Classic period CCP sites exhibit frequencies of white wares and other ceramic wares from Anasazi and Mogollon areas that are similar or only slightly lower (2.2–2.8 percent) than the Buff Ware, suggesting only a slightly lower level of interaction with these latter regions.

Dramatic changes are again evident in ceramic vessel exchange patterns during the Classic period. As in the Sycamore Creek valley and many other areas of Tonto Basin and central Arizona, Hohokam Buff Ware ceramics and Wingfield Plain virtually disappear from the ceramic collections of CCP sites. The small early Classic period sites in the CCP area differ from similar contemporaneous sites in the Sycamore Creek valley when one considers the evidence for increasing interaction with Mogollon and Anasazi areas. In the Sycamore Creek valley, for example, frequencies of Classic period white wares and other imported ceramics (other than Tonto Basin ceramics) are present in frequencies similar to pre-Classic period white wares, suggesting little change in this sphere of interaction. To a certain extent the same pattern is evident at the Crane site, at which 1.8 percent of the ceramics derive from Mogollon and Anasazi areas, a number comparable to the 2.2 to 2.8 percent Mogollon and Anasazi ceramics found in the pre-Classic period sites in the CCP area. Over 7 percent of the ceramics from the Vegas Ruin, however, come from these outside regions, reflecting an almost threefold increase in white wares and other Mogollon and Anasazi ceramics over pre-Classic period contexts.

We interpret these changes to reflect a major change in the nature of interaction with the Phoenix Basin, an event that is coincident with the collapse of the pre-Classic period Hohokam regional system, which Wilcox (1979; see also Abbott et al. 2007) argued was centered around ballcourts. Classic period Hohokam culture in the Phoenix Basin was reorganized around more inwardly focused platform mound communities and a great expansion in irrigation systems (Ciolek-Torrello 1998, 2009, 2012). Classic period Hohokam society in the Phoenix Basin had a very different relationship with surrounding areas than its predecessors. As peripheral areas such as the Agua Fria, New River, Lower Verde, and Gila Buttes areas were abandoned by the Hohokam, many of these people migrated back to the Phoenix Basin joining new irrigation communities being established in the Scottsdale and Mesa areas (Abbott 2000; Ciolek-Torrello 1998; Ciolek-Torello and Heilen 2016). The relationships between the Classic period Phoenix Basin residents and these and other neighboring areas may have become hostile (Abbott and Lack 2013; Ciolek-Torrello 1998; Wilcox et al. 2001). Interestingly, unlike many of the Phoenix Basin's Classic period neighbors, many of the residents Tonto Basin may have been on friendly terms with the Phoenix Basin as they were organized into similar, albeit much smaller, irrigation communities focused around platform mounds, at least during the Roosevelt phase (Wood 2000). Nevertheless, it cannot be ignored that Tonto Basin platform mounds were much more variable in form and construction than their Phoenix Basin counterparts (Dean 2000; Whittlesey and Ciolek-Torrello 1992) and that this variability reflected much more than availability of local building materials.

While the Classic period occupants of Tonto Basin may have emulated their Phoenix Basin contemporaries in organization and, perhaps, political structure, at least during the Roosevelt phase, it is equally clear that the Classic period residents of Tonto Basin came increasingly under the influence of the Western Pueblo tradition that began to sweep across the mountains and valleys of central Arizona as early as A.D. 1000. The nature of this influence, however, is unclear. Clark (1995b, 2001) (see also Clark and Vint 2004) has argued for the presence of substantial migration of Puebloan people into portions of Tonto Basin based on variations in architecture and domestic arrangements, primarily the presence of blocks of contiguous rooms in the manner of pueblos. Wood (2000, 2005) has vehemently, and correctly, argued, however, that there is little evidence for direct immigration of Anasazi people into Tonto Basin

Table 91. Nonlocal Ceramic Wares in Sycamore Creek Valley Sites, by Time Period

Wares	Pre-Classic Period										Classic Period	
	AZ U:3:244/175[a]		AZ U:3:337/456[a]		AZ U:3:341/461[a]		AZ U:3:83/412[b]		AZ U:3:87/411[b]		AZ U:3:304/567[a]	
	n	%	n	%	n	%	n	%	n	%	n	%
Hohokam Buff Ware	291	20.4	4,045	28.8	453	7.6	1,190	10.0	981	27.4	6	0.4
Cibola White Ware	—	—	8	0.1	—	—	—	—	—	—	—	—
Little Colorado White Ware	—	—	—	—	—	—	—	—	—	—	4	0.3
Tusayan White Ware	—	—	—	—	2	—	—	—	—	—	—	—
Mogollon Brown Ware	—	—	—	—	—	—	—	—	—	—	1	0.1
Other ceramic wares	1,137	79.6	9,998	71.2	5,507	92.4	10,716	90.0	2,602	72.6	1,417	99.2
Total, all ceramic wares	1,428	100.0	14,051	100.0	5,962	100.0	11,906	100.0	3,583	100.0	1,428	100.0

[a] Klucas et al. 2003:349–425.
[b] Howard 1990.

as is evident at the Maverick Mountain phase of Point of Pines (Haury 1958), Goat Hill (Woodson 1995), and the Reeve Ruin (Di Peso 1958) (but see Dean [2000:13] for a contrasting view). Wood pointed out that no kivas or mealing bins have been found in Tonto Basin sites and that the replacement of courtyard groups by compounds, cremations by inhumations, and buffware by Roosevelt Red Ware and polished red wares reflect typical Classic period Hohokam patterns of the Phoenix Basin. He also downplayed the importance of Western Pueblo ceramics such as White Mountain Redwares, which are common in Classic period contexts in the southeastern Tonto Basin and Globe-Miami areas. Overall, Wood denied the importance of Western Pueblo influence in the Classic period and, building upon the arguments of Doyel (1976b) and Rice (1990c), he argued that the Salado culture of the Classic period Tonto Basin was simply a local variant of Classic period Hohokam culture in the Phoenix Basin.

Although there may have been no direct immigration of Anasazi people into Tonto Basin, Wood's perspective of the Classic period events in Tonto Basin and Central Arizona makes no distinction between Anasazi and Mogollon cultures. Wood (2000) has gone so far as to replace the Mogollon culture of central Arizona with what he terms the Central Arizona Tradition or Anchan tradition, which he admittedly describes as an enigmatic group that lacks a better term. Wood (2000) also includes the Sinagua within the broader Central Arizona Tradition category, although most Sinaguan archaeologists consider the early people of the Sinagua region as a Mogollon variant (Pilles 1976). In developing the Central Arizona Tradition concept, Wood fails to recognize that prior to A.D. 1000, Mogollon culture was completely distinct from Anasazi culture and was characterized by small settlements made up of non-descript, generally east-facing pit houses, often with a much larger communal house, plain and red ware pottery, and primarily inhumation burial although primary cremation burials were common. Many of these attributes were shared with the earliest Hohokam settlements (Ciolek-Torrello, ed. 1998). Importantly, as the Hohokam regional system was in full swing in the pre-Classic period, Hohokam traders and settlers ventured deep into the Mogollon region, heavily influencing the local Mogollon culture. Perhaps one of the areas of greatest Hohokam-Mogollon interaction was in Tonto Basin, although significant Hohokam settlement has been identified as far east as the Whiteriver area of the Mogollon highlands (Ciolek-Torello and Halbirt 2013).

Tremendous changes took place in northern Southwest beginning with the demise of Chacoan culture and ending with the abandonment of the 4-corners area as Anasazi people migrated to riverine areas such as the Rio Grande and Little Colorado areas. This was not a single event but a process that took place over a period of several hundred years. Nevertheless, it set in motion a series of sweeping demographic shifts and cultural changes—a chain reaction—that affected the entire Southwest. Was there a mass Anasazi invasion of Mogollon territory or movement of small Anasazi groups like those found at Point of Pines and Goat Hill? It was more likely the latter. More important was a generally south and westward movement of Mogollon people from north of the Mogollon Rim and Little Colorado area down to the river valleys below the Rim, perhaps pushed out of their homelands by Anasazi. It is these people together with small groups of Anasazi who moved into the Mogollon Rim region and settled alongside some of the original residents and built large pueblos such as the Granite Basin Ruin, Q-Ranch, Grasshopper, Kinishba, and Tundastusa in previously underpopulated areas (Reid 1989, 1998). It is this transformation of Mogollon culture from small pit house settlements into large pueblo communities that led Reed (1948) to develop the concept of the Western Pueblo complex as distinct from both earlier Mogollon culture and contemporaneous Anasazi culture. Although the Western Pueblo people incorporated many elements of Anasazi culture, many other traditional Mogollon elements were retained such as the manufacture of brown and redware pottery, including the new polychrome White Mountain Red and Roosevelt Red, and domestic arrangements. For example, Anasazi pueblos are occupied by large extended households that compartmentalize domestic space into a number of small, specialized rooms with several households sharing storage and ceremonial rooms (Ciolek-Torello et al. 2014; Lightfoot 1994). By contrast, Western Pueblo settlements like Grasshopper, contain many small households that conduct all their domestic activities in a single large room (Ciolek-Torrello 1985) that reflects the tradition of the single-family pit house.

It is such Western Pueblo people, acculturated to varying degrees by Anasazi culture, who may have appeared in small groups in Tonto Basin in the Classic period. On the one hand, the presence of room block architecture in several Tonto Basin sites cited by Clark as evidence for Puebloan immigration do not reflect the unit type Anasazi intrusion seen at Point of Pines and sites of southeastern Arizona, they do suggest the presence of people with a different concept of domestic organization than the native residents of Tonto Basin. Admittedly, mealing bins are not found in these "immigrant" sites, but they don't occur at the Reeve Ruin either. Slab-lined hearths, however, do occur in some sites (Clark 2004b; Mills and Mills 1975) and suggest the presence of Puebloan immigrants, or at the least, as Wood admits, Puebloan wives, who might have been brought to Tonto Basin. On the other hand, the multistory, apartment-like arrangement of rooms and half-T-shaped doorways within the Upper and Lower Ruins of Tonto National Monument (Steen et al. 1962), let alone building such structures in a cliff face, are completely foreign to the Hohokam compound or courtyard-style house arrangements and probably represent the best example of a Western Pueblo unit intrusion in Tonto Basin. Similar cliff dwellings occur in the Coon Creek and Cherry Creek areas southeast of Tonto Basin and are recognized as a Gila phase occupation by Western Pueblo people in an area previously occupied by Tonto Basin Salado (Lange and Ciolek-Torrello 2006).

As Wood (2000) suggested, what we consider to be mixed Mogollon-Hohokam populations from the Payson area, eastern Sierra Ancha, and Cherry Creek area may have contributed to population growth in Tonto Basin proper as they were pushed out of their homelands by this Western Pueblo expansion. The abandonment of the Payson area, much of the central Sierra Ancha, and Lower Cherry Creek (Ciolek-Torrello and Lange 2006) appears to reflect the pattern of abandoned no-man's lands lined with fortified sites between the Classic period Hohokam and their neighbors (Ciolek-Torrello 1998).

As in the case of the sub-Mogollon Rim region (Longacre 1975; Reid 1989, 1998), the population growth of the Classic period in Tonto Basin could not have been realized from natural expansion of resident populations through childbirth. Some degree of immigration was necessary. Without precise estimates of that population, however, the role of immigration cannot be calculated. Nevertheless, immigration of Western Pueblo or peripheral Hohokam-Mogollon groups is not the only force that shaped Salado culture in Tonto Basin. The well-documented and widespread regional environmental changes and population movements that characterized the end of the Sedentary period and early Classic period undoubtedly had a major impact on economic and social relationships. Destabilization resulting from these changes would have required the development of new ways of economic and social interaction with other groups and communities and integrating immigrants into established communities (Dean 2000:12). A new ideological system such as the Southwestern (Crown 1994) or Salado Cult (Ciolek-Torrello 1987c) could have been adopted to deal with these problems. As Dean (2000:12) pointed out, "the existence of such a system, with its iconography expressed on portable or easily replicated items (pots), could well explain the rapid geographical spread of the ceramic styles emblematic of regional Salado…" This iconography, along with associated mortuary patterns, may have come in the wake of the tidal wave of change that impacted the people of the mountains and deserts of central and southern Arizona and may account for many of the similarities between the Classic period Hohokam in the Phoenix Basin, Tonto Basin Salado, and the Western Pueblo communities in central Arizona. However, the Salado Cult was not adopted by everyone. Dean (2000:12) suggested that the Katsina Cult and its associated Jeddito Yellow Ware ceramics and design styles represented an alternative religious system that spread across the northern Southwest and even, to a limited degree, into the Tonto arm of Tonto Basin. The Katsina Cult became closely associated with kivas, which may explain why the latter were not built in areas where the Salado Cult was most dominant.

Ceramic Petrography

Ceramic petrography has often been used to determine the source of manufacture for ceramic products in central Arizona. Such studies can inform on probable locations for ceramic production and the diversity of source areas within a region. Hill and Beck (see Volume 2, Chapter 3) conducted a petrographic study of brown ware, red ware, and corrugated ceramics that included a variety of different types of vessel functions, as well as sand and clay samples from the CCP area. They identified four ceramic paste groups based on temper inclusions among the various types of samples. The ceramic types were not equally distributed among these four groups, suggesting that different ceramic types were produced with tempering material from different areas.

For example, Salado Red Corrugated ceramics were almost entirely assigned to Paste Group A or B, which were tempered with diabase sands. Rock inclusions in Paste Groups A and B were probably from the Armer, Cline, or Hackberry petrofacies in the Sierra Ancha Mountains located east and southeast of the CCP area. By contrast, other red ware samples almost all belong to Paste Group D. Those with granitic inclusions probably derive from the Ash petrofacies located in the Mazatzal Mountains just south of the CCP area. Red wares with volcanic, metamorphic, and/or sedimentary inclusions may have come from more distant sources in the Pinto or Wildcat-Poison Terrace petrofacies in the Lower Tonto Basin, although similar sources exist near the CCP area. The presence of clays with similar inclusions to Paste Group D in CCP sites suggests to Hill and Beck that at least some of the Paste Group D ceramics were probably made by residents of CCP sites. Although a predominance of red ware ceramics were assigned to Group D, some brown ware, brown corrugated, and Salado Red ceramics were also assigned to this group, indicating that some vessels of all four ceramic types were made locally. These samples also included most of the different types of vessel functions examined in the study.

We can conclude from this evidence that the prehistoric residents of the CCP area were able to make a wide variety of ceramic and vessel types. They also obtained similar ceramics from nearby areas.

Other Artifactual Materials

In their analysis of stone tools and materials from CCP sites, Wegener et al. (see Volume 2, Chapter 4) conclude that prehistoric people of the CCP area relied primarily on locally available materials to meet their needs for stone tools and ornaments. Nonlocal materials, such as obsidian, turquoise, and steatite, were used only occasionally. Argillite, which was easily accessible to prehistoric residents of the CCP area in the Upper Tonto Basin, was also used for the manufacture of ornaments. Of the five projectile points made of obsidian, three were derived from the relatively distant Government Mountain source near Flagstaff, and only one came from the Superior source in the Globe-Miami highlands at the southern end of Tonto Basin. This pattern of obsidian use, however, is typical of Tonto Basin lithic collections.

A small collection of shell, primarily from mortuary contexts, was also collected from CCP sites. According to Vokes (see Volume 2, Chapter 6) most of the shell artifacts were probably acquired as finished ornaments. There was only limited evidence for local production, which probably represented only the reworking of broken ornaments. Vokes concludes that the pre-Classic period residents of the CCP sites were actively connected with the exchange networks associated with the Hohokam regional system. Through such established networks, Tonto Basin people were able to acquire shell artifacts, which ultimately derived from the Gulf of California. As in the case of the other material-culture classes, Vokes identifies a shift in the shell artifact forms and species utilized in the early Classic period collections from CCP sites. Similar changes in assemblage composition are evident in other collections from Tonto Basin and Vokes suggests that they may represent an important shift in exchange networks and economic alignments in Tonto Basin.

Closing Thoughts

As we have argued throughout this volume, the value of the CCP sites exceeds this small collection of archaeological remains. As one of the last links in a series of ADOT-sponsored projects, they have provided us with an opportunity to address a number of important unresolved issues in the prehistory of Tonto Basin engendered by the vast body of recently acquired archaeological data. Reflecting the nature of the CCP sample, we have focused much of our synthetic efforts on an examination of the transition from the pre-Classic period to the Classic period, one of the most important events in the prehistory of Tonto Basin and central Arizona. This time encompassed a shift in occupation from small, scattered farming settlements that engaged in long-range, but limited interaction with neighboring culture areas, to what appears to have been an entirely different cultural and economic system. By the end of the transition, the population had grown dramatically. Settlements and communities existed in virtually every corner of the basin where farming was possible.

Using data from the CCP and other projects, we have refined the timing of the transition, which is likely to have taken place during the early- to mid-twelfth century A.D. This corresponds to the Miami phase, not the Ash Creek phase as has been suggested in the most recent accepted chronology. If the Ash Creek phase has any validity, it should replace the Sacaton phase as the local Tonto Basin manifestation of the Sedentary period. Through an examination of architecture, ceramics and other classes of material culture, subsistence, and settlement strategies, we can now define the Miami phase as a legitimate cultural construct that preceded the Roosevelt phase and represents the beginning of many cultural changes that took place in the Classic period. Our examination of the subsistence data from the CCP and other recent projects in Tonto Basin suggest a transition from relatively small sedentary farming settlements toward a more diverse system characterized by specialized sites, a tremendous expansion of dryland farming, and an emphasis on the cultivation of warm-season plants such as maize and cotton. Mortuary patterns and osteological analyses are consistent with recent suggestions that Tonto Basin was a cultural and biological melting pot occupied by people with ancient Mogollon, Hohokam, and possibly Anasazi roots. Finally, our examination of nonlocal ceramics and other exotic materials suggests that the subsistence and social changes evident in the Miami phase were associated with a major realignment of exchange networks that involved an expansion of interaction with Western Pueblo areas at the expense of the Hohokam, although the residents of Tonto Basin retained many of the Hohokam traits they acquired from the pre-Classic period and even emulated Classic period Hohokam economic and political organization to a greater degree than any of the Phoenix Basin's other northern and eastern neighbors.

Tonto Basin is located in an environmental Transition Zone between the Colorado Plateau and Basin-and-Range Province of Arizona. Like other areas of the Transition Zone it was a borderland between the major culture regions of the Southwest and was used by a variety of people in different ways over time (Ciolek-Torello and Heilen 2016). Tonto Basin appears to have been initially occupied by small groups of people who can be characterized as Mogollon, but differed little from their Archaic period ancestors other than living in larger and more formal houses, increasing their dependence on agriculture, and making plain ware pottery. The growth of Hohokam culture in the Phoenix Basin and the development of the Hohokam regional system brought groups of Hohokam settlers into Tonto Basin, especially along the Salt River arm, which could be directly accessed from the Salt River Valley. Although present, Hohokam influence in the Tonto Arm and Upper Tonto Basin is more attenuated. The Hohokam constructed their own settlements in some places, while living side by side with the aboriginal residents of Tonto Basin in other places.

This pattern differed markedly from the lower Verde Valley and the smaller valleys of the Northern Periphery, which exhibit much less evidence of Early Formative period occupation. Hohokam settlers moved directly up the tributaries of the Salt River into what were probably uninhabited valleys and established a continuous system of settlements that were entirely Hohokam in nature and economically and socially connected by a network of many ballcourts. Although Wood (2000, 2005) insists that ballcourts may yet be present in Tonto Basin, their absence after 20 years of intensive excavation suggests that they were not present and Tonto Basin was not as well integrated into the pre-Classic period Hohokam regional system as the communities residing in other tributaries of the Salt River. This may be due in part to the relatively large number of non-Hohokam residents of Tonto Basin as well as the large uninhabitable zone created by the Mazatzal and Superstition Mountains that separated Tonto and Phoenix Basins.

The Classic period trajectory of Tonto Basin also differs markedly from the other areas of the Transition Zone. Many of the latter areas, which had been so intimately integrated into the Hohokam regional system, where abandoned by the Hohokam in the Classic period leaving uninhabited non-man's lands between the Phoenix Basin and the Puebloan people who moved into the upper reaches of the Salt River's tributaries. It is unclear who may have been the aggressors, but it appears that the relationship between the Phoenix Basin and their new neighbors was hostile based on the presence of the uninhabited zones and a line of fortified sites protecting the southern and western flanks of the new inhabitants of the tributary valleys. Paradoxically, Tonto Basin, which had the weakest link to the Hohokam regional system in the pre-Classic period, emulated important aspects of the Classic period Hohokam economic and political system, most notably, the association of platform mounds and irrigation communities. The Salt River Canyon clearly remained open as a line of communication between the Phoenix and Tonto Basins during the Classic period. Nevertheless, the degree of interaction between the two basins appears to have been more limited than before, as Tonto Basin increased contact with Western Pueblo people and the Phoenix Basin focused inwardly on the expansion of their irrigation systems (see Ciolek-Torrello 2012). Contact between the Tonto Basin Salado and their Western Pueblo neighbors may also have been hostile as indicated by another uninhabited zone along the Mogollon Rim and central Sierra Ancha with another system of fortified sites along the eastern Sierra Ancha and Q Ranch Plateau guarding the western flanks of the Western Pueblo expansion (Ciolek-Torrello and Lange 2006). Hilltop sites on the western flanks of the Sierra Ancha, the massive walls surrounding the Cline Terrace platform mound and its tower, and the ring of elevated habitation rooms surrounding a huge complex of storage rooms at Schoolhouse Point also suggest hostilities possibly with Tonto Basin's eastern neighbors. In closing, we do not present these interpretations as definitive conclusions about these issues, but they do represent a broad regional perspective and what we believe to be the most parsimonious explanations of the available data.

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APPENDIX A

Glossary of Archaeomagnetic Terms

α_{95} (alpha 95): The angular radius of the 95 percent cone of confidence (α_{95}) surrounding the mean archaeomagnetic direction expressed as an inclination and a declination.

accuracy: The relationship between the estimated value of a parameter and its true value. It refers to how well a technique matches the true value in question (Nash and Dean 2000:8).

archaeomagnetic event: Borrowing the concept of *event* from Dean (1978), this is the moment when the archaeological materials are affected in such a way that they acquire a magnetization parallel with the extant magnetic field. In the case of architectural features, the archaeomagnetic event typically corresponds to the last use of the structure and thus refers to the abandonment event of that structure.

archaeomagnetic pole: The equivalent of the virtual geomagnetic pole when the spot record of the paleomagnetic field is derived from archaeological materials. Because of the existence of a nondipole component to the magnetic field, the archaeomagnetic pole is an approximation of the geomagnetic north pole only for a specific geographic region. In the context of the current studies, the referent ancient geomagnetic field ranges in scale from that encompassing only the West Branch settlement to that encompassing the U.S. Southwest.

As-Zijderveld plot: A vector-endpoint diagram for plotting demagnetization results (Zijderveld 1967).

declination: The angle between geographic north and the horizontal component of the magnetic field vector (Sternberg 1990:6).

***dp*:** The semimajor axis of the confidence ellipse along the site-to-pole great circle, or the error in the ancient colatitude along the great circle passing through the sampling site and the pole (McElhinney 1973:83).

***dm*:** The semiminor axis of the confidence ellipse along the site-to-pole great circle, or the error in the direction perpendicular to the great circle passing through the sampling site and the pole (McElhinney 1973:83).

field strength: The magnitude of the total magnetic field vector (Sternberg 1990:6).

geomagnetic north pole: "Point where the axis of the *calculated* best fitting dipole cuts the surface of the earth in the northern . . . hemisphere" (McElhinney 1973:Table 3).

inclination: The dip of the total magnetic field vector with respect to the horizontal. A positive inclination indicates a dip below the horizon (Sternberg 1990:6).

***k*:** A statistical parameter for estimating the precision of a plotted mean direction.

milliTesla (mT): Système International d'Unite's (SI) unit of measurement for magnetization (magnetic induction) of a specimen. After Nikola Tesla, electrician and inventor. 1 tesla (T) = 10^4 gauss (G) in Gaussian CSG units (Eighmy and Sternberg 1990:xv).

north magnetic pole: "Point on the earth's surface where the magnetic inclination is observed to be + 90°" (McElhinney 1973:Table 3).

precision: The reproducibility of a given measurement; how close repeated measurements come to the same value (Nash and Dean 2000:8).

***R*:** The vector sum.

remanence: The magnetic induction remaining in a magnetized substance when the external magnetizing force has become zero. Also called *remanent magnetism* and *residual magnetism.*

resolution: A dating technique's ability to show that events occurred during different intervals of time (Ahlstrom 1985:26).

secular variation: Change in the magnetic field over time (McElhinney 1973:6). Although the magnetic field changes in strength and direction, archaeomagnetic studies in the U.S. Southwest emphasize changes in the field direction.

secular-variation curve: Any depiction of the apparent changes in the location of the virtual geomagnetic pole over time resulting from secular variation. The *archaeomagnetic dating curve* is a secular-variation curve with a specialized function. Also called *secular-variation record* and *polar-wander path*.

semimajor axis: The long axis of the oval of confidence for a mean direction.

semiminor axis: The short axis of the oval of confidence for a mean direction.

virtual geomagnetic pole (VGP): "The position of the equivalent geomagnetic pole calculated from a spot reading of the palaeomagnetic field" (McElhinney 1973:Table 3). "The term virtual indicates that the pole is different from the best-fitting dipole axis, which is determined by using a global data set" (Sternberg 1990:9).

APPENDIX B

Chronological Data

Table B.1. Archaeomagnetic Data from the Southwest Used to Construct the Tree-Ring Dated Curve Segment

Site Number	Sample Number	ARN[a]	n[b]	k[c]	A_{95}[d]	Plat[e]	Plong[e]	dm[f]	dp[f]	Estimated Date	Uncertainty	Tree-Ring Date, Beginning	Tree-Ring Date, Ending	Reference
LA 676	MT003	2169	8	287.37	3.30	76.11	207.15	5.01	3.84	1070	100	1020	1120	Eighmy et al. 1987
5MT8827	5MT8827-1	2150	14	886.30	1.20	79.87	196.81	1.44	1.86	1071	100	1021	1121	Eighmy et al. 1987
5MT8829	5MT8829-1	2151	12	2506.74	0.77	76.92	194.65	0.94	1.20	1092	100	1042	1142	Eighmy et al. 1987
5MT8829	5MT8829-3	2152	16	344.17	1.78	81.66	208.08	2.15	2.77	1092	100	1042	1142	Eighmy et al. 1987
AZ-I-26-3 (NAV)	AZ I-26-3(NAV)-2	3251	10	269.39	2.90	75.68	195.04	4.59	3.57	1092	100	1042	1142	Reed and Hensler 1999
NM:12:K3:101	NM:12:K3:101-2	2174	11	243.16	2.79	79.74	191.33	3.11	4.16	1110	100	1060	1160	Eighmy and Klein 1988
NA 3644	WV001	438	8	404.63	2.80	72.76	192.53	4.28	3.32	1112	30	1097	1127	Eighmy et al. 1987; Sternberg 1982
NA 3644	WV002	529	6	209.88	4.60	75.86	195.18	7.15	5.51	1122	30	1107	1137	Eighmy et al. 1987; Sternberg 1982
Nan Ranch	NR002	2177	10	534.59	2.10	73.14	189.77	2.30	3.10	1122	30	1107	1137	Sternberg 1982
AZ K:14:26 (ASM)	AZ K:14:26(ASM)-3	2159	11	420.41	2.01	79.08	209.22	3.11	2.40	1133	30	1118	1148	Eighmy and Klein 1990
NM:12:K3:252	NM:12:K3:252-1	2176	10	548.85	2.06	77.84	195.56	3.14	2.38	1135	30	1120	1150	Eighmy et al. 1987; Sternberg 1982
NA 420	UAZ 2187	2187	12	1041.76	1.30	74.31	187.79	2.05	1.57	1144	30	1129	1159	Elson 2006
NA 2133	WV004	528	9	315.85	2.90	76.63	194.84	3.42	4.45	1151	100	1101	1201	Eighmy et al. 1987; Sternberg 1982
LA 16254	LA16254-1	2165	12	266.11	2.57	79.17	183.31	2.81	3.80	1162	50	1137	1187	LaBelle and Eighmy 1995
	5MT2-2	2962	12	716.92	1.62	82.87	222.71	2.53	1.97	1206	30	1191	1221	LaBelle and Eighmy 1995
5MT4802	5MT4802-2	2950	8	397.61	2.78	78.63	208.72	4.43	3.51	1216	30	1201	1231	LaBelle and Eighmy 1995
Mesa Verde: Painted Kiva House	MV002	2854	8	242.11	3.60	80.59	212.17	5.60	4.39	1217	30	1202	1232	Sternberg 1982
Mesa Verde: Painted Kiva House	MV004	2856	9	155.96	4.10	80.29	227.13	6.61	5.28	1217	30	1202	1232	Sternberg 1982
5MT2525	5MT2525-3	2933	11	266.40	2.80	78.93	206.48	4.43	3.50	1226	50	1201	1251	Eighmy and Klein 1990
5MT3901	5MT3901-1	10	12	207.48	3.02	77.42	186.49	4.61	3.52	1240	100	1190	1290	Eighmy and Klein 1990
AZ BB:9:50 (ASM)	AZ BB:9:50(ASM)-2	1857	12	234.57	2.80	80.20	191.01	4.05	2.92	1264	30	1249	1279	Eighmy and Klein 1990
5MT3936	5MT3936-1	11	12	1615.87	1.08	80.18	197.87	1.67	1.29	1264	100	1214	1314	LaBelle and Eighmy 1995
5MT765	5MT765-1	18	12	335.75	2.37	84.04	282.44	3.65	2.81	1277	50	1252	1302	Eighmy and Klein 1990
5MT765	5MT765-4	19	12	570.49	1.82	80.50	205.59	2.84	2.21	1277	50	1252	1302	Eighmy and Klein 1990
5MT765	5MT765-2	20	12	300.92	2.51	77.40	194.19	3.90	3.03	1277	50	1252	1302	Eighmy and Klein 1990
5MT765	5MT765-5	16	12	216.96	2.95	82.14	185.33	4.43	3.33	1281	30	1266	1296	Eighmy and Klein 1990
5MT3951	5MT3951-1	13	11	289.58	2.69	81.76	205.86	4.16	3.21	1286	30	1271	1301	Eighmy and Klein 1990

continued on next page

Site Number	Sample Number	ARN[a]	n[b]	k[c]	A_{95}[d]	Plat[e]	Plong[e]	dm[f]	dp[f]	Estimated Date	Uncertainty	Tree-Ring Date, Beginning	Tree-Ring Date, Ending	Reference
Mesa Verde: Long House	MV003	2855	9	583.66	2.10	78.44	212.66	3.40	2.71	1287	30	1272	1302	Eighmy et al. 1987; Sternberg 1982
AR:03:03:02:520	AR:03:03:02:520-3	2935	14	483.30	1.81	84.20	218.24	2.71	2.03	1287	30	1272	1302	Eighmy and Klein 1990
AZ V:5:4 (ASM)	AZ V:5:4(ASM)-16	1774	10	290.48	2.84	82.47	207.42	4.22	3.14	1294	100	1244	1344	LaBelle and Eighmy 1995
AZ P:14:24 (ASM)	CH005	574	7	269.70	3.70	78.81	197.28	5.54	4.17	1295	50	1270	1320	Sternberg 1982
AZ P:14:8 (ASM)	GR008	583	8	811.49	1.90	86.61	162.90	2.72	1.90	1295	50	1270	1320	Eighmy et al. 1987; Sternberg 1982
Mesa Verde: Long House	MV001	2853	7	402.58	3.00	79.87	221.60	4.81	3.83	1295	30	1280	1310	Eighmy et al. 1987; Sternberg 1982
AZ P:14:24 (ASM)	CH003	581	8	288.31	3.30	79.81	188.36	4.81	3.53	1300	30	1285	1315	Eighmy et al. 1987; Sternberg 1982
TA-1	TA1-3	2944	12	359.59	2.29	82.35	207.79	3.49	2.65	1312	30	1297	1327	Eighmy and Klein 1990
TA-1	TA1-4	2945	11	1166.87	1.34	82.64	194.63	2.00	1.49	1312	30	1297	1327	Eighmy and Klein 1990
5MT765	5MT765-6	17	11	216.56	3.11	79.41	212.02	4.93	3.91	1316	100	1266	1366	Eighmy and Klein 1990
AZ P:14:24 (ASM)	CH001	579	9	490.67	2.30	81.21	199.75	3.46	2.58	1321	100	1271	1371	Eighmy et al. 1987; Sternberg 1982
AZ P:14:24 (ASM)	CH002	580	9	516.10	2.30	81.59	209.55	3.41	2.56	1321	100	1271	1371	Eighmy et al. 1987; Sternberg 1982
5MT10246	5MT10246-1	3163	11	181.11	3.40	86.56	173.76	4.98	3.64	1321	100	1271	1371	LaBelle and Eighmy 1995
AZ V:5:4 (ASM)	AZ V:5:4(ASM)-9	1777	12	403.99	2.16	85.44	193.36	3.09	2.21	1323	100	1273	1373	LaBelle and Eighmy 1995
	TA1-10/11	2963	24	674.39	1.14	85.28	223.00	1.72	1.28	1368	100	1318	1418	LaBelle and Eighmy 1995
TA-1	TA1-1/2	2943	25	549.30	1.24	84.75	197.60	1.83	1.35	1369	100	1319	1419	Eighmy and Klein 1990

[a] ARN is the Archaeomagnetic Reference Number for archaeomagnetic dating samples in the SRI Archaeomagnetic Data Base.
[b] n is the number of specimens used to compute the mean.
[c] k is the estimated precision of the VGP.
[d] A_{95} is the angle of 95% confidence associated with the data.
[e] PLAT and PLONG are the paleolatitude and paleolongitude of the virtual geomagnetic pole (VGP).
[f] *dm* and *dp* are the errors associated with the VGP.

Table B.2. Proveniences, Phases, Architectural Groups, and Archaeomagnetic Sample Numbers for Structures Included in This Study

Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
Ash Creek	AZ U:3:46 (ASU)	Mesita Colorado	Feature 1	1	–	–
Ash Creek	AZ U:3:46 (ASU)	Mesita Colorado	Feature 2	1	Colonial	1250
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Feature 1	1	Sacaton	1253
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Feature 2	3	–	–
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Feature 3	1	–	–
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Feature 5	4	Gila	1252
Ash Creek	AZ U:3:51 (ASU)	Tres Casitas	Feature 1	1	Sacaton	1254
Ash Creek	AZ U:3:51 (ASU)	Tres Casitas	Feature 5	1	–	
Ash Creek	AZ U:3:86 (ASU)	Tres Salas	Feature 2	4	Classic	1262
Ash Creek	AZ U:4:13 (ASU)	Buff	Feature 1	1	Sacaton	1268
Carlota	AZ U:12:58 / 02-1120	–	Feature 6	4	Roosevelt or Gila	3479
Carlota	AZ U:12:69 / 02-1164	–	Feature 14	1	–	–
Carlota	AZ U:12:69 / 02-1164	–	Feature 15	1	–	–
Carlota	AZ U:12:69 / 02-1164	–	Feature 2	4	–	–
Carlota	AZ U:12:69 / 02-1164	–	Feature 3	4	–	–
Carlota	AZ U:12:69 / 02-1164	–	Feature 9	4	Classic	3480
Carlota	AZ V:9:233 / 02-436	–	Feature 4	1	Ash Creek	3469
Carlota	AZ V:9:237 / 02-433	–	Feature 14	3	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 23	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 37	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 38	1	Ash Creek	3471
Carlota	AZ V:9:237 / 02-433	–	Feature 40	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 41	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 45	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 51	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 55	1	–	–
Carlota	AZ V:9:237 / 02-433	–	Feature 56	1	Ash Creek	3470
Carlota	AZ V:9:237 / 02-433	–	Feature 8	1	Ash Creek	3472
Carlota	AZ V:9:237 / 02-433	–	Feature 9	1	Ash Creek	3473
Carlota	AZ V:9:238 / 02-1114	–	Feature 1	4	–	–
Carlota	AZ V:9:238 / 02-1114	–	Feature 14	1	–	–
Carlota	AZ V:9:244 / 02-425	–	Feature 10	1	Ash Creek	3476
Carlota	AZ V:9:262 / 02-1145	–	Feature 16	4	–	–
Carlota	AZ V:9:262 / 02-1145	–	Feature 24	1	–	–
Carlota	AZ V:9:262 / 02-1145	–	Feature 3	4	Roosevelt	3478
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Feature 179	2	Miami or Roosevelt	2074
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Feature 19	2	Miami or Roosevelt	2071, 2078
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Feature 34	2	Miami or Roosevelt	2072
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Feature 99	2	Miami or Roosevelt	2073, 2081
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Feature 1	1	Miami	2077
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Feature 3	1	Miami	2076
CCP	AZ U:3:410 / 06-2017	Crane	Feature 30	1	Miami or Roosevelt	2083
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Feature 4	3	Roosevelt	1763, 1764
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Feature 5	3	Roosevelt	1765
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Feature 2	4	Roosevelt	1804
Mazatzal Rest Area	AZ O:15:111 / 06-1645	Partition House	Feature 14	1	Gila	3483

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Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Feature 1	1	Sacaton	3486
RCD	AZ V:5:1 / 06-25	Pyramid Point	Feature 31	4	Roosevelt	1737
RCD	AZ V:5:1 / 06-25	Pyramid Point	Feature 32	4	–	–
RCD	AZ V:5:1 / 06-25	Pyramid Point	Feature 36	4	Roosevelt	1739
RCD	AZ V:5:1 / 06-25	Pyramid Point	Feature 61	4	Roosevelt	1740
RCD	AZ V:5:1 / 06-25	Pyramid Point	Feature 67	4	Roosevelt	1742
RCD	AZ V:5:1 / 06-25	Pyramid Point	Feature 70	3	Ash Creek	1743
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 118	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 141	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 142	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 143	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 144	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 145	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 65	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 68	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 69	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 7	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 70	1	–	–
RCD	AZ V:5:104 / 06-1045	Eagle Ridge	Feature 74	1	–	–
RCD	AZ V:5:106 / 06-217	Porcupine	Feature 13	4	Roosevelt	1759
RCD	AZ V:5:106 / 06-217	Porcupine	Feature 4	4	Roosevelt	1760, 1761
RCD	AZ V:5:123 / 06-1002	–	Feature 1	4	Miami	1762
RCD	AZ V:5:176 / 06-2029	–	Feature 13	1	–	–
RCD	AZ V:5:176 / 06-2029	–	Feature 9	1	Sacaton	1766
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Feature 20	1	Gila Butte	1768
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 105	4	Roosevelt	1769
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 11	4	Roosevelt	1770
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 137	3	Roosevelt	1771
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 144	3	Roosevelt	1772
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 176	1	–	–
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 177	2	Miami or Roosevelt	1778
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 214	1	Gila Butte	1782
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 274	2	Miami or Roosevelt	1779, 1780, 1781
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 324	3	Roosevelt	1773, 2045, 2059
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 365	3	Roosevelt	1774
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 449	1	Colonial	1783
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 455	3	Miami or Roosevelt	1775
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 471	1	Sacaton	1784
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 5	4	Miami or Roosevelt	1776
RCD	AZ V:5:4 / 06-26	Meddler Point	Feature 77	4	Roosevelt	1777
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 109	3	–	–
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 111	4	Roosevelt	1789
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 114	1	–	–
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 27	4	Roosevelt	1791
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 56	4	Roosevelt	1792
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 58	4	Roosevelt	1793
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 70	4	Roosevelt	1794

Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 75	4	Roosevelt	1795
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 76	4	Roosevelt	1796
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 81	4	–	–
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 9	4	Roosevelt	1800
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 93	4	Roosevelt	1801
RCD	AZ V:5:90 / 06-96	Griffin Wash	Feature 95	4	Roosevelt	1802
RCD	AZ V:5:93 / 06-1537	–	Feature 1	4	–	–
RCD	AZ V:5:93 / 06-1537	–	Feature 2	1	–	–
RCD	AZ V:5:98 / 06-1542	–	Feature 1	2	Classic	1803
RPM	AZ U:4:33 / 06-132	Cline Terrace Platform Mound	Feature 103	1	–	–
RPM	AZ U:4:33 / 06-132	Cline Terrace Platform Mound	Feature 27	1	–	–
RPM	AZ U:4:9 / 06-295	–	Feature 107	4	–	–
RPM	AZ U:4:9 / 06-295	–	Feature 136	1	–	–
RPM	AZ U:4:9 / 06-295	–	Feature 29	1	–	–
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 117	4	Roosevelt	1292
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 124	4	Gila	1293
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 139	4	Gila	1294
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 188	4	Gila	1295
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 316	4	Gila	1297
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 41	4	Gila	1299
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 56	4	Gila	1301
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature 87	4	Gila	1303
RPM	AZ U:8:24 / 06-13a	School House Point Site	Feature in Trench 83	1	–	–
RPM	AZ V:5:112 / 06-995	Sand Dune	Feature 12	3	–	–
RPM	AZ V:5:112 / 06-995	Sand Dune	Feature 14	4	–	–
RPM	AZ V:5:112 / 06-995	Sand Dune	Feature 27	4	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 42	3	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 44	1	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 46	1	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 60	4	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 62	3	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 7	1	–	–
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Feature 8	1	–	–
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Feature 1b	4	Roosevelt	1785, 1786
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Feature 7b	4	Roosevelt	1787, 1788
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Feature 7	4	Roosevelt	1285
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Feature 11	1	Sacaton	1287

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Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
RRSS	AZ U:8:225 / 06-1580	Riser	Feature 10	1	Sacaton	1288, 1289
RRSS	AZ U:8:225 / 06-1580	Riser	Feature 8	1	Sacaton	1290
SR87: Ord Mine Road	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Feature 2	4	Roosevelt	429
SR87: Ord Mine Road	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Feature 4	4	Roosevelt	430
SR87: Ord Mine Road	AZ O:15:45 (ASM) / NA 16487 (MNA)	La Piedra House	Feature 2	4	–	–
SR87: Ord Mine Road	AZ O:15:88 (ASM) / NA 16929 (MNA)	Limestone House	Feature 3	4	Roosevelt	433
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Feature 28	1	Sacaton	1256
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Feature 6	1	Sacaton	1257
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Feature 7	1	Sacaton	1258
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Feature 2	1	Sacaton	1264
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Feature 3	1	Sacaton	1265
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Feature 33	1	Sacaton	1266
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Feature 11	1	Sacaton	1267
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Feature 1	1	Sacaton	535
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Feature 12	1	Sacaton	536
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Feature 3	1	Sacaton	537
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Feature 4	1	Sacaton	538
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 11	1	Gila Butte	540
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 13	1	Santa Cruz	541
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 14	1	Gila Butte	542
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 18	1	Gila Butte	543
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 2	1	Gila Butte	544
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 21	1	Gila Butte	545
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 22	1	Gila Butte	546
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 25	1	Gila Butte	547
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 32	1	Gila Butte	548
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 36	1	–	–
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 59	1	Sacaton	549
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 65	1	Santa Cruz	550
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Feature 9	1	–	–
SR87: Rye Creek	AZ O:15:53 / 06-539	Hilltop	Feature 14	1	–	–
SR87: Rye Creek	AZ O:15:53 / 06-539	Hilltop	Feature 15	1	–	–
SR87: Rye Creek	AZ O:15:54 / 06-540	Cobble	Feature 9	4	Miami or Roosevelt	551
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Feature 1	4	Roosevelt	554
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Feature 11	1	Miami	555
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Feature 19	2	Miami	556
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Feature 5	2	Miami or Roosevelt	552
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Feature 6	2	Miami or Roosevelt	553
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Feature 9	1	Sacaton	557
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Feature 4	1	Sacaton	559
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Feature 11	1	Sacaton	560
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Feature 5	1	Sacaton	561
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Feature 14	1	Sacaton	562
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Feature 7	2	Miami	2703
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Feature 12	1	Sacaton	2097
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Feature 4	1	Colonial	2092
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Feature 1	1	Colonial-Sedentary	2701

Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Feature 22	1	Colonial	2694
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Feature 27	1	–	–
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Feature 5	1	Colonial	2697
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Feature 2	4	Miami or Roosevelt	1239
TCAP	AZ U:3:275 / 06-1373	Sliver	Feature 1	1	Sacaton	1240
TCAP	AZ U:3:275 / 06-1373	Sliver	Feature 3	1	Sacaton	1241
TCAP	AZ U:3:275 / 06-1373	Sliver	Feature 5	1	–	–
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Feature 1	4	Miami or Roosevelt	1242
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Feature 11	4	Miami or Roosevelt	1243
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Feature 2	4	Miami or Roosevelt	1244, 1245
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Feature 3	4	Gila	1247
TCAP	AZ U:3:286 / 06-1352	Boatyard	Feature 8	1	Gila Butte	1994
TCAP	AZ U:3:289 / 06-2283	Hodgepodge Ridge	Feature 16	1	–	–
TCAP	AZ U:3:289 / 06-2283	Hodgepodge Ridge	Feature 24	1	–	–
TCAP	AZ U:3:289 / 06-2283	Hodgepodge Ridge	Feature 37	1	–	–
TCAP	AZ U:3:289 / 06-2283	Hodgepodge Ridge	Feature 39	1	–	–
TCAP	AZ U:3:289 / 06-2283	Hodgepodge Ridge	Feature 67	1	–	–
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 1	1	Gila Butte	1948
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 15	1	Santa Cruz-Sacaton (transition)	1947
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 17	1	Gila Butte	1942
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 2	1	Gila Butte	1949
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 21	1	Santa Cruz	1950
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 22	1	–	–
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 28	1	Colonial	1952
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 55	1	–	–
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 56	1	–	–
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 57	1	Ash Creek	1945
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 58	1	Sacaton	1941
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 59	1	–	–
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 60	1	Colonial	1951
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Feature 8	1	–	–
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 12	1	Gila Butte	1946
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 177	1	Gila Butte	2011
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 20	1	Sacaton	1955
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 200	4	Miami or Roosevelt	1954
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 219	1	–	–
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 220	1	Ash Creek	1953
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 246	3	–	–
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 3	3	–	–
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 35	2	Miami or Roosevelt	1957
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 4	4	Miami or Roosevelt	1956
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 41	1	–	–
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 55	3	–	–
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Feature 7	4	Miami or Roosevelt	1958
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 1	1	Sacaton	2023
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 104	1	Santa Cruz	1964
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 122	1	–	–
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 2	1	Sacaton	1959

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Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 201	1	Santa Cruz	1960
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 205	3	Ash Creek or Miami	1961
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 3	1	Sacaton	1962
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 4	1	Sacaton	1963
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Feature 5	1	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Earlier Structure in Feature 25	1	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 1	3	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 102	1	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 11	2	Miami or Roosevelt	2044
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 13	1	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 15	1	Sacaton or Ash Creek	1966
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 2	3	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 25	3	Ash Creek or Miami	1968, 1969
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 33	1	–	–
TCAP	AZ U:3:299 / 06-199	Granary Row	Feature 5	3	–	–
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Feature 1	4	Miami or Roosevelt	2057
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Feature 2	4	–	–
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Feature 24	1	–	–
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Feature 25	1	–	–
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Feature 3	4	Miami or Roosevelt	2055
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Feature 5	4	Gila	2056
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Feature 1	1	Sacaton	1974
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Feature 13	1	–	–
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Feature 2	1	Sacaton	1971, 1972
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Feature 3	1	Sacaton	1970
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Feature 4	1	Sacaton	1973
Wheatfields	AZ V:5:220 / 02-86	BC	Feature 17	4	Roosevelt	3416
Wheatfields	AZ V:5:220 / 02-86	BC	Feature 20	4	Roosevelt	3418, 3419
Wheatfields	AZ V:5:220 / 02-86	BC	Feature 6	4	Roosevelt	3417
Wheatfields	AZ V:5:222 / 02-85	Murray Wash	Feature 5	4	–	–
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Feature 3	4	Classic	3426, 3428
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Feature 12	1	Santa Cruz or Sacaton	3433
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Feature 20	1	Sacaton	3430, 3431
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 12	1	Santa Cruz	3445
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 13	1	Colonial	3441
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 2	1	Gila Butte	3443
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 27	1	Sacaton	3439
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 3	4	Classic	3438
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 35	1	Sacaton	3444
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 40	1	Sacaton	3437
Wheatfields	AZ V:9:325 / 02-907	JR	Feature 69	1	–	–
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Feature 1	4	Gila	3447
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 101	1	Sacaton	3460
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 14	4	Gila	3450
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 147	1	–	–
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 15	4	–	–
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 18	4	Gila	3448, 3449
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 20	4	Gila	3453

Project Name	Site Number[a]	Site Name	Structure No.	Group	Phase or Period	ARN[b]
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 21	4	–	–
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 22	4	Gila	3451
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 48	4	Roosevelt	3457
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 52	1	–	–
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 62	3	–	–
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 73	1	Sacaton	3459
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 79	1	–	–
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 82	3	Miami	3455
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Feature 87	4	–	–
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Feature 13	1	Sacaton	3462
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Feature 14	1	–	–
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Feature 15	1	Santa Cruz	3467
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Feature 28	1	–	–

[a] Site numbers are ASM / TNF unless otherwise noted. TNF designations are preceded by AR-03-12-.
[b] ARN is the Archaeomagnetic Reference Number for archaeomagnetic dating samples in the SRI Archaeomagnetic Data Base.

Table B.3. Pairs of Stratified Structures Listed with the Earlier Structure (Feature A) First

Project Name	Site Number[a]	Stratigraphy	Feature A	Group	Feature B	Group
Ash Creek	AZ U:3:50 (ASU)	superposition	Feature 1	1	Feature 2	3
Ash Creek	AZ U:3:50 (ASU)	superposition	Feature 3	1	Feature 5	4
Ash Creek	AZ U:3:51 (ASU)	superposition	Feature 1	1	Feature 5	1
Carlota	AZ U:12:69 / 02-1164	superposition	Feature 15	1	Feature 2	3
Carlota	AZ U:12:69 / 02-1164	intrusion	Feature 14	1	Feature 3	4
Carlota	AZ V:9:237 / 02-433	intrusion	Feature 37	1	Feature 51	1
Carlota	AZ V:9:237 / 02-433	intrusion	Feature 38	1	Feature 51	1
Carlota	AZ V:9:237 / 02-433	intrusion	Feature 40	1	Feature 56	1
Carlota	AZ V:9:237 / 02-433	superposition	Feature 41	1	Feature 40	1
Carlota	AZ V:9:237 / 02-433	superposition	Feature 41	1	Feature 55	1
Carlota	AZ V:9:237 / 02-433	intrusion	Feature 41	1	Feature 23	1
Carlota	AZ V:9:237 / 02-433	superposition	Feature 41	1	Feature 56	1
Carlota	AZ V:9:237 / 02-433	intrusion	Feature 9	1	Feature 37	1
Carlota	AZ V:9:237 / 02-433	superposition	Feature 45	1	Feature 14	3
Carlota	AZ V:9:238 / 02-1114	intrusion	Feature 14	1	Feature 1	4
Carlota	AZ V:9:262 / 02-1145	superposition	Feature 24	1	Feature 16	4
CCP	AZ U:3:405 / 06-2012	superposition	Feature 99	2	Feature 19	2
CCP	AZ U:3:407 / 06-2014	superposition	Feature 1	1	Feature 3	1
RCD	AZ V:5:1 / 06-25	superposition	Feature 70	3	Feature 31	4
RCD	AZ V:5:1 / 06-25	superposition	Feature 70	3	Feature 32	4
RCD	AZ V:5:104 / 06-1045	intrusion	Feature 65	1	Feature 143	1
RCD	AZ V:5:104 / 06-1045	intrusion	Feature 142	1	Feature 65	1
RCD	AZ V:5:104 / 06-1045	intrusion	Feature 144	1	Feature 7	1
RCD	AZ V:5:104 / 06-1045	intrusion	Feature 145	1	Feature 69	1
RCD	AZ V:5:4 / 06-26	intrusion	Feature 176	1	Feature 214	1
RCD	AZ V:5:4 / 06-26	intrusion	Feature 176	1	Feature 177	2
RCD	AZ V:5:90 / 06-96	superposition	Feature 114	1	Feature 84	4
RCD	AZ V:5:90 / 06-96	superposition	Feature 109	3	Feature 95	4
RCD	AZ V:5:93 / 06-1537	intrusion	Feature 2	1	Feature 1	4
RPM	AZ U:4:9 / 06-295	superposition	Feature 29	1	Feature 107	4
RPM	AZ U:8:24 / 06-13a	superposition	Feature in Trench 83	1	Feature 316	4
RPM	AZ V:5:112 / 06-995	superposition	Feature 27	4	Feature 12	4
RPM	AZ V:5:112 / 06-995	superposition	Feature 27	4	Feature 14	4
RPM	AZ V:5:66 / 06-15a	superposition	Feature 44	1	Feature 42	3
SR87: Rye Creek	AZ O:15:52 / 06-527	intrusion	Feature 25	1	Feature 9	1
SR87: Rye Creek	AZ O:15:52 / 06-527	intrusion	Feature 65	1	Feature 59	1
SR87: Rye Creek	AZ O:15:53 / 06-539	superposition	Feature 15	1	Feature 14	1
TCAP	AZ U:3:275 / 06-1373	superposition	Feature 5	1	Feature 1	1
TCAP	AZ U:3:289 / 06-2283	intrusion	Feature 67	1	Feature 39	1
TCAP	AZ U:3:289 / 06-2283	intrusion	Feature 67	1	Feature 37	1
TCAP	AZ U:3:289 / 06-2283	intrusion	Feature 39	1	Feature 37	1
TCAP	AZ U:3:289 / 06-2283	intrusion	Feature 37	1	Feature 16	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 22	1	Feature 15	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 55	1	Feature 56	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 55	1	Feature 57	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 56	1	Feature 57	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 58	1	Feature 8	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 59	1	Feature 58	1
TCAP	AZ U:3:294 / 06-1362	intrusion	Feature 59	1	Feature 8	1

Project Name	Site Number[a]	Stratigraphy	Feature A	Group	Feature B	Group
TCAP	AZ U:3:297 / 06-332	superposition	Feature 177	1	Feature 55	3
TCAP	AZ U:3:297 / 06-332	superposition	Feature 177	1	Feature 3	3
TCAP	AZ U:3:298 / 06-1368	intrusion	Feature 5	1	Feature 4	1
TCAP	AZ U:3:299 / 06-199	intrusion	Feature 13	1	Earlier Structure in 25	1
TCAP	AZ U:3:299 / 06-199	superposition	Earlier Structure in 25	1	Feature 25	3
TCAP	AZ U:3:299 / 06-199	intrusion	Feature 13	1	Feature 25	3
TCAP	AZ U:3:300 / 06-1365	superposition	Feature 24	1	Feature 1	4
TCAP	AZ U:3:300 / 06-1365	superposition	Feature 25	1	Feature 3	4
TCAP	AZ U:3:352 / 06-2284	intrusion	Feature 4	1	Feature 13	1
Wheatfields	AZ V:9:365 / 02-908	intrusion	Feature 52	1	Feature 62	3
Wheatfields	AZ V:9:365 / 02-908	intrusion	Feature 147	1	Feature 82	3
Wheatfields	AZ V:9:365 / 02-908	superposition	Feature 101	1	Feature 87	4
Wheatfields	AZ V:9:365 / 02-908	intrusion	Feature 62	3	Feature 48	4
Wheatfields	AZ V:9:365 / 02-908	superposition	Feature 79	1	Feature 18	4
Wheatfields	AZ V:9:365 / 02-908	superposition	Feature 79	1	Feature 21	4
Wheatfields	AZ V:9:367 / 02-78	intrusion	Feature 14	1	Feature 28	1

[a] Site numbers are ASM / TNF unless otherwise noted. TNF designations are preceded by AR-03-12-.

Table B.4. Regional Archaeomagnetic Data for Structures and Other Features

Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
Ash Creek	AZ U:3:46 (ASU)	Mesita Colorado	Pit Structure 2	Colonial	1250	7	86.04	12.59	5.26	3.55	3.90	6.9694	196.11
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Pit Structure 1	Sacaton	1253	9	85.88	221.76	2.32	1.69	1.60	8.9882	677.05
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Room 5	Gila	1252	8	76.81	197.28	2.43	1.84	1.60	7.9898	687.24
Ash Creek	AZ U:3:51 (ASU)	Tres Casitas	Pit Structure 1	Sacaton	1254	8	82.08	185.54	3.76	2.71	2.60	7.9768	302.09
Ash Creek	AZ U:3:86 (ASU)	Tres Salas	Room 2	Classic	1262	8	80.60	196.20	4.89	3.62	3.30	7.9598	174.30
Ash Creek	AZ U:4:13 (ASU)	Buff	Pit Structure 1	Sacaton	1268	8	74.78	221.13	5.64	4.54	3.50	7.9420	120.79
Carlota	AZ U:12:58 / 02-1120		Room F6	Roosevelt or Gila	3479	9	86.52	223.13	6.95	4.99	4.84	8.8966	77.39
Carlota	AZ U:12:69 / 02-1164		Room F9	Classic	3480	5	85.25	182.17	6.22	4.39	4.41	4.9814	215.38
Carlota	AZ V:9:233 / 02-436		Pit Structure F4	Ash Creek	3469	8	76.30	198.91	4.38	3.33	2.88	7.9669	211.34
Carlota	AZ V:9:237 / 02-433		Pit Structure F38	Ash Creek	3471	7	82.82	209.06	4.89	3.61	3.32	6.9711	207.39
Carlota	AZ V:9:237 / 02-433		Pit Structure F56	Ash Creek	3470	9	82.06	177.65	2.58	1.83	1.81	8.9858	562.41
Carlota	AZ V:9:237 / 02-433		Pit Structure F8	Ash Creek	3472	12	80.06	199.55	3.52	2.62	2.36	11.9464	205.25
Carlota	AZ V:9:237 / 02-433		Pit Structure F9	Ash Creek	3473	11	79.31	174.93	2.74	1.95	1.93	10.9744	391.15
Carlota	AZ V:9:244 / 02-425		Pit Structure F10	Ash Creek	3476	12	80.97	202.09	4.66	3.46	3.14	11.9066	117.81
Carlota	AZ V:9:262 / 02-1145		Room F3	Roosevelt	3478	10	79.45	203.58	4.74	3.57	3.16	9.9352	138.88
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Hearth 11.1[a]	Miami	2075	13	71.32	177.73	3.53	2.58	2.40	12.9367	189.67
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Hearth 11.2[a]	Miami	2082	7	81.14	186.42	5.08	3.62	3.60	6.9699	199.12
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	2074	11	78.87	205.00	5.41	4.12	3.60	10.8942	94.50
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	2078	8	79.24	211.65	4.14	3.18	2.70	7.9701	234.03
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	2071	10	79.62	183.49	2.51	1.83	1.70	9.9823	509.04
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	2072	8	77.98	202.21	7.16	5.47	4.70	7.9117	79.30
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	2073	12	76.75	202.60	2.78	2.14	1.80	11.9654	317.64
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	2081	13	79.02	199.61	2.64	1.99	1.80	12.9634	328.09
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	2077	11	74.16	199.54	2.30	1.79	1.50	10.9803	507.34
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	2076	10	77.98	196.75	3.79	2.86	2.50	9.9584	216.26
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	2083	12	75.94	222.88	7.78	6.23	4.90	11.7239	39.83
Cholla-Saguaro	AZ V:5:14 (ASM)		Room 4	Roosevelt	1764	8	72.68	198.18	3.23	2.51	2.10	7.9816	379.44
Cholla-Saguaro	AZ V:5:14 (ASM)		Room 4	Roosevelt	1763	6	67.89	225.16	3.39	2.90	2.00	5.9891	457.62
Cholla-Saguaro	AZ V:5:14 (ASM)		Room 5	Roosevelt	1765	9	84.08	169.72	6.68	4.68	4.80	8.9067	85.75
Cholla-Saguaro	AZ V:9:105 (ASM)		Room 2	Roosevelt	1804	12	75.74	196.57	4.84	3.67	3.20	11.8972	107.03
Mazatzal Rest Area	AZ O:15:110 / 06-1644	The Broken Hardt Site	Horno F7[a]	Gila	3481	12	83.76	189.67	6.31	4.56	4.36	11.8344	66.44

Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
Mazatzal Rest Area	AZ O:15:111 / 06-1645	Partition House	Pit Structure F14	Gila	3483	8	83.79	141.48	5.48	3.72	4.04	7.9538	151.48
Pinal Creek Pit House	AZ U:8:628 / 06-188		Pithouse F1	Sacaton	3486	8	78.85	192.25	4.60	3.40	3.10	7.9645	197.15
RCD	AZ V:5:1 / 06-25	Pyramid Point	Extramural Hearth F30[a]	unplaced	1735	12	87.82	343.67	6.45	4.46	4.66	11.8345	66.46
RCD	AZ V:5:1 / 06-25	Pyramid Point	Extramural Hearth F69[a]	Roosevelt	1736	11	76.56	214.72	4.21	3.30	2.68	10.9338	151.02
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	1743	10	82.03	213.41	5.55	4.15	3.95	9.9120	102.28
RCD	AZ V:5:1 / 06-25	Pyramid Point	Roasting Pit F79[a]	Roosevelt	1744	10	82.04	222.67	5.47	4.13	3.63	9.9137	104.26
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	1737	12	77.43	248.95	4.16	3.33	3.20	11.9197	136.96
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	1739	11	81.34	221.94	5.27	4.00	3.47	10.8999	99.86
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	1740	12	83.65	214.37	2.83	2.09	1.92	11.9656	319.49
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	1742	10	81.29	217.78	6.93	5.24	3.89	9.8620	65.23
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	1759	9	83.11	207.09	3.84	2.83	2.60	8.9673	244.89
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	1761	12	79.01	195.95	2.47	1.85	1.65	11.9734	413.26
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	1760	12	81.07	188.99	5.00	3.68	4.36	11.8936	103.35
RCD	AZ V:5:123 / 06-1002		Room F1	Miami	1762	12	76.36	182.17	5.19	3.80	3.54	11.8860	96.49
RCD	AZ V:5:176 / 06-2029		Pit Structure F9	Sacaton	1766	9	80.09	199.15	3.15	2.35	2.11	8.9777	359.06
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	1768	12	81.62	42.11	3.63	2.28	2.89	11.9519	228.60
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	1778	12	78.71	193.56	4.46	3.32	3.00	11.9142	128.20
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	1781	12	75.43	195.52	3.14	2.39	2.07	11.9564	252.01
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	1780	12	78.06	188.47	1.26	0.93	0.85	11.9932	1608.73
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	1779	8	79.26	200.71	2.68	2.02	1.78	7.9877	567.77
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	1774	10	82.47	207.42	4.22	3.14	2.84	9.9492	177.08
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	1775	13	82.41	199.33	4.94	3.63	3.37	12.8760	96.80
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	1776	12	84.88	208.46	2.90	2.11	2.00	11.9644	308.85
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	1782	11	82.08	69.00	3.64	2.29	3.81	10.9602	251.07
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	1783	12	85.49	73.96	3.28	2.14	3.35	11.9592	269.37
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F471	Sacaton	1784	12	78.50	186.90	4.77	3.50	3.25	11.9033	113.81
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	1769	12	81.47	182.42	2.34	1.68	1.63	11.9771	480.20
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	1770	12	81.80	190.67	2.14	1.56	1.47	11.9805	565.30
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	1771	12	80.09	189.47	2.25	1.65	1.54	11.9784	508.43
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	1772	12	78.50	195.89	5.26	3.94	3.52	11.8803	91.87
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	1773	12	86.42	201.40	5.02	3.58	3.51	11.8960	105.80

continued on next page

Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	2045	12	86.42	201.40	5.02	3.58	3.51	11.8960	105.80
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	2059	12	86.42	201.40	5.02	3.58	3.51	11.8960	105.80
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	1777	12	85.44	193.36	3.09	2.21	2.16	11.9603	276.85
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F111	Roosevelt	1789	12	74.55	187.98	5.77	4.31	3.86	11.8566	76.72
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	1791	12	83.27	215.67	5.68	4.21	3.83	11.8621	79.75
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	1792	12	81.91	196.26	3.51	2.57	2.39	11.9476	209.82
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	1793	12	84.89	194.51	4.80	3.45	3.67	11.9041	114.73
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	1794	12	83.92	218.18	4.73	3.49	3.20	11.9044	115.09
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	1795	12	84.23	225.62	3.89	2.88	2.63	11.9350	169.13
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	1796	12	84.15	195.30	3.93	2.84	2.72	11.9352	169.76
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	1800	12	77.00	184.16	2.41	1.76	1.64	11.9753	445.13
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	1801	12	80.41	205.32	5.42	4.07	3.61	11.8726	86.37
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	1802	12	84.31	224.73	6.31	4.66	4.28	11.8309	65.04
RCD	AZ V:5:98 / 06-1542		Pit Room F1	Classic	1803	8	79.64	187.41	5.25	3.84	3.59	7.9543	153.16
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F117	Roosevelt	1292	11	84.46	212.22	3.68	2.69	2.52	10.9527	211.56
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F124	Gila	1293	8	84.76	202.23	5.71	4.13	3.95	7.9466	131.07
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F139	Gila	1294	11	79.29	175.22	4.33	3.09	3.04	10.9362	156.78
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F188	Gila	1295	12	85.19	196.11	2.91	2.09	2.03	11.9646	310.73
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F316	Gila	1297	11	76.45	180.67	3.06	2.22	2.10	10.9675	307.85
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F41	Gila	1299	11	83.74	204.96	3.91	2.86	2.67	10.9466	187.39
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F56	Gila	1301	9	82.97	180.04	4.17	2.97	2.93	8.9628	214.99
RPM	AZ U:8:24 / 06-13a	School House Point Mound	Room F87	Gila	1303	12	84.35	171.48	3.14	2.21	2.24	11.9596	272.45
RPM	AZ V:5:76 / 06-700	Livingston	Room F1b	Roosevelt	1786	10	84.36	130.86	5.57	3.72	4.16	9.9208	113.59
RPM	AZ V:5:76 / 06-700	Livingston	Room F1b	Roosevelt	1785	6	80.46	172.96	5.33	3.78	3.76	5.9777	223.78
RPM	AZ V:5:76 / 06-700	Livingston	Room F7b	Roosevelt	1787	12	85.81	236.08	3.19	2.33	2.19	11.9568	254.44
RPM	AZ V:5:76 / 06-700	Livingston	Room F7b	Roosevelt	1788	12	88.79	115.96	3.00	2.06	2.19	11.9640	305.82
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	1285	12	80.88	190.43	3.26	2.38	2.20	11.9549	243.78

Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	1287	12	79.90	198.03	4.44	3.31	3.00	11.9148	129.16
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	1288	10	79.30	193.93	2.44	1.81	1.60	9.9830	529.40
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	1289	11	82.96	195.03	5.44	3.96	3.70	10.8977	97.74
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F8	Sacaton	1290	12	78.20	209.55	6.14	4.72	4.00	11.8333	65.97
SR87: Ord Mine Road	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Room 2	Roosevelt	429	10	78.16	197.36	4.70	3.55	3.10	9.9361	140.83
SR87: Ord Mine Road	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Room 4	Roosevelt	430	10	78.03	183.49	2.25	1.65	1.50	9.9857	629.59
SR87: Ord Mine Road	AZ O:15:88 (ASM) / NA 16929 (MNA)	Limestone House	Room 3	Roosevelt	433	8	76.08	203.33	5.20	4.03	3.40	7.9525	147.38
SR87: Pine Creek	AZ U:3:83 / 03-412		Pit Structure F28	Sacaton	1256	5	85.77	198.74	5.01	3.59	3.49	4.9877	326.49
SR87: Pine Creek	AZ U:3:83 / 03-412		Pit Structure F6	Sacaton	1257	12	80.26	201.20	2.68	2.01	1.79	11.9686	350.70
SR87: Pine Creek	AZ U:3:83 / 03-412		Pit Structure F7	Sacaton	1258	9	82.48	204.07	6.12	4.53	4.14	8.9172	96.57
SR87: Pine Creek	AZ U:3:87 / 03-411		Pit Structure F2	Sacaton	1264	12	88.58	85.15	2.39	1.63	1.75	11.9773	484.57
SR87: Pine Creek	AZ U:3:87 / 03-411		Pit Structure F3	Sacaton	1265	12	84.51	215.51	4.65	3.41	3.17	11.9082	119.78
SR87: Pine Creek	AZ U:3:87 / 03-411		Pit Structure F33	Sacaton	1266	10	79.72	183.57	4.70	3.42	3.23	9.9384	146.15
SR87: Pine Creek	AZ U:3:89 / 03-449		Pit Structure F11	Sacaton	1267	12	88.17	299.02	3.62	2.55	2.57	11.9464	205.06
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	535	12	70.93	186.20	4.63	3.50	3.10	11.9062	117.22
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	536	12	78.72	203.80	2.71	2.06	1.80	11.9675	338.44
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F3	Sacaton	537	12	74.54	196.25	4.61	3.55	3.00	11.9052	116.08
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F4	Sacaton	538	12	79.22	205.37	3.37	2.56	2.20	11.9498	219.34
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Crematorium F71[a]	Gila Butte	539	12	80.61	59.89	1.94	1.20	1.60	11.9864	810.23
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F11	Gila Butte	540	12	82.16	55.11	2.26	1.43	1.80	11.9812	583.91
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F13	Santa Cruz	541	11	87.41	42.66	3.29	2.22	2.40	10.9651	286.40
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	542	14	80.86	55.76	1.36	0.84	1.10	13.9906	1384.00
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	543	12	81.02	56.34	3.52	2.19	2.80	11.9552	245.36
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F2	Gila Butte	544	11	82.95	86.79	2.94	1.88	2.30	10.9736	378.15
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	545	11	82.84	61.19	2.04	1.30	1.60	10.9873	787.08
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F22	Gila Butte	546	12	81.60	61.89	2.74	1.71	2.20	11.9727	403.06
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F25	Gila Butte	547	12	82.55	53.26	2.37	1.50	1.90	11.9793	530.92
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F32	Gila Butte	548	20	82.35	48.78	2.39	1.52	1.90	19.9354	294.20
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	549	15	85.72	216.46	2.50	1.82	1.70	14.9566	322.31
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F65	Santa Cruz	550	12	84.45	41.37	2.67	1.75	2.00	11.9728	404.17
SR87: Rye Creek	AZ O:15:54 / 06-540	Cobble	Pit Room F9	Miami or Roosevelt	551	11	85.61	200.55	1.73	1.25	1.20	10.9896	965.02

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Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F19	Miami	556	11	81.69	205.98	4.71	3.52	3.10	10.9211	126.71
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	552	12	80.82	198.28	2.08	1.55	1.40	11.9812	585.33
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	553	12	81.19	190.60	3.34	2.45	2.30	11.9524	231.20
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F11	Miami	555	12	80.21	193.41	1.73	1.28	1.20	11.9871	851.75
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F9	Sacaton	557	12	84.08	172.78	3.88	2.75	2.70	11.9380	177.53
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Room F1	Roosevelt	554	12	82.35	186.49	3.40	2.46	2.30	11.9514	226.21
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Horno F6[a]	Classic	558	12	83.23	185.24	2.07	1.49	1.40	11.9820	611.79
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Pit Structure F4	Sacaton	559	12	76.82	194.81	2.75	2.08	1.80	11.9667	330.33
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	560	12	77.41	203.49	2.06	1.59	1.30	11.9809	576.15
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	561	12	75.81	196.27	4.63	3.54	3.00	11.9051	115.91
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	562	12	83.62	229.29	2.17	1.62	1.40	11.9795	536.89
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Horno F4[a]	Miami	2702	12	76.88	187.82	4.06	3.02	2.70	11.9289	154.62
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	2703	12	77.02	191.42	1.97	1.47	1.30	11.9831	651.53
SR87: SCP	AZ U:3:323 / 03-478	Cottonwood Basin	Horno F1[a]	Sacaton-Soho (transition)	2705	11	75.18	183.18	4.89	3.61	3.30	10.9160	119.06
SR87: SCP	AZ U:3:333 / 03-563	O'Neil Tank	Horno F1[a]	Classic	2706	5	83.04	174.32	5.89	4.17	4.20	4.9833	239.34
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	2097	10	84.12	191.47	6.63	4.78	4.60	9.8794	74.60
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F4	Colonial	2092	6	86.13	69.24	4.83	3.19	3.70	5.9829	292.33
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Horno F2A[a]	Colonial	2695	12	81.36	63.06	3.00	1.86	2.40	11.9675	338.60
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F1	Colonial-Sedentary	2701	9	83.76	256.56	4.53	3.39	3.00	8.9539	173.57
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F22	Colonial	2694	11	83.47	12.36	5.49	3.63	4.20	10.9053	105.57
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	2697	6	86.85	40.69	5.08	3.41	3.80	5.9808	260.12
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Room F2	Miami or Roosevelt	1239	12	81.76	219.38	3.78	2.86	2.50	11.9372	175.23
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	1240	12	77.24	207.44	4.17	3.23	2.70	11.9219	140.84
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F3	Sacaton	1241	12	78.37	202.62	2.74	2.08	1.80	11.9668	331.53
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Firepit F30[a]	Miami or Roosevelt	1246	12	79.10	190.16	4.29	3.17	2.90	11.9211	139.50
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	1242	11	79.80	185.28	7.00	5.11	4.80	10.8312	59.24
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F11	Miami or Roosevelt	1243	11	86.95	216.13	4.01	2.88	2.80	10.9449	181.48
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	1245	11	83.55	190.68	3.90	2.82	2.70	10.9475	190.52
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	1244	10	86.29	86.50	6.24	4.14	4.70	9.9014	91.30
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	1247	11	83.00	224.70	6.15	4.61	4.10	10.8658	74.50
TCAP	AZ U:3:286 / 06-1352	Boatyard	Occupation Surface F2[a]	Cienega	1996	10	85.98	218.41	4.14	3.00	2.90	9.9523	188.86
TCAP	AZ U:3:286 / 06-1352	Boatyard	Pit Structure F8	Gila Butte	1994	11	79.53	58.75	1.50	0.91	1.20	10.9935	1528.27
TCAP	AZ U:3:287 / 06-1353		Horno F2[a]	Miami or Roosevelt	1990	12	85.42	192.54	3.40	2.43	2.40	11.9520	228.99

Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Crematorium 24[a]	Santa Cruz	1939	11	80.32	57.15	2.84	1.75	2.30	10.9762	420.43
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Crematorium 25[a]	Santa Cruz	1940	11	79.82	54.67	1.84	1.13	1.50	10.9900	1003.64
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Crematorium F26[a]	Santa Cruz	1937	10	79.59	65.10	3.72	2.26	3.10	9.9677	278.55
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Horno F13[a]	Gila Butte	1943	11	81.75	68.88	2.12	1.32	1.70	10.9866	745.95
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	1948	11	82.21	67.12	1.30	0.82	1.00	10.9949	1956.66
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F15	Santa Cruz-Sacaton (transition)	1947	12	89.21	141.37	2.44	1.69	1.80	11.9760	457.84
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F17	Gila Butte	1942	10	82.26	60.24	4.43	2.79	3.50	9.9526	189.78
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F2	Gila Butte	1949	12	81.97	67.20	2.85	1.78	2.30	11.9705	372.34
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F21	Santa Cruz	1950	10	88.14	191.87	4.96	3.49	3.50	9.9337	135.78
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	1952	10	81.98	77.87	4.68	2.94	3.70	9.9472	170.58
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	1945	12	76.58	197.88	3.33	2.53	2.20	11.9510	224.58
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F58	Sacaton	1941	12	75.58	201.88	4.80	3.71	3.10	11.8970	106.76
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	1951	11	89.18	154.63	1.74	1.21	1.30	10.9899	991.17
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	1954	12	79.97	189.25	5.37	3.95	3.60	11.8775	89.78
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F35	Miami or Roosevelt	1957	11	84.43	220.06	2.37	1.75	1.60	10.9801	503.62
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	1956	12	83.52	207.39	5.68	4.19	3.90	11.8627	80.13
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	1958	11	84.76	227.21	3.10	2.28	2.10	10.9662	295.92
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	1946	6	85.77	74.29	4.28	2.82	3.20	5.9866	372.92
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F177	Gila Butte	2011	12	82.10	74.65	2.01	1.26	1.60	11.9852	744.86
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F20	Sacaton	1955	12	74.16	191.75	1.84	1.40	1.20	11.9850	732.32
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	1953	10	74.64	202.07	2.93	2.28	1.90	9.9743	350.31
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Crematorium F140[a]	Santa Cruz	2027	12	81.72	64.95	1.46	0.91	1.20	11.9922	1418.98
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Room F205	Ash Creek or Miami	1961	12	76.55	185.64	2.10	1.55	1.40	11.9810	579.76
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	2023	9	79.90	205.13	6.20	4.68	4.10	8.9133	92.31
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F104	Santa Cruz	1964	9	87.07	79.32	1.85	1.24	1.40	8.9931	1156.51
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	1959	12	75.44	207.32	3.99	3.12	2.50	11.9278	152.30
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F201	Santa Cruz	1960	12	80.46	66.38	1.90	1.16	1.50	11.9871	855.76
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	1962	12	75.28	208.64	2.58	2.03	1.60	11.9695	360.68
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	1963	12	78.61	207.91	4.08	3.13	2.70	11.9259	148.49
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	2044	12	82.38	207.51	2.67	1.99	1.80	11.9691	355.54
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	1968	11	78.67	192.22	2.23	1.66	1.50	10.9823	564.14

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Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	1969	12	78.53	186.56	2.20	1.62	1.50	11.9792	529.58
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	1966	11	76.42	193.73	2.52	1.90	1.70	10.9771	436.38
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	2057	12	82.09	189.80	2.76	2.01	1.90	11.9677	340.57
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	2055	11	75.81	208.13	6.72	5.26	4.30	10.8332	59.94
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F5	Gila	2056	11	83.24	266.58	5.25	3.94	3.50	10.9017	101.75
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F1	Sacaton	1974	11	86.77	286.07	2.52	1.81	1.80	10.9782	458.03
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	1971	11	79.35	195.50	5.37	4.01	3.60	10.8977	97.78
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	1972	11	82.65	232.69	3.06	2.31	2.00	10.9662	295.90
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F3	Sacaton	1970	13	87.87	242.64	3.44	2.45	2.40	12.9414	204.88
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F4	Sacaton	1973	12	87.25	118.71	3.68	2.50	2.70	11.9465	205.74
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	3416	11	68.42	156.39	4.02	2.65	3.05	10.9492	196.66
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	3419	7	85.48	181.61	6.84	4.82	4.85	6.9462	111.48
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	3418	12	79.64	203.64	4.44	3.34	2.95	11.9141	128.01
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	3417	9	82.50	182.97	4.94	3.54	3.46	8.9476	152.54
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	3426	5	82.74	225.91	6.44	4.82	4.30	4.9789	189.58
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	3428	12	84.38	220.80	4.39	3.22	2.99	11.9181	134.24
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Horno F19[a]	Sacaton	3429	8	81.56	188.32	6.01	4.35	4.15	7.9408	118.32
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	3433	12	87.76	197.43	2.11	1.48	1.50	11.9818	604.26
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	3431	5	83.75	293.03	7.10	5.29	4.76	4.9745	156.84
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	3430	6	81.50	184.89	5.64	4.06	3.91	5.9746	197.01
Wheatfields	AZ V:9:325 / 02-907	JR	Cremation F53[a]	Gila Butte	3436	7	79.91	63.30	1.57	0.95	1.29	6.9975	2444.26
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56[a]	Sacaton	3446	5	84.36	205.23	2.54	1.85	1.75	4.9968	1247.00
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F62[a]	Sacaton	3440	8	81.60	187.45	4.71	3.41	3.26	7.9635	192.01
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	3445	8	83.35	48.30	3.83	2.44	3.00	7.9787	329.30
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	3441	8	83.47	316.28	5.05	3.59	3.55	7.9589	170.21
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	3443	9	78.57	45.53	4.14	2.49	3.43	8.9690	258.11
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	3439	9	85.10	205.82	5.44	3.93	3.77	8.9360	124.95
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	3444	6	79.25	178.48	3.43	2.46	2.39	5.9906	533.03
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	3437	9	77.81	200.51	3.09	2.34	2.05	8.9782	367.57
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	3438	8	85.40	176.93	3.59	2.52	2.55	7.9794	340.14
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	3447	12	83.29	216.42	3.02	2.24	2.04	11.9606	279.46
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	3460	8	75.62	205.63	4.12	3.19	2.65	7.9701	234.43

Project Name	Site Number[b]	Site Name	Feature Type and No.	Phase or Period[c]	ARN[d]	n[e]	PLat[f]	PLong[f]	dm[g]	dp[g]	A_{95}[h]	r[i]	k[j]
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	3459	9	78.82	190.20	1.76	1.30	1.20	8.9931	1159.54
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	3455	8	78.92	183.48	3.51	2.55	2.42	7.9796	343.78
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	3457	9	86.15	203.87	6.08	4.35	4.26	8.9209	101.18
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	3450	11	84.92	177.95	2.91	2.05	2.07	10.9715	350.43
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	3449	8	84.29	211.06	4.16	3.04	2.85	7.9713	243.59
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	3448	9	88.17	218.46	2.07	1.46	1.47	8.9909	878.08
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	3453	9	85.71	200.23	2.98	2.13	2.08	8.9809	418.58
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	3451	10	86.55	235.67	3.93	2.83	2.73	9.9573	210.80
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Horno F31[a]	Sacaton	3464	9	75.73	180.98	2.76	2.01	1.89	8.9833	478.79
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	3462	7	86.48	276.49	5.57	4.00	3.87	6.9635	164.51
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	3467	7	85.00	49.83	2.70	1.76	2.07	6.9922	767.82

[a] Denotes non-architectural features that were not included in Table B.2.
[b] Site numbers are ASM / TNF unless otherwise noted. TNF designations are preceded by AR-03-12-.
[c] Archaeological periods and phases for some contexts have been corrected as discussed in Chapter 3.
[d] ARN is the Archaeomagnetic Reference Number for archaeomagnetic dating samples in the SRI Archaeomagnetic Data Base.
[e] n is the number of specimens used to compute the mean.
[f] PLAT and PLONG are the paleolatitude and paleolongitude of the virtual geomagnetic pole (VGP).
[g] *dm* and *dp* are the errors associated with the VGP.
[h] A_{95} is the angle of 95% confidence associated with the data.
[i] r is the estimated vector sum of the VGP.
[j] k is the estimated precision of the VGP.

Table B.5. Regional Ceramic Data Set

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Ash Creek	AZ U:3:46 (ASU)	Mesita Colorado	Pit Structure 2	Colonial		no ceramic counts	n/a
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Pit Structure 1	Sacaton		no ceramic counts	n/a
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Room 5	Gila		no ceramic counts	n/a
Ash Creek	AZ U:3:51 (ASU)	Tres Casitas	Pit Structure 1	Sacaton		no ceramic counts	n/a
Ash Creek	AZ U:3:86 (ASU)	Tres Salas	Room 2	Classic		no ceramic counts	n/a
Ash Creek	AZ U:4:13 (ASU)	Buff	Pit Structure 1	Sacaton		no ceramic counts	n/a
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown corrugated	Tonto corrugated	34
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	brown plain	1
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	Flying V Plain	8
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	Gila Plain	23
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	Tonto Plain	53
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	Tonto Plain, Polles	79
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	Tonto Plain, Tonto and Pinal	55
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	brown plain	Wingfield Plain	4
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	indeterminate	indeterminate polychrome	1
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	red corrugated	Salado Red Corrugated	2
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	red plain	red plain	5
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	Roosevelt Red Ware	Gila Polychrome	6
Carlota	AZ U:12:58 / 02-1120	–	Room F6	Roosevelt or Gila	Roosevelt Red Ware	Tonto Polychrome	1
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown corrugated	Tonto corrugated	27
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown plain	Flying V Plain	2
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown plain	Gila Plain	150
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown plain	Tonto Plain	101
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown plain	Tonto Plain, Polles	292
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown plain	Tonto Plain, Tonto and Pinal	482
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	brown plain	Wingfield Plain	76
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	Cibola White Ware	Escavada Black-on-white	1
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	Cibola White Ware	Kiatuthlanna Black-on-white	1
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	Hohokam Buff Ware	indeterminate red-on-buff	3
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	red corrugated	Salado Red Corrugated	2
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	red plain	red plain	4
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	red plain	Salado Red	33
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	red plain	Tonto Red	74

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	Roosevelt Red Ware	Gila Polychrome	26
Carlota	AZ U:12:69 / 02-1164	–	Room F9	Classic	White Mountain Red Ware	Wingate Black-on-red	1
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	brown plain	brown plain	9
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	brown plain	Gila Plain	205
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	brown plain	Tonto Plain, Polles	3
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	brown plain	Tonto Plain, Tonto and Pinal	61
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	brown plain	Wingfield Plain	9
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	Cibola White Ware	Escavada Black-on-white	1
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	Cibola White Ware	Reserve Black-on-white	1
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	Hohokam Buff Ware	indeterminate buff	1
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	Hohokam Buff Ware	Sacaton Red-on-buff	6
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	red plain	red plain	1
Carlota	AZ V:9:233 / 02-436	–	Pit Structure F4	Ash Creek	red plain	Tonto Red	2
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	brown corrugated	Tonto corrugated	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	brown plain	Gila Plain	214
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	brown plain	Tonto Plain, Tonto and Pinal	1,029
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	brown plain	Wingfield Plain	639
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	Cibola White Ware	Escavada Black-on-white	2
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	Cibola White Ware	indeterminate	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	Hohokam Buff Ware	indeterminate buff	10
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	Hohokam Buff Ware	Sacaton Red-on-buff	5
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	red plain	red plain	3
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	red plain	Tonto Red	13
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F38	Ash Creek	red plain	Wingfield Red	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F56	Ash Creek	brown plain	Flying V Plain	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F56	Ash Creek	brown plain	Gila Plain	17
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F56	Ash Creek	brown plain	Tonto Plain, Tonto and Pinal	76
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F56	Ash Creek	brown plain	Wingfield Plain	36
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F56	Ash Creek	red plain	Tonto Red	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	brown plain	Gila Plain	114
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	brown plain	Tonto Plain, Polles	3
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	brown plain	Tonto Plain, Tonto and Pinal	353
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	brown plain	Wingfield Plain	249
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	Cibola White Ware	Escavada Black-on-white	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	Cibola White Ware	indeterminate	2
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	Cibola White Ware	Puerco Black-on-white	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	Hohokam Buff Ware	indeterminate buff	2
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	Hohokam Buff Ware	Sacaton or Casa Grande Red-on-buff	3
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	red plain	Salado Red	2
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F8	Ash Creek	red plain	Tonto Red	4
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	brown plain	Gila Plain	216
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	brown plain	Tonto Plain, Polles	82
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	brown plain	Tonto Plain, Tonto and Pinal	463
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	brown plain	Wingfield Plain	412
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	Cibola White Ware	indeterminate	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	Cibola White Ware	Reserve Black-on-white	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	Hohokam Buff Ware	indeterminate buff	6
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	Hohokam Buff Ware	Sacaton or Casa Grande Red-on-buff	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	Little Colorado White Ware	indeterminate	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	red plain	red plain	3
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	red plain	Sacaton Red	1
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	red plain	Tonto Red	3
Carlota	AZ V:9:237 / 02-433	–	Pit Structure F9	Ash Creek	red plain	Wingfield Red	4
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	brown corrugated	Tonto corrugated	1
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	brown plain	brown plain	388
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	brown plain	Gila Plain	330
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	brown plain	Tonto Plain, Tonto and Pinal	365
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	brown plain	Wingfield Plain	128
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	Cibola White Ware	Reserve Black-on-white	2
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	Hohokam Buff Ware	Casa Grande Red-on-buff	7
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	Hohokam Buff Ware	indeterminate buff	24
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	Hohokam Buff Ware	Sacaton Red-on-buff	11
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	indeterminate white ware	indeterminate	1
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	red plain	red plain	4
Carlota	AZ V:9:244 / 02-425	–	Pit Structure F10	Ash Creek	red plain	Tonto Red	2
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown corrugated	Tonto corrugated	16
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	brown plain	4

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	Flying V Plain	2
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	Gila Plain	70
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	Tonto Plain	48
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	Tonto Plain, Polles	30
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	Tonto Plain, Tonto and Pinal	647
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	brown plain	Wingfield Plain	5
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	Cibola White Ware	Escavada Black-on-white	2
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	red plain	red plain	5
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	red plain	Salado Red	33
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	red plain	Tonto Red	40
Carlota	AZ V:9:262 / 02-1145	–	Room F3	Roosevelt	Roosevelt Red Ware	Gila Polychrome	25
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Firepit F224	Miami		no ceramic counts	n/a
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Firepit F225	Miami		no ceramic counts	n/a
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	brown corrugated	brown corrugated	61
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	brown plain	brown plain	360
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Cibola White Ware	indeterminate	16
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Cibola White Ware	Roosevelt Black-on-white	4
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	indeterminate	indeterminate Showlow or Roosevelt Red ware	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	indeterminate white ware	indeterminate black-on-white	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	Holbrook or Walnut Black-on-white	6
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	indeterminate	19
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	Leupp Black-on-white	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	Padre Black-on-white	3
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	St. Josephs Black-on-white	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white	4
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	red corrugated	Salado Red Corrugated	164
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	red plain	red plain	200
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F179	Miami or Roosevelt	Showlow Red Ware	Showlow Black-on-red (Holbrook Style)	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	brown corrugated	brown corrugated	10

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	brown corrugated	brown corrugated	10
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	brown plain	brown plain	92
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	brown plain	brown plain	92
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	Cibola White Ware	indeterminate	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	Cibola White Ware	indeterminate	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	indeterminate	indeterminate black-on-red	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	indeterminate	indeterminate black-on-red	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	Mogollon Brown Ware	Reserve Smudged Indented Corrugated (painted)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	Mogollon Brown Ware	Reserve Smudged Indented Corrugated (painted)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	Mogollon Brown Ware	Reserve Smudged Indented Corrugated (painted)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	Mogollon Brown Ware	Reserve Smudged Indented Corrugated (painted)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	red corrugated	Salado Red Corrugated	50
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	red corrugated	Salado Red Corrugated	50
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	red plain	red plain	87
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F19	Miami or Roosevelt	red plain	red plain	87
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	brown corrugated	brown corrugated	23
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	brown plain	brown plain	389
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Cibola White Ware	indeterminate	15
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Cibola White Ware	Puerco or Reserve Black-on-white	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Little Colorado White Ware	indeterminate	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Little Colorado White Ware	Leupp Black-on-white	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	red corrugated	Salado Red Corrugated	160
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F34	Miami or Roosevelt	red plain	red plain	340
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	brown corrugated	brown corrugated	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	brown corrugated	brown corrugated	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	brown plain	brown plain	81
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	brown plain	brown plain	81
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	Little Colorado White Ware	indeterminate	4
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	Little Colorado White Ware	indeterminate	4
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white	2
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	red corrugated	Salado Red Corrugated	28
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	red corrugated	Salado Red Corrugated	28
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	red plain	red plain	59
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Pit Room F99	Miami or Roosevelt	red plain	red plain	59
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	brown plain	brown plain	198
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	brown plain	Wingfield Plain	25
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	Hohokam Buff Ware	Sacaton Red-on-buff	2
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	Little Colorado White Ware	Holbrook Black-on-white	1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	Little Colorado White Ware	Holbrook or Walnut Black-on-white	2
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	Little Colorado White Ware	indeterminate	1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F1	Miami	red plain	red plain	16
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	brown plain	brown plain	155
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	brown plain	Wingfield Plain	124
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	Cibola White Ware	indeterminate	1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	Hohokam Buff Ware	indeterminate buff	1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	Hohokam Buff Ware	indeterminate red-on-buff	1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Pit Structure F3	Miami	red plain	red plain	14
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	brown corrugated	brown corrugated	17
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	brown plain	brown plain	136
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	Cibola White Ware	indeterminate	1
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	1
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	red corrugated	Salado Red Corrugated	52
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	red plain	red plain	37
CCP	AZ U:3:410 / 06-2017	Crane	Pit Structure F30	Miami or Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	brown corrugated	Tonto corrugated	116
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	brown corrugated	Tonto corrugated	116
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	indeterminate	indeterminate black-on-red	2
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	indeterminate	indeterminate black-on-red	2

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	indeterminate white ware	indeterminate black-on-white	19
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	indeterminate white ware	indeterminate black-on-white	19
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	11
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	11
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	red plain	red plain	168
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	red plain	red plain	168
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	red plain	Salado Red	62
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 4	Roosevelt	red plain	Salado Red	62
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 5	Roosevelt	brown corrugated	Tonto corrugated	56
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 5	Roosevelt	brown plain	brown plain	8
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 5	Roosevelt	indeterminate white ware	indeterminate black-on-white	30
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 5	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	14
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 5	Roosevelt	red corrugated	Salado Red Corrugated	31
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Room 5	Roosevelt	red plain	red plain	95
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	brown corrugated	brown corrugated (obliterated)	48
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	brown plain	brown plain	164
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	indeterminate white ware	indeterminate black-on-white	1
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	red corrugated	Salado Red Corrugated	8
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	red plain	red plain	1
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	red plain	Salado Red	1
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	White Mountain Red Ware	indeterminate	5
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	4
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Room 2	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	2
Mazatzal Rest Area	AZ O:15:110 / 06-1644	The Broken Hardt Site	Horno F7	Gila	brown plain	brown plain	24
Mazatzal Rest Area	AZ O:15:110 / 06-1644	The Broken Hardt Site	Horno F7	Gila	red plain	red plain	3
Mazatzal Rest Area	AZ O:15:111 / 06-1645	Partition House	Pit Structure F14	Gila	brown plain	brown plain	39
Mazatzal Rest Area	AZ O:15:111 / 06-1645	Partition House	Pit Structure F14	Gila	red plain	red plain	7
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	brown plain	brown plain	664
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	brown plain	Gila Plain	60
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	brown plain	Tonto Plain	148
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	Cibola White Ware	indeterminate	5
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	Hohokam Buff Ware	indeterminate buff	7
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	indeterminate white ware	indeterminate	2
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	red plain	Gila Red	1
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	red plain	red plain	50

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Pithouse F1	Sacaton	red plain	Tonto Red	5
RCD	AZ V:5:1 / 06-25	Pyramid Point	Extramural Hearth F30	unplaced		no ceramic counts	n/a
RCD	AZ V:5:1 / 06-25	Pyramid Point	Extramural Hearth F69	Roosevelt		no ceramic counts	n/a
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	brown corrugated	brown corrugated (indented obliterated)	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	brown corrugated	brown corrugated (indeterminate)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Cibola White Ware	indeterminate	7
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Cibola White Ware	Snowflake or Pinedale Black-on-white	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Hohokam Buff Ware	indeterminate buff	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Hohokam Buff Ware	Sacaton Red-on-buff	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	red corrugated	Salado Red Corrugated	5
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	red plain	red plain	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	Roosevelt Red Ware	Pinto or Gila Black-on-red	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Pit Room F70	Ash Creek	White Mountain Red Ware	indeterminate black-on-red	2
RCD	AZ V:5:1 / 06-25	Pyramid Point	Roasting Pit F79	Roosevelt	brown plain	brown plain	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Roasting Pit F79	Roosevelt	red corrugated	Salado Red Corrugated	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Roasting Pit F79	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Roasting Pit F79	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	6
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	Cibola White Ware	indeterminate	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	red corrugated	Salado Red Corrugated	11
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	red plain	red plain	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	Roosevelt Red Ware	indeterminate polychrome	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	Salado Red	Salado White-on-red (corrugated)	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	Salado Red	Salado White-on-red (corrugated)	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F31	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	13
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	brown corrugated	brown corrugated (obliterated)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	brown plain	brown plain	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Cibola White Ware	indeterminate	10
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Cibola White Ware	Pinedale Black-on-white	2
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Hohokam Buff Ware	indeterminate buff	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	indeterminate	indeterminate polychrome	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	red corrugated	Salado Red Corrugated	36
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	red plain	red plain	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	3
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	2
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Salado Red	Salado White-on-red (corrugated)	4
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	Salado Red	Salado White-on-red (corrugated)	4
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F36	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	15
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	brown corrugated	brown corrugated (patterned)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	brown plain	brown plain	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Cibola White Ware	indeterminate	4
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	red corrugated	Salado Red Corrugated	8
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	5
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	White Mountain Red Ware	Cedar Creek Polychrome	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F61	Roosevelt	White Mountain Red Ware	Pinedale or Cedar Creek Polychrome	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	11
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	brown corrugated	brown corrugated (indeterminate)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	brown plain	brown plain	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	Cibola White Ware	indeterminate	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	red corrugated	Salado Red Corrugated	21
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:1 / 06-25	Pyramid Point	Room F67	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	brown corrugated	brown corrugated (indented flattened)	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	29
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	brown corrugated	brown corrugated (indeterminate)	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	brown plain	brown plain	8
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Cibola White Ware	indeterminate	12
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Mogollon Brown Ware	Linden Corrugated	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	red corrugated	Salado Red Corrugated	48
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	red plain	red plain	19
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	White Mountain Red Ware	Pinedale or Cedar Creek Polychrome	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F13	Roosevelt	White Mountain Red Ware	St. John's Polychrome	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	19
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	19
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	brown plain	brown plain	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	brown plain	brown plain	3
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	indeterminate	15
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	indeterminate	15
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Puerco Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Puerco Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	2
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	red corrugated	Salado Red Corrugated	31
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	red corrugated	Salado Red Corrugated	31
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	red plain	red plain	12
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	red plain	red plain	12
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:106 / 06-217	Porcupine	Pit Room F4	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	brown corrugated	brown corrugated (obliterated)	1
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	brown plain	brown plain	5
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	Cibola White Ware	indeterminate	4
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	Cibola White Ware	Red Mesa, Puerco, Escavada, Snowflake, or Gallup Black-on-white	1
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	red corrugated	Salado Red Corrugated	10
RCD	AZ V:5:123 / 06-1002	–	Room F1	Miami	red plain	red plain	3
RCD	AZ V:5:176 / 06-2029	–	Pit Structure F9	Sacaton	brown plain	brown plain	8
RCD	AZ V:5:176 / 06-2029	–	Pit Structure F9	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
RCD	AZ V:5:176 / 06-2029	–	Pit Structure F9	Sacaton	Hohokam Buff Ware	indeterminate buff	2
RCD	AZ V:5:176 / 06-2029	–	Pit Structure F9	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	2
RCD	AZ V:5:176 / 06-2029	–	Pit Structure F9	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	brown plain	brown plain	32
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	6
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	61
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Hohokam Buff Ware	indeterminate buff	8
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	20
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Hohokam Buff Ware	Snaketown or Gila Butte Red-on-buff	8
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Hohokam Buff Ware	Snaketown Red-on-buff	2
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Pit Structure F20	Gila Butte	Tusayan White Ware	Lino Gray, Fugitive Red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	brown corrugated	brown corrugated (indented flattened)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	brown corrugated	brown corrugated (indented)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	brown plain	brown plain	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Cibola White Ware	indeterminate	20
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Cibola White Ware	Reserve Black-on-white	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	11
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	red corrugated	Salado Red Corrugated	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	red plain	red plain	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F177	Miami or Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	brown plain	brown plain	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	brown plain	brown plain	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	brown plain	brown plain	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Cibola White Ware	indeterminate	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Cibola White Ware	indeterminate	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Cibola White Ware	indeterminate	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	red plain	red plain	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	red plain	red plain	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F274	Miami or Roosevelt	red plain	red plain	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	14
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	brown plain	brown plain	15
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Cibola White Ware	indeterminate	15
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Cibola White Ware	Pinedale Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Hohokam Buff Ware	Casa Grande Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Hohokam Buff Ware	indeterminate buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	red corrugated	Salado Red Corrugated	17
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	red plain	red plain	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F365	Roosevelt	White Mountain Red Ware	St. John's Polychrome	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	brown corrugated	brown corrugated (indented flattened)	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	brown corrugated	brown corrugated (indented obliterated)	31
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	brown corrugated	brown corrugated (indeterminate)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	brown plain	brown plain	11
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Cibola White Ware	indeterminate	25
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	16
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	12
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	9
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Little Colorado White Ware	Walnut, Padre, or Leupp Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Mogollon Brown Ware	Linden Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	red corrugated	Salado Red Corrugated	25
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	red plain	Gila or Salt Red	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	red plain	red plain	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	2

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Salado Red	Salado White-on-red (corrugated)	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	Salado Red	Salado White-on-red (corrugated)	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	White Mountain Red Ware	indeterminate black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	White Mountain Red Ware	indeterminate polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F455	Miami or Roosevelt	White Mountain Red Ware	St. John's Polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	brown corrugated	brown corrugated (indented obliterated)	9
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	brown plain	brown plain	8
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Cibola White Ware	indeterminate	21
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Pinedale Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Reserve Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	12
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	9
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Hohokam Buff Ware	indeterminate buff	12
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Little Colorado White Ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Little Colorado White Ware	indeterminate black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	red corrugated	Salado Red Corrugated	25
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	red plain	red plain	8
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Salado Red	Salado White-on-red (corrugated)	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	Salado Red	Salado White-on-red (corrugated)	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Room F5	Miami or Roosevelt	White Mountain Red Ware	indeterminate black-on-red	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	brown corrugated	brown corrugated (indented obliterated)	2

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	brown plain	brown plain	28
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Cibola White Ware	indeterminate	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Cibola White Ware	Puerco, Escavada, Snowflake, Gallup, or Reserve Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Cibola White Ware	Red Mesa Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	9
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	14
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Hohokam Buff Ware	indeterminate buff	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	8
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	indeterminate white ware	indeterminate	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Little Colorado White Ware	indeterminate black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Mogollon Brown Ware	Heber Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	red corrugated	Salado Red Corrugated	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	red plain	Gila or Salt Red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F214	Gila Butte	red plain	red plain	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	brown plain	brown plain	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Cibola White Ware	indeterminate	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	Casa Grande Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	Gila Butte Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	indeterminate buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Little Colorado White Ware	indeterminate	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Mogollon Brown Ware	Linden Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	red plain	Gila or Salt Red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F449	Colonial	red plain	red plain	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Pit Structure F471	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	11
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	brown corrugated	brown corrugated (obliterated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	brown plain	brown plain	25
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	indeterminate	32
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	Kiatuthlanna or Red Mesa Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	Pinedale Black-on-white	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	Puerco, Escavada, Snowflake, Gallup, or Reserve Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	8
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Hohokam Buff Ware	indeterminate buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	8
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Clapboard Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	4

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	red corrugated	Salado Red Corrugated	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	red plain	Gila or Salt Red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	red plain	red plain	23
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F105	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	brown corrugated	brown corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	brown corrugated	brown corrugated (indented flattened)	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	29
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	brown corrugated	brown corrugated (indeterminate)	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	brown corrugated	brown corrugated (patterned)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	brown plain	brown plain	14
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	Escavada Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	indeterminate	26
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	Pinedale Black-on-white	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	Reserve Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Gray Plain	Gray Plain	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Hohokam Buff Ware	indeterminate buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	indeterminate white ware	indeterminate	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Little Colorado White Ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Mogollon Brown Ware	Maverick Mountain-like polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	red corrugated	Salado Red Corrugated	50
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	red plain	red plain	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Salado Red	Salado White-on-red (corrugated)	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	Salado Red	Salado White-on-red (corrugated)	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	White Mountain Red Ware	indeterminate	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F11	Roosevelt	White Mountain Red Ware	Puerco Black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	brown corrugated	brown corrugated (clapboard)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	brown corrugated	brown corrugated (indented flattened)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	16
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	brown plain	brown plain	16
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	indeterminate	32
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	Pinedale Black-on-white	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	Puerco Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	Puerco, Escavada, Snowflake, Gallup, or Reserve Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	6
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Little Colorado White Ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	red corrugated	Salado Red Corrugated	63
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	red plain	red plain	10
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F137	Roosevelt	White Mountain Red Ware	St. John’s Polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	brown plain	brown plain	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Cibola White Ware	indeterminate	13
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	red corrugated	Salado Red Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F144	Roosevelt	red plain	red plain	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	brown plain	brown plain	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	brown plain	brown plain	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	brown plain	brown plain	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Cibola White Ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Cibola White Ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Cibola White Ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	red corrugated	Salado Red Corrugated	4

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	red corrugated	Salado Red Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	red corrugated	Salado Red Corrugated	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	red plain	red plain	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	red plain	red plain	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F324	Roosevelt	red plain	red plain	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	brown corrugated	brown corrugated (indented flattened)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	14
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	brown corrugated	brown corrugated (indeterminate)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	brown plain	brown plain	7
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Cibola White Ware	indeterminate	22
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Cibola White Ware	Snowflake Black-on-white	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	29
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	26
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Hohokam Buff Ware	indeterminate buff	23
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	17
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	5
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Mogollon Brown Ware	Linden Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	red corrugated	Salado Red Corrugated	26
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	red plain	red plain	3
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	4
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	1
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:4 / 06-26	Meddler Point	Room F77	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F111	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F111	Roosevelt	brown plain	brown plain	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F111	Roosevelt	red corrugated	Salado Red Corrugated	11
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F111	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	brown corrugated	brown corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	brown corrugated	brown corrugated (flattened)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	brown corrugated	brown corrugated (indented flattened)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	14
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	brown corrugated	brown corrugated (obliterated)	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	brown plain	brown plain	6
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Cibola White Ware	indeterminate	14
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Cibola White Ware	Pinedale Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Cibola White Ware	Reserve Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	indeterminate	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style B)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	red corrugated	Salado Red Corrugated	17
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	red plain	red plain	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	Salado Red	Salado White-on-red (corrugated)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	White Mountain Red Ware	indeterminate	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F27	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	brown corrugated	brown corrugated (flattened)	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	brown corrugated	brown corrugated (indented flattened)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	50
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	brown corrugated	brown corrugated (indented)	19
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	brown plain	brown plain	14
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	indeterminate	58
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	Pinedale Black-on-white	14
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	Reserve Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	Snowflake Black-on-white	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	Casa Grande Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	Gila Butte Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	indeterminate buff	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	indeterminate	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	indeterminate white ware	indeterminate	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	indeterminate corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	Linden Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Clapboard Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	3

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	red corrugated	Salado Red Corrugated	109
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	red plain	red plain	11
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	indeterminate	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red (corrugated)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	10
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Salado Red	Salado White-on-red (corrugated)	21
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	Salado Red	Salado White-on-red (corrugated)	21
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	White Mountain Red Ware	Cedar Creek Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	White Mountain Red Ware	indeterminate	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F56	Roosevelt	White Mountain Red Ware	St. John's Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	110
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	brown corrugated	brown corrugated (obliterated)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	brown corrugated	brown corrugated (patterned)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	brown plain	brown plain	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Cibola White Ware	indeterminate	18
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Cibola White Ware	Pinedale Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Hopi	Black-on-orange	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	red corrugated	Salado Red Corrugated	114
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	red plain	red plain	11
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Roosevelt Red Ware	indeterminate polychrome	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Salado Red	Salado White-on-red (corrugated)	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	Salado Red	Salado White-on-red (corrugated)	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	White Mountain Red Ware	indeterminate	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	9
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	White Mountain Red Ware	indeterminate polychrome	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F58	Roosevelt	White Mountain Red Ware	Pinedale or Cedar Creek Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	brown corrugated	brown corrugated (indented flattened)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	56
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	brown corrugated	brown corrugated (indeterminate)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	brown plain	brown plain	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Cibola White Ware	indeterminate	63
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Cibola White Ware	Pinedale Black-on-white	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Cibola White Ware	Red Mesa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Hohokam Buff Ware	indeterminate buff	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	indeterminate	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	indeterminate white ware	indeterminate black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	2

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	red corrugated	Salado Red Corrugated	80
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	red plain	Gila or Salt Red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	red plain	red plain	17
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	Gila Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	indeterminate	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	indeterminate polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Salado Red	Salado White-on-red (corrugated)	17
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Salado Red	Salado White-on-red (corrugated)	17
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	Showlow Red Ware	Show Low Black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	White Mountain Red Ware	Cedar Creek or Fourmile Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	6
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	White Mountain Red Ware	indeterminate polychrome	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F70	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	brown corrugated	brown corrugated (clapboard)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	brown corrugated	brown corrugated (indented flattened)	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	57
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	brown corrugated	brown corrugated (indeterminate)	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	brown corrugated	brown corrugated (obliterated)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	brown plain	brown plain	10
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	indeterminate	88
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	Pinedale Black-on-white	11
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	Snowflake Black-on-white	5

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hohokam Buff Ware	indeterminate buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hopi	Black-on-orange	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Hopi	indeterminate orange ware	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	indeterminate	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Little Colorado White Ware	Padre Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	Heber Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	indeterminate red-on-brown (Tanque Verde Style)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	indeterminate red-on-brown (Tanque Verde Style)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	Linden Corrugated	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	11
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	red corrugated	Salado Red Corrugated	108
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	red plain	Gila or Salt Red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	red plain	red plain	21
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Roosevelt Red Ware	Gila Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red (corrugated)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	22

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Salado Red	Salado White-on-red (corrugated)	41
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	Salado Red	Salado White-on-red (corrugated)	41
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	15
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	White Mountain Red Ware	indeterminate polychrome	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F75	Roosevelt	White Mountain Red Ware	St. John's Polychrome	8
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	brown corrugated	brown corrugated (indented flattened)	12
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	168
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	brown corrugated	brown corrugated (indented)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	brown corrugated	brown corrugated (indeterminate)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	brown plain	brown plain	18
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Cibola White Ware	indeterminate	40
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Cibola White Ware	Pinedale Black-on-white	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Hohokam Buff Ware	indeterminate buff	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	15
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	indeterminate	indeterminate polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	indeterminate	indeterminate red-on-brown	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	indeterminate white ware	indeterminate	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Mogollon Brown Ware	Linden Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	red corrugated	Salado Red Corrugated	146
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	red plain	Gila or Salt Red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	red plain	red plain	26

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	9
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Salado Red	Salado White-on-red (corrugated)	19
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	Salado Red	Salado White-on-red (corrugated)	19
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	Cedar Creek or Fourmile Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	Cedar Creek Polychrome	6
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	indeterminate	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	8
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	indeterminate polychrome	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	Pinedale or Cedar Creek Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F76	Roosevelt	White Mountain Red Ware	St. John's Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated (clapboard)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated (flattened)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated (indented flattened)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	176
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated (indeterminate)	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown corrugated	brown corrugated (obliterated)	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	brown plain	brown plain	50
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	indeterminate	190
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Kiatuthlanna or Red Mesa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Pinedale Black-on-white	29
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Reserve Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	14
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Snowflake Black-on-white	4

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Snowflake or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	9
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	indeterminate buff	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	indeterminate red-on-brown	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	10
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	4
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	indeterminate	indeterminate polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	indeterminate	indeterminate red-on-brown	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	indeterminate white ware	indeterminate	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	indeterminate white ware	indeterminate black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	indeterminate corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	Linden Corrugated	10
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	Maverick Mountain-like polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald Clapboard Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	18
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald Indented Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Clapboard Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Corrugated	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Indented Flattened Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	35
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	35
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	red corrugated	Salado Red Corrugated	211
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	red plain	red plain	48
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	Gila Black-on-red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	indeterminate Red-on-brown (Tonto Basin?)	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red (corrugated)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	22
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Salado Red	Salado White-on-red (corrugated)	43
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	Salado Red	Salado White-on-red (corrugated)	43
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	19
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	White Mountain Red Ware	indeterminate polychrome	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	White Mountain Red Ware	Pinedale or Cedar Creek Polychrome	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F9	Roosevelt	White Mountain Red Ware	St. John's Polychrome	9
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	brown corrugated	brown corrugated (flattened)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	brown plain	brown plain	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Cibola White Ware	indeterminate	14
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Hohokam Buff Ware	indeterminate buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	red corrugated	Salado Red Corrugated	28
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	red plain	red plain	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Salado Red	Salado White-on-red (corrugated)	2

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	Salado Red	Salado White-on-red (corrugated)	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	White Mountain Red Ware	Cedar Creek or Fourmile Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	White Mountain Red Ware	Cedar Creek Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	White Mountain Red Ware	indeterminate polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F93	Roosevelt	White Mountain Red Ware	St. John's Polychrome	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	brown corrugated	brown corrugated (clapboard)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	brown corrugated	brown corrugated (indented obliterated)	46
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	brown corrugated	brown corrugated (indented)	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	brown plain	brown plain	8
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Cibola White Ware	indeterminate	38
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Cibola White Ware	Pinedale Black-on-white	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Cibola White Ware	Reserve or Tularosa or Pinedale Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Cibola White Ware	Snowflake Black-on-white	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Hohokam Buff Ware	indeterminate buff	7
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Hopi	Black-on-orange	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	indeterminate	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Little Colorado White Ware	indeterminate black-on-white	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Mogollon Brown Ware	Linden Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Mogollon Brown Ware	McDonald or Reserve Flattened Corrugated	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	red corrugated	Salado Red Corrugated	24
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	red plain	red plain	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-red	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	5

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Salado Red	Salado White-on-red (corrugated)	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	Salado Red	Salado White-on-red (corrugated)	5
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	White Mountain Red Ware	Cedar Creek or Fourmile Polychrome	3
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	White Mountain Red Ware	indeterminate	1
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	10
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	White Mountain Red Ware	indeterminate polychrome	2
RCD	AZ V:5:90 / 06-96	Griffin Wash	Room F95	Roosevelt	White Mountain Red Ware	Pinedale or Cedar Creek Polychrome	1
RCD	AZ V:5:98 / 06-1542	–	Pit Room F1	Classic	brown corrugated	brown corrugated (clapboard)	2
RCD	AZ V:5:98 / 06-1542	–	Pit Room F1	Classic	Cibola White Ware	indeterminate	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	brown corrugated	brown corrugated	2318
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	brown corrugated	brown corrugated (fine)	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	brown plain	brown plain	1886
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	brown plain	brown plain (smudged)	1208
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Cibola White Ware	indeterminate	104
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Cibola White Ware	Pinedale Black-on-white	146
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Cibola White Ware	Puerco Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Cibola White Ware	Snowflake Black-on-white	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Cibola White Ware	Tularosa Black-on-white	12
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Hohokam Buff Ware	indeterminate buff	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	8
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	9
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	red plain	red plain	321
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	red plain	red plain (smudged)	541
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	red plain	Salado Red	324
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Roosevelt Red Ware	Gila or Tonto Polychrome	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Roosevelt Red Ware	Gila Polychrome	154
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Roosevelt Red Ware	Tonto Polychrome	102
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Salado Red	Salado White-on-red	6
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Showlow Red Ware	Show Low Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	Tusayan White Ware	Black Mesa Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	White Mountain Red Ware	Cedar Creek Polychrome	4

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	White Mountain Red Ware	Fourmile Polychrome	284
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	White Mountain Red Ware	indeterminate	36
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	White Mountain Red Ware	indeterminate black-on-red	12
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F117	Roosevelt	White Mountain Red Ware	Showlow Polychrome	8
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	brown corrugated	brown corrugated	1171
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	brown plain	brown plain	2198
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	brown plain	brown plain (smudged)	1888
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Cibola White Ware	indeterminate	45
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Cibola White Ware	Pinedale Black-on-white	10
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Cibola White Ware	Puerco Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Cibola White Ware	Snowflake Black-on-white	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Cibola White Ware	Tularosa Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Cibola White Ware	Wepo Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Hohokam Buff Ware	indeterminate buff	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Hohokam Buff Ware	Sacaton Red-on-buff	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Little Colorado White Ware	indeterminate	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Mogollon Brown Ware	McDonald Corrugated	10
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	red plain	red plain	756
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	red plain	red plain (smudged)	72
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	red plain	Salado Red	264
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Roosevelt Red Ware	Gila Black-on-red	11
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Roosevelt Red Ware	Gila Polychrome	404
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Roosevelt Red Ware	Pinto Black-on-red	6
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Roosevelt Red Ware	Pinto Polychrome	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Roosevelt Red Ware	Tonto Polychrome	79
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	Salado Red	Salado White-on-red	9
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	White Mountain Red Ware	Cedar Creek Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	White Mountain Red Ware	Fourmile Polychrome	11
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	White Mountain Red Ware	indeterminate	9
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	White Mountain Red Ware	Pinedale Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	White Mountain Red Ware	Pinedale Polychrome	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F124	Gila	White Mountain Red Ware	St. John's Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	brown corrugated	brown corrugated	78
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	brown corrugated	brown corrugated (fine)	2

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	brown plain	brown plain	154
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	brown plain	brown plain (smudged)	106
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Cibola White Ware	indeterminate	13
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Cibola White Ware	Pinedale Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Cibola White Ware	Tularosa Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Mogollon Brown Ware	McDonald Corrugated	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Mogollon Brown Ware	San Carlos Red-on-brown	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	red plain	red plain	29
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	red plain	red plain (smudged)	23
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	red plain	Salado Red	25
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Roosevelt Red Ware	Gila Black-on-red	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Roosevelt Red Ware	Gila Polychrome	21
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	Roosevelt Red Ware	Tonto Polychrome	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	White Mountain Red Ware	Fourmile Polychrome	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F139	Gila	White Mountain Red Ware	indeterminate	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	brown corrugated	brown corrugated	1375
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	brown corrugated	brown corrugated (fine)	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	brown plain	brown plain	253
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	brown plain	brown plain (smudged)	868
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Cibola White Ware	indeterminate	16
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Cibola White Ware	Pinedale Black-on-white	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Cibola White Ware	Snowflake Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Hohokam Buff Ware	Casa Grande Red-on-buff	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Hohokam Buff Ware	Sacaton Red-on-buff	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Hohokam Buff Ware	Tanque Verde Red-on-brown	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Little Colorado White Ware	indeterminate	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Mogollon Brown Ware	McDonald Corrugated	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Mogollon Brown Ware	San Carlos Red-on-brown	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	red plain	red plain	254
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	red plain	red plain (smudged)	227
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	red plain	Salado Red	142
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Roosevelt Red Ware	Gila Black-on-red	24
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	80

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Roosevelt Red Ware	Gila Polychrome	983
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Roosevelt Red Ware	Pinto Black-on-red	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Roosevelt Red Ware	Pinto Polychrome	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Roosevelt Red Ware	Tonto Polychrome	295
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	Salado Red	Salado White-on-red	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	White Mountain Red Ware	Fourmile Polychrome	12
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	White Mountain Red Ware	indeterminate	13
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F188	Gila	White Mountain Red Ware	St. John's Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	brown corrugated	brown corrugated	329
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	brown plain	brown plain	65
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	brown plain	brown plain (smudged)	130
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Cibola White Ware	indeterminate	10
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Cibola White Ware	Pinedale Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Cibola White Ware	Snowflake Black-on-white	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Hohokam Buff Ware	Tanque Verde Red-on-brown	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Mogollon Brown Ware	McDonald Corrugated	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	red plain	red plain	65
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	red plain	red plain (smudged)	86
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	red plain	Salado Red	71
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Roosevelt Red Ware	Gila Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Roosevelt Red Ware	Gila Polychrome	10
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	Roosevelt Red Ware	Pinto Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	White Mountain Red Ware	Cedar Creek Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	White Mountain Red Ware	Fourmile Polychrome	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	White Mountain Red Ware	indeterminate	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	White Mountain Red Ware	St. John's Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F316	Gila	White Mountain Red Ware	St. John's Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	brown corrugated	brown corrugated	387
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	brown corrugated	brown corrugated (fine)	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	brown plain	brown plain	850
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	brown plain	brown plain (smudged)	117
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Cibola White Ware	indeterminate	35
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Cibola White Ware	Pinedale Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Cibola White Ware	Snowflake Black-on-white	5

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Hohokam Buff Ware	Casa Grande Red-on-buff	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Hohokam Buff Ware	Tanque Verde Red-on-brown	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Hopi	indeterminate yellow ware	8
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Little Colorado White Ware	indeterminate	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Little Colorado White Ware	Leupp Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Little Colorado White Ware	Walnut Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Mogollon Brown Ware	Maverick Mountain Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Mogollon Brown Ware	McDonald Corrugated	6
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Mogollon Brown Ware	San Carlos Red-on-brown	21
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Mogollon Brown Ware	Tucson Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	red plain	red plain	370
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	red plain	red plain (smudged)	1089
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	red plain	Salado Red	39
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Roosevelt Red Ware	Gila Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	117
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Roosevelt Red Ware	Gila Polychrome	724
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Roosevelt Red Ware	Pinto Black-on-red	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Roosevelt Red Ware	Pinto Polychrome	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	Roosevelt Red Ware	Tonto Polychrome	268
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	White Mountain Red Ware	Fourmile Polychrome	18
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	White Mountain Red Ware	indeterminate	34
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F41	Gila	White Mountain Red Ware	Wingate Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	brown corrugated	brown corrugated	848
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	brown corrugated	brown corrugated (fine)	7
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	brown plain	brown plain	729
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	brown plain	brown plain (smudged)	667
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Cibola White Ware	indeterminate	37
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Cibola White Ware	Pinedale Black-on-white	5
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Cibola White Ware	Snowflake Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Cibola White Ware	Tularosa Black-on-white	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Cibola White Ware	Wepo Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Hohokam Buff Ware	indeterminate buff	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Hohokam Buff Ware	Tanque Verde Red-on-brown	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Mogollon Brown Ware	McDonald Corrugated	9

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Mogollon Brown Ware	San Carlos Red-on-brown	7
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	red plain	red plain	91
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	red plain	red plain (smudged)	142
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	red plain	Salado Red	36
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Roosevelt Red Ware	Gila Black-on-red	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Roosevelt Red Ware	Gila Polychrome	16
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Roosevelt Red Ware	Pinto Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Roosevelt Red Ware	Pinto Polychrome	7
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Roosevelt Red Ware	Tonto Polychrome	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Salado Red	Salado White-on-red	9
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	Showlow Red Ware	Show Low Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	White Mountain Red Ware	Cedar Creek Polychrome	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	White Mountain Red Ware	Fourmile Polychrome	3
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	White Mountain Red Ware	indeterminate	11
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F56	Gila	White Mountain Red Ware	Pinedale Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	brown corrugated	brown corrugated	93
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	brown corrugated	brown corrugated (fine)	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	brown plain	brown plain	153
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	brown plain	brown plain (smudged)	196
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Cibola White Ware	indeterminate	24
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Cibola White Ware	Pinedale Black-on-white	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Cibola White Ware	Snowflake Black-on-white	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Mogollon Brown Ware	McDonald Corrugated	9
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	red plain	red plain	60
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	red plain	red plain (smudged)	63
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	red plain	Salado Red	44
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Roosevelt Red Ware	Gila Black-on-red	4
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	10
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Roosevelt Red Ware	Gila Polychrome	72
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Roosevelt Red Ware	Pinto Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Roosevelt Red Ware	Tonto Polychrome	8
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	Showlow Red Ware	Show Low Black-on-red	1
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	White Mountain Red Ware	Fourmile Polychrome	2
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	White Mountain Red Ware	indeterminate	5

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ U:8:24 / 06-13a	School House Point Site	Room F87	Gila	White Mountain Red Ware	St. John's Polychrome	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	brown corrugated	brown corrugated	32
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	brown corrugated	brown corrugated	32
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	brown plain	brown plain	108
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	brown plain	brown plain	108
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	brown plain	brown plain (smudged)	93
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	brown plain	brown plain (smudged)	93
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Cibola White Ware	indeterminate	12
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Cibola White Ware	indeterminate	12
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Cibola White Ware	Pinedale Black-on-white	8
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Cibola White Ware	Pinedale Black-on-white	8
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	29
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	29
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	5
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	5
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	red plain	red plain	29
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	red plain	red plain	29
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	red plain	red plain (smudged)	18
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	red plain	red plain (smudged)	18
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	red plain	Salado Red	16
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	red plain	Salado Red	16
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	indeterminate	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	indeterminate	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	St. John's Black-on-red	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	St. John's Black-on-red	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	St. John's Polychrome	4

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F1b	Roosevelt	White Mountain Red Ware	St. John's Polychrome	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	indeterminate	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	indeterminate	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	Pinedale Black-on-white	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	Pinedale Black-on-white	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	Snowflake Black-on-white	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	Tularosa Black-on-white	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Cibola White Ware	Tularosa Black-on-white	4
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Hohokam Buff Ware	indeterminate buff	6
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Hohokam Buff Ware	indeterminate buff	6
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Hohokam Buff Ware	Sacaton Red-on-buff	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	6
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Hohokam Buff Ware	Tanque Verde Red-on-brown	6
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	9
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Mogollon Brown Ware	McDonald Corrugated	9
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Roosevelt Red Ware	Gila Polychrome	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Roosevelt Red Ware	Gila Polychrome	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Salado Red	Salado White-on-red	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	Salado Red	Salado White-on-red	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	indeterminate	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	indeterminate	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	2
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	St. John's Black-on-red	7
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	St. John's Black-on-red	7
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	St. John's Polychrome	67
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	St. John's Polychrome	67
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	Wingate Polychrome	1
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Room F7b	Roosevelt	White Mountain Red Ware	Wingate Polychrome	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	brown corrugated	brown corrugated	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	brown plain	Gila Plain	4

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	brown plain	Tonto Plain	148
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	Cibola White Ware	indeterminate	4
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	Cibola White Ware	Pinedale or Tularosa Black-on-white	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	Hohokam Buff Ware	indeterminate buff	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	Little Colorado White Ware	indeterminate	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	Mogollon Brown Ware	Forestdale smudged	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	red plain	red plain (smudged)	2
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	red plain	Sacaton Red	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	red plain	Salado Red	35
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	red plain	Tonto Red, Salt	1
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Room F7	Roosevelt	Roosevelt Red Ware	Gila Polychrome	7
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	brown plain	Gila Plain	169
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	brown plain	Tonto Plain	716
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	Cibola White Ware	Red Mesa Black-on-white	4
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	Cibola White Ware	Reserve or Tularosa Black-on-white	2
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	Hohokam Buff Ware	indeterminate buff	39
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	17
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	indeterminate	indeterminate painted	3
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	Mogollon Brown Ware	Forestdale smudged	15
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	red plain	red plain	5
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	red plain	Sacaton Red	2
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	red plain	Salado Red	3
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	red plain	Tonto Red	2
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Pit Structure F11	Sacaton	red plain	Tonto Red, Salt	1
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	brown plain	Gila Plain	305
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	brown plain	Gila Plain	305
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	brown plain	Tonto Plain	730
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	brown plain	Tonto Plain	730
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Cibola White Ware	indeterminate	6
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Cibola White Ware	indeterminate	6
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Cibola White Ware	Snowflake Black-on-white	3
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Cibola White Ware	Snowflake Black-on-white	3
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Hohokam Buff Ware	indeterminate buff	71
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Hohokam Buff Ware	indeterminate buff	71

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	1
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	1
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	9
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	9
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	indeterminate white ware	indeterminate	1
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	indeterminate white ware	indeterminate	1
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Mogollon Brown Ware	Forestdale smudged	2
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F10	Sacaton	Mogollon Brown Ware	Forestdale smudged	2
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F8	Sacaton	brown plain	Gila Plain	103
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F8	Sacaton	brown plain	Tonto Plain	151
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F8	Sacaton	Hohokam Buff Ware	indeterminate buff	29
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F8	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	10
RRSS	AZ U:8:225 / 06-1580	Riser	Pit Structure F8	Sacaton	Mogollon Brown Ware	Forestdale smudged	8
SR87: Ord Mine Road	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Room 2	Roosevelt		no ceramic counts	n/a
SR87: Ord Mine Road	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Room 4	Roosevelt		no ceramic counts	n/a
SR87: Ord Mine Road	AZ O:15:88 (ASM) / NA 16929 (MNA)	Limestone House	Room 3	Roosevelt		no ceramic counts	n/a
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F28	Sacaton	brown plain	Gila Plain	2
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F28	Sacaton	brown plain	Wingfield Plain	155
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F28	Sacaton	red plain	Wingfield Red	1
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	brown plain	Gila Plain	138
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	brown plain	Tonto Plain	9
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	brown plain	Tonto Plain, Verde	145
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	brown plain	Wingfield Plain	868
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	Hohokam Buff Ware	indeterminate buff	62
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	Hohokam Buff Ware	Sacaton Buff	2
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	42
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	40
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	4
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	indeterminate	indeterminate painted	42
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	indeterminate	indeterminate red-on-black	72
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	indeterminate	indeterminate red-on-brown	3
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	red plain	Gila or Salt Red	196
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	red plain	Gila Red	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	red plain	Salt Red	2
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F6	Sacaton	red plain	Wingfield Red	6
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	brown plain	Gila Plain	61
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	brown plain	Tonto Plain	5
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	brown plain	Tonto Plain, Verde	39
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	brown plain	Wingfield Plain	256
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	Hohokam Buff Ware	indeterminate buff	24
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	Hohokam Buff Ware	Sacaton Buff	1
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	6
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	11
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	indeterminate	indeterminate painted	14
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	indeterminate	indeterminate red-on-brown	21
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	red plain	Gila or Salt Red	63
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	red plain	Sacaton Red	3
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Pit Structure F7	Sacaton	red plain	Salt Red (smudged)	1
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	brown plain	Gila Plain	42
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	brown plain	Tonto Plain	8
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	brown plain	Tonto Plain, Verde	56
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	brown plain	Wingfield Plain	18
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	Hohokam Buff Ware	indeterminate buff	7
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	8
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	Hohokam Buff Ware	Sacaton Buff	2
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	6
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	15
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	indeterminate	indeterminate painted	4
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F2	Sacaton	red plain	Gila or Salt Red	9
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	brown plain	Gila Plain	96
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	brown plain	Tonto Plain	10
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	brown plain	Tonto Plain, Verde	93
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	brown plain	Wingfield Plain	63
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	Hohokam Buff Ware	indeterminate buff	16
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	27
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	Hohokam Buff Ware	Sacaton Buff	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	21
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	20
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	indeterminate	indeterminate painted	21
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	red plain	Gila or Salt Red	36
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	red plain	Sacaton Red	3
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F3	Sacaton	red plain	Tonto Red	2
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	brown plain	Gila Plain	30
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	brown plain	Tonto Plain	7
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	brown plain	Tonto Plain, Verde	7
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	brown plain	Wingfield Plain	54
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	Hohokam Buff Ware	indeterminate buff	27
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	Hohokam Buff Ware	Sacaton or Casa Grande Red-on-buff	1
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	5
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	19
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	indeterminate	indeterminate red-on-brown	28
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	red plain	Gila or Salt Red	44
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Pit Structure F33	Sacaton	red plain	Sacaton Red	3
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	brown plain	Gila Plain	2
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	brown plain	Tonto Plain, Verde	72
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	brown plain	Wingfield Plain	12
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	Hohokam Buff Ware	indeterminate buff	3
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	5
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	indeterminate	indeterminate red-on-brown	2
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Pit Structure F11	Sacaton	red plain	Gila or Salt Red	7
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Cibola White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Cibola White Ware	Puerco Black-on-white	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Hohokam Buff Ware	indeterminate buff	5
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Tusayan White Ware	Black Mesa Black-on-white	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Tusayan White Ware	Black Mesa or Sosi Black-on-white	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F1	Sacaton	Tusayan White Ware	indeterminate black-on-white	3
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	2

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	Hohokam Buff Ware	indeterminate buff	4
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	Tusayan White Ware	Black Mesa Black-on-white	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	Tusayan White Ware	Black Mesa or Sosi Black-on-white	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	Tusayan White Ware	indeterminate black-on-white	8
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F12	Sacaton	White Mountain Red Ware	St. John's Black-on-red	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F3	Sacaton	Cibola White Ware	Red Mesa Black-on-white	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F3	Sacaton	Tusayan White Ware	Black Mesa or Sosi Black-on-white	3
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F3	Sacaton	Tusayan White Ware	indeterminate black-on-white	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F4	Sacaton	Little Colorado White Ware	Holbrook Black-on-white (Style A or B)	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F4	Sacaton	San Juan Red Ware	Deadmans Black-on-red	1
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F4	Sacaton	Tusayan White Ware	Black Mesa Black-on-white	2
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Pit Structure F4	Sacaton	Tusayan White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Crematorium F71	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F11	Gila Butte	Cibola White Ware	indeterminate black-on-white	5
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F11	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	3
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F11	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	17
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F11	Gila Butte	Hohokam Buff Ware	indeterminate buff	6
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F11	Gila Butte	Hohokam Buff Ware	Snaketown or Gila Butte Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F13	Santa Cruz	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F13	Santa Cruz	Hohokam Buff Ware	indeterminate buff	4
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F13	Santa Cruz	Tusayan White Ware	indeterminate black-on-white	3
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	6
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	12
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	Hohokam Buff Ware	indeterminate buff	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	Hohokam Buff Ware	Snaketown or Gila Butte Red-on-buff	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	Hohokam Buff Ware	Snaketown Red-on-buff	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F14	Gila Butte	Tusayan White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	5

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	16
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Hohokam Buff Ware	indeterminate buff	15
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Hohokam Buff Ware	Snaketown or Gila Butte Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Hohokam Buff Ware	Snaketown Red-on-buff	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Tusayan White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F18	Gila Butte	Tusayan White Ware	Kana'a Black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F2	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F2	Gila Butte	Hohokam Buff Ware	indeterminate buff	5
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	brown plain	brown plain	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	9
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	18
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Hohokam Buff Ware	indeterminate buff	17
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Hohokam Buff Ware	Sacaton Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Hohokam Buff Ware	Snaketown or Gila Butte Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Hohokam Buff Ware	Snaketown Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F21	Gila Butte	Tusayan White Ware	Kana'a Black-on-white	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F22	Gila Butte	Hohokam Buff Ware	indeterminate buff	5
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F22	Gila Butte	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F22	Gila Butte	Tusayan White Ware	Kana'a Black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F25	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F25	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F25	Gila Butte	Hohokam Buff Ware	indeterminate buff	4
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F32	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F32	Gila Butte	Hohokam Buff Ware	indeterminate buff	3
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F32	Gila Butte	Hohokam Buff Ware	Snaketown Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F32	Gila Butte	Tusayan White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	5
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	3
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Hohokam Buff Ware	indeterminate buff	13

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Hohokam Buff Ware	Snaketown or Gila Butte Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Hohokam Buff Ware	Snaketown Red-on-buff	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Tusayan White Ware	indeterminate black-on-white	2
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F59	Sacaton	Tusayan White Ware	Kana’a Black-on-white	1
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Pit Structure F65	Santa Cruz	brown plain	brown plain	6
SR87: Rye Creek	AZ O:15:54 / 06-540	Cobble	Pit Room F9	Miami or Roosevelt	Hopi	Tuwiuca Blk/org	1
SR87: Rye Creek	AZ O:15:54 / 06-540	Cobble	Pit Room F9	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style A or B)	1
SR87: Rye Creek	AZ O:15:54 / 06-540	Cobble	Pit Room F9	Miami or Roosevelt	Tusayan White Ware	Kana’a Black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F19	Miami	Cibola White Ware	Reserve or Tularosa Black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	Cibola White Ware	indeterminate black-on-white	6
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Puerco Black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	Cibola White Ware	Snowflake Black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	2
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	2
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F5	Miami or Roosevelt	White Mountain Red Ware	St. John’s Black-on-red	3
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Cibola White Ware	indeterminate black-on-white	3
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	2
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Little Colorado White Ware	Padre Black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Roosevelt Red Ware	indeterminate	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Room F6	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F11	Miami	Cibola White Ware	indeterminate black-on-white	2
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F11	Miami	Cibola White Ware	Snowflake Black-on-white	3
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F11	Miami	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F11	Miami	Tusayan White Ware	Black Mesa or Sosi Black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F9	Sacaton	Little Colorado White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Pit Structure F9	Sacaton	Roosevelt Red Ware	Pinto Black-on-red	1
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Room F1	Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	2
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Horno F6	Classic	brown plain	brown plain	9

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Pit Structure F4	Sacaton	Cibola White Ware	Red Mesa Black-on-white	1
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Pit Structure F4	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Pit Structure F4	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Pit Structure F4	Sacaton	Little Colorado White Ware	Holbrook Black-on-white (Style A or B)	3
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Pit Structure F4	Sacaton	Tusayan White Ware	Kana'a or Black Mesa Black-on-white	2
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Cibola White Ware	Kiatuthlanna Black-on-white	1
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Cibola White Ware	Kiatuthlanna or Red Mesa Black-on-white	1
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Cibola White Ware	Red Mesa Black-on-white	3
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Hohokam Buff Ware	indeterminate buff	6
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Little Colorado White Ware	Holbrook Black-on-white (Style A)	2
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Little Colorado White Ware	indeterminate	5
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Tusayan White Ware	Black Mesa Black-on-white	2
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Tusayan White Ware	Black Mesa or Sosi Black-on-white	7
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Tusayan White Ware	indeterminate black-on-white	15
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F11	Sacaton	Tusayan White Ware	Kana'a Black-on-white	1
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Hohokam Buff Ware	indeterminate buff	3
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Little Colorado White Ware	Holbrook Black-on-white (Style A or B)	2
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Little Colorado White Ware	Holbrook Black-on-white (Style A)	2
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Little Colorado White Ware	Holbrook or Walnut Black-on-white	1
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Little Colorado White Ware	indeterminate	6
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Tusayan White Ware	Black Mesa Black-on-white	4
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Tusayan White Ware	Black Mesa or Sosi Black-on-white	9
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Tusayan White Ware	indeterminate black-on-white	6
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Tusayan White Ware	Kana'a Black-on-white	4
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Pit Structure F5	Sacaton	Tusayan White Ware	Sosi Black-on-white	1
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Cibola White Ware	Red Mesa Black-on-white	1
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Hohokam Buff Ware	indeterminate buff	22
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	14
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	3

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	4
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Tusayan White Ware	indeterminate black-on-white	1
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Tusayan White Ware	Kana'a Black-on-white	3
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Pit Structure F14	Sacaton	Tusayan White Ware	Kana'a or Black Mesa Black-on-white	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Horno F4	Miami	brown plain	brown plain	111
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Horno F4	Miami	Hohokam Buff Ware	indeterminate buff	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Horno F4	Miami	Hohokam Buff Ware	indeterminate red-on-buff	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Horno F4	Miami	red plain	red plain	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	brown plain	brown plain	560
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	brown plain	brown plain (intrusive)	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	brown plain	brown plain (smudged)	4
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	Cibola White Ware	indeterminate	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	Hohokam Buff Ware	indeterminate buff	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	Hohokam Buff Ware	indeterminate red-on-buff	2
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	Little Colorado White Ware	Holbrook Black-on-white (Style B)	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	Mogollon Brown Ware	McDonald Painted Corrugated	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	Mogollon Brown Ware	McDonald Painted Corrugated	1
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	red plain	Gila Red	6
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Pit Structure F7	Miami	red plain	red plain	3
SR87: SCP	AZ U:3:323 / 03-478	Cottonwood Basin	Horno F1	Sacaton-Soho (transition)	brown plain	brown plain	18
SR87: SCP	AZ U:3:323 / 03-478	Cottonwood Basin	Horno F1	Sacaton-Soho (transition)	brown plain	Gila Plain	1
SR87: SCP	AZ U:3:333 / 03-563	O'Neil Tank	Horno F1	Classic	brown plain	brown plain	4
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	brown plain	brown plain	974
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	brown plain	brown plain (intrusive)	2
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	brown plain	brown plain (knobbed)	1
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	brown plain	brown plain (smudged)	4
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	brown plain	Gila Plain	391
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	brown plain	Gila Plain (smudged)	2
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	red plain	red plain	1
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	red plain	Sacaton Red	30
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F12	Sacaton	red plain	Salado Red	1
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F4	Colonial	brown plain	brown plain	756

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F4	Colonial	brown plain	Gila Plain	103
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Pit Structure F4	Colonial	red plain	Sacaton Red	3
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Horno F2A	Colonial	Hohokam Buff Ware	indeterminate buff	9
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Horno F2A	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	9
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Horno F2A	Colonial	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F1	Colonial-Sedentary	Hohokam Buff Ware	indeterminate red-on-buff	1
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F22	Colonial	Hohokam Buff Ware	Gila Butte Red-on-buff (incised)	2
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F22	Colonial	Hohokam Buff Ware	indeterminate buff	15
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F22	Colonial	Hohokam Buff Ware	indeterminate red-on-brown	1
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F22	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	13
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	Hohokam Buff Ware	Gila Butte Red-on-buff	1
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	Hohokam Buff Ware	Gila Butte Red-on-buff (incised)	11
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	Hohokam Buff Ware	indeterminate buff	84
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	Hohokam Buff Ware	indeterminate red-on-brown	16
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	129
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Pit Structure F5	Colonial	Hohokam Buff Ware	Santa Cruz Red-on-buff	20
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Room F2	Miami or Roosevelt	brown corrugated	brown corrugated	2
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Room F2	Miami or Roosevelt	brown plain	brown plain	32
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Room F2	Miami or Roosevelt	Mogollon Brown Ware	McDonald Corrugated	1
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Room F2	Miami or Roosevelt	red corrugated	Salado Red Corrugated	3
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Room F2	Miami or Roosevelt	red plain	red plain	1
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	brown plain	brown plain	112
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	Cibola White Ware	indeterminate	2
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	2
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	3
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	indeterminate	indeterminate red-on-brown	1
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F1	Sacaton	red plain	red plain	1
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F3	Sacaton	brown plain	brown plain	31
TCAP	AZ U:3:275 / 06-1373	Sliver	Pit Structure F3	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	2
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Firepit F30	Miami or Roosevelt		no ceramic counts	n/a
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	brown corrugated	brown corrugated	12
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	brown plain	brown plain	129
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	Cibola White Ware	indeterminate	3
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	red corrugated	Salado Red Corrugated	61
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	red plain	red plain	8
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F1	Miami or Roosevelt	White Mountain Red Ware	Cedar Creek Polychrome	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F11	Miami or Roosevelt	brown corrugated	brown corrugated	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F11	Miami or Roosevelt	brown plain	brown plain	25
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F11	Miami or Roosevelt	Cibola White Ware	indeterminate	2
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F11	Miami or Roosevelt	red corrugated	Salado Red Corrugated	7
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	brown corrugated	brown corrugated	6
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	brown corrugated	brown corrugated	6
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	brown plain	brown plain	48
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	brown plain	brown plain	48
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	red corrugated	Salado Red Corrugated	15
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	red corrugated	Salado Red Corrugated	15
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	red plain	red plain	3
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	red plain	red plain	3
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F2	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	brown corrugated	brown corrugated	4
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	brown plain	brown plain	37
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	Cibola White Ware	indeterminate	62
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	red corrugated	Salado Red Corrugated	38
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	red plain	red plain	6
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Room F3	Gila	Roosevelt Red Ware	Gila Polychrome	1
TCAP	AZ U:3:286/ 06-1352	Boatyard	Occupation Surface F2	Cienega	brown plain	brown plain	19
TCAP	AZ U:3:286/ 06-1352	Boatyard	Occupation Surface F2	Cienega	Hohokam Buff Ware	indeterminate red-on-buff	1
TCAP	AZ U:3:286/ 06-1352	Boatyard	Occupation Surface F2	Cienega	red plain	red plain	1
TCAP	AZ U:3:286/ 06-1352	Boatyard	Pit Structure F8	Gila Butte	brown plain	brown plain	53

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:286/ 06-1352	Boatyard	Pit Structure F8	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	3
TCAP	AZ U:3:286/ 06-1352	Boatyard	Pit Structure F8	Gila Butte	indeterminate	indeterminate red-on-brown	1
TCAP	AZ U:3:286/ 06-1352	Boatyard	Pit Structure F8	Gila Butte	red plain	red plain	1
TCAP	AZ U:3:286/ 06-1352	Boatyard	Pit Structure F8	Gila Butte	Tusayan White Ware	Lino Gray, Fugitive Red	1
TCAP	AZ U:3:287 / 06-1353	–	Horno F2	Miami or Roosevelt	brown corrugated	brown corrugated	3
TCAP	AZ U:3:287 / 06-1353	–	Horno F2	Miami or Roosevelt	brown plain	brown plain	15
TCAP	AZ U:3:287 / 06-1353	–	Horno F2	Miami or Roosevelt	red corrugated	Salado Red Corrugated	9
TCAP	AZ U:3:287 / 06-1353	–	Horno F2	Miami or Roosevelt	red plain	red plain	2
TCAP	AZ U:3:287 / 06-1353	–	Horno F2	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Crematorium 24	Santa Cruz	brown plain	brown plain	19
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Crematorium 25	Santa Cruz	brown plain	brown plain	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Crematorium F26	Santa Cruz	brown plain	brown plain	21
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Horno F13	Gila Butte	brown plain	brown plain	11
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	brown corrugated	brown corrugated	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	brown plain	brown plain	526
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	6
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	Tusayan White Ware	Kana'a Black-on-white	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F1	Gila Butte	Tusayan White Ware	Lino Gray, Fugitive Red	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F15	Santa Cruz-Sacaton (transition)	brown plain	brown plain	48
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F15	Santa Cruz-Sacaton (transition)	Hohokam Buff Ware	indeterminate red-on-buff	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F15	Santa Cruz-Sacaton (transition)	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F15	Santa Cruz-Sacaton (transition)	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F17	Gila Butte	brown corrugated	brown corrugated	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F17	Gila Butte	brown plain	brown plain	637
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F17	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	4
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F17	Gila Butte	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F2	Gila Butte	brown plain	brown plain	124
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F2	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F2	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F2	Gila Butte	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F2	Gila Butte	Tusayan White Ware	Kana'a Black-on-white	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F21	Santa Cruz	brown plain	brown plain	188
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F21	Santa Cruz	Hohokam Buff Ware	indeterminate red-on-buff	9
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F21	Santa Cruz	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F21	Santa Cruz	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F21	Santa Cruz	Tusayan White Ware	indeterminate black-on-white	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	brown corrugated	brown corrugated	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	brown plain	brown plain	1036
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Cibola White Ware	Puerco Black-on-white	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	14
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Hohokam Buff Ware	Sacaton Red-on-buff	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Hohokam Buff Ware	Santa Cruz Red-on-buff	4
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	indeterminate white ware	indeterminate black-on-white	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Tusayan White Ware	Black Mesa Black-on-white	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Tusayan White Ware	indeterminate black-on-white	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F28	Colonial	Tusayan White Ware	Kana’a Black-on-white	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	brown corrugated	brown corrugated	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	brown plain	brown plain	386
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Cibola White Ware	indeterminate	9
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Cibola White Ware	Puerco Black-on-white	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Hohokam Buff Ware	indeterminate red-on-buff	22
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Hohokam Buff Ware	Sacaton Red-on-buff	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	indeterminate	indeterminate red-on-brown	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	indeterminate white ware	indeterminate	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	indeterminate white ware	indeterminate black-on-white	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Little Colorado White Ware	Holbrook Black-on-white (Style A or B)	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Little Colorado White Ware	Holbrook Black-on-white (Style B)	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	red plain	red plain	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Tusayan White Ware	Black Mesa or Sosi Black-on-white	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F57	Ash Creek	Tusayan White Ware	indeterminate black-on-white	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F58	Sacaton	brown plain	brown plain	26
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F58	Sacaton	Cibola White Ware	indeterminate	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F58	Sacaton	Cibola White Ware	Puerco Black-on-white	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F58	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	brown plain	brown plain	558
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	10
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	Hohokam Buff Ware	Sacaton Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	Hohokam Buff Ware	Santa Cruz Red-on-buff	7
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	indeterminate white ware	indeterminate black-on-white	3
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	Tusayan White Ware	indeterminate black-on-white	2
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Pit Structure F60	Colonial	Tusayan White Ware	Kana'a Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	brown corrugated	brown corrugated	197
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	brown plain	brown plain	146
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Cibola White Ware	indeterminate	6
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Cibola White Ware	Pinedale Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Cibola White Ware	Reserve Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	3
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Little Colorado White Ware	indeterminate	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	3
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	red corrugated	Salado Red Corrugated	207
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	red plain	red plain	33
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Roosevelt Red Ware	indeterminate polychrome	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome (salmon variety)	4
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	Roosevelt Red Ware	Tonto Polychrome	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F200	Miami or Roosevelt	White Mountain Red Ware	indeterminate	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F35	Miami or Roosevelt	brown corrugated	brown corrugated	15
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F35	Miami or Roosevelt	brown plain	brown plain	49
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F35	Miami or Roosevelt	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F35	Miami or Roosevelt	red corrugated	Salado Red Corrugated	48
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F35	Miami or Roosevelt	red plain	red plain	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	brown corrugated	brown corrugated	284
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	brown plain	brown plain	90

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	Cibola White Ware	indeterminate	3
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	3
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	Cibola White Ware	Tularosa Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	Cibola White Ware	Tularosa or Pinedale Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	red corrugated	Salado Red Corrugated	147
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	red plain	red plain	5
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F4	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	brown corrugated	brown corrugated	174
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	brown plain	brown plain	169
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	Cibola White Ware	Puerco Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	Cibola White Ware	Snowflake or Escavada Black-on-white	2
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	Cibola White Ware	Tularosa Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	indeterminate	indeterminate red-on-brown	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	red corrugated	Salado Red Corrugated	209
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	red plain	red plain	18
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Room F7	Miami or Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	brown corrugated	brown corrugated	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	brown plain	brown plain	170
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	5
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	Hohokam Buff Ware	Snaketown Red-on-buff	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	red corrugated	Salado Red Corrugated	7
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F12	Gila Butte	Tusayan White Ware	Black Mesa Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F177	Gila Butte	brown plain	brown plain	32
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F177	Gila Butte	red corrugated	Salado Red Corrugated	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F177	Gila Butte	red plain	red plain	3
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F20	Sacaton	brown plain	brown plain	55
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F20	Sacaton	Cibola White Ware	Gallup Black-on-white	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F20	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F20	Sacaton	Hohokam Buff Ware	Sweetwater Red-on-gray or Snaketown Red-on-buff	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F20	Sacaton	red corrugated	Salado Red Corrugated	2
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	brown corrugated	brown corrugated	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	brown plain	brown plain	36
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	Cibola White Ware	indeterminate	2
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	Hohokam Buff Ware	Sacaton Red-on-buff	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	indeterminate	indeterminate red-on-brown	1
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	red corrugated	Salado Red Corrugated	7
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	red plain	red plain	2
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Pit Structure F220	Ash Creek	Roosevelt Red Ware	indeterminate polychrome	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Crematorium F140	Ash Creek	brown plain	brown plain	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Room F205	Ash Creek or Miami	brown plain	brown plain	67
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Room F205	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Room F205	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Room F205	Ash Creek or Miami	red plain	red plain	77
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	brown corrugated	brown corrugated	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	brown plain	brown plain	1200
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	Cibola White Ware	Puerco Black-on-white	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	Cibola White Ware	Red Mesa Black-on-white	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	40
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	27
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	6
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	indeterminate white ware	indeterminate	5
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F1	Sacaton	red plain	red plain	5
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F104	Santa Cruz	brown plain	brown plain	83
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F104	Santa Cruz	Hohokam Buff Ware	indeterminate red-on-buff	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F104	Santa Cruz	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	brown corrugated	brown corrugated	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	brown plain	brown plain	314
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	Cibola White Ware	indeterminate	3
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	Cibola White Ware	Puerco Black-on-white	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	Cibola White Ware	Red Mesa Black-on-white	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	11
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	3
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F2	Sacaton	red corrugated	Salado Red Corrugated	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F201	Santa Cruz	brown plain	brown plain	46
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F201	Santa Cruz	Hohokam Buff Ware	indeterminate red-on-buff	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F201	Santa Cruz	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	brown plain	brown plain	174
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	Cibola White Ware	indeterminate	3
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	Cibola White Ware	Red Mesa Black-on-white	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	8
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	6
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	indeterminate white ware	indeterminate black-on-white	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F3	Sacaton	red plain	red plain	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	brown plain	brown plain	957
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Cibola White Ware	indeterminate	3
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Cibola White Ware	Puerco Black-on-white	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Cibola White Ware	Red Mesa Black-on-white	3
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	32
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	20
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	2
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	indeterminate white ware	indeterminate	3
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Pit Structure F4	Sacaton	red plain	red plain	5
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	brown corrugated	brown corrugated	130
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	brown plain	brown plain	123
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Cibola White Ware	indeterminate	7
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Cibola White Ware	Reserve Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style B)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Little Colorado White Ware	indeterminate	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	red corrugated	Salado Red Corrugated	90
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	red plain	red plain	11
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Roosevelt Red Ware	Pinto Polychrome (salmon variety)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Showlow Red Ware	Show Low Black-on-red	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	Tusayan White Ware	Black Mesa Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F11	Miami or Roosevelt	White Mountain Red Ware	Wingate Black-on-red	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	brown corrugated	brown corrugated	40

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	brown corrugated	brown corrugated	40
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	brown plain	brown plain	338
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	brown plain	brown plain	338
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Cibola White Ware	indeterminate	5
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Cibola White Ware	indeterminate	5
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Cibola White Ware	Reserve or Tularosa Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Hohokam Buff Ware	indeterminate red-on-buff	2
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Hohokam Buff Ware	indeterminate red-on-buff	2
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	indeterminate	3
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	indeterminate	3
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style A)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style B)	2
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Little Colorado White Ware	Walnut Black-on-white (Style B)	2
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	red corrugated	Salado Red Corrugated	72
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	red corrugated	Salado Red Corrugated	72
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	red plain	red plain	26
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	red plain	red plain	26
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Roosevelt Red Ware	Pinto Black-on-red	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Roosevelt Red Ware	Pinto Black-on-red	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Roosevelt Red Ware	Pinto Polychrome	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Room F25	Ash Creek or Miami	Roosevelt Red Ware	Pinto Polychrome	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	brown corrugated	brown corrugated	10
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	brown plain	brown plain	175
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	Cibola White Ware	indeterminate	9
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	Cibola White Ware	Puerco Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	Hohokam Buff Ware	indeterminate red-on-buff	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	Little Colorado White Ware	Walnut Black-on-white (Style A or B)	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	red corrugated	Salado Red Corrugated	22
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	red plain	red plain	2

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	Tusayan White Ware	indeterminate	4
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	Tusayan White Ware	Kana'a Black-on-white	1
TCAP	AZ U:3:299 / 06-199	Granary Row	Pit Structure F15	Sacaton or Ash Creek	White Mountain Red Ware	indeterminate	1
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	brown corrugated	brown corrugated	49
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	brown plain	brown plain	176
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	Cibola White Ware	indeterminate	1
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	red corrugated	Salado Red Corrugated	31
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	red plain	red plain	17
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F1	Miami or Roosevelt	Tusayan White Ware	indeterminate	1
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	brown corrugated	brown corrugated	16
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	brown plain	brown plain	101
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	Little Colorado White Ware	Holbrook Black-on-white (Style A or B)	1
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	Little Colorado White Ware	indeterminate	2
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	red corrugated	Salado Red Corrugated	12
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F3	Miami or Roosevelt	red plain	red plain	2
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F5	Gila	brown corrugated	brown corrugated	15
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F5	Gila	brown plain	brown plain	41
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F5	Gila	Little Colorado White Ware	Holbrook or Walnut Black-on-white	1
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F5	Gila	red corrugated	Salado Red Corrugated	16
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Room F5	Gila	red plain	red plain	3
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F1	Sacaton	brown plain	brown plain	765
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F1	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff (brown)	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F1	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F1	Sacaton	red plain	red plain	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F1	Sacaton	Tusayan White Ware	Kana'a Black-on-white	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	brown corrugated	brown corrugated	2
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	brown corrugated	brown corrugated	2
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	brown plain	brown plain	521
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	brown plain	brown plain	521
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Cibola White Ware	indeterminate	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Cibola White Ware	indeterminate	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff (brown)	4
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff (brown)	4

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	6
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	6
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Little Colorado White Ware	Padre Black-on-white	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Little Colorado White Ware	Padre Black-on-white	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Tusayan White Ware	Kana'a Black-on-white	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F2	Sacaton	Tusayan White Ware	Kana'a Black-on-white	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F3	Sacaton	brown corrugated	brown corrugated	2
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F3	Sacaton	brown plain	brown plain	139
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F3	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff (brown)	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F3	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F4	Sacaton	brown corrugated	brown corrugated	2
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Pit Structure F4	Sacaton	brown plain	brown plain	68
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	brown corrugated	brown corrugated	166
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	brown corrugated	Tonto corrugated	120
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	brown plain	brown plain	181
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	brown plain	Gila Plain	8
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	brown plain	Tonto Plain	198
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	brown plain	Wingfield Plain	11
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Cibola White Ware	indeterminate	3
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Cibola White Ware	Pinedale Black-on-white	5
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Gray Plain	Gray Plain	4
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Hohokam Buff Ware	indeterminate buff	3
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	8
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	indeterminate	indeterminate red-on-brown	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	indeterminate white ware	indeterminate black-on-white	3
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	5
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	red corrugated	Salado Red Corrugated	15
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	red plain	Gila Red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	red plain	red plain	200
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	red plain	Salado Red	31
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	red plain	Wingfield Red	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Roosevelt Red Ware	Gila Polychrome	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Roosevelt Red Ware	indeterminate black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-Red	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	7

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	4
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	Tusayan White Ware	indeterminate corrugated	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	White Mountain Red Ware	indeterminate	4
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F17	Roosevelt	White Mountain Red Ware	St. John's Black-on-red	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown corrugated	brown corrugated	146
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown corrugated	brown corrugated	146
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown corrugated	Tonto corrugated	180
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown corrugated	Tonto corrugated	180
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown plain	brown plain	161
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown plain	brown plain	161
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown plain	Tonto Plain	106
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	brown plain	Tonto Plain	106
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Cibola White Ware	Pinedale Black-on-white	4
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Cibola White Ware	Pinedale Black-on-white	4
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Gray Plain	Gray Plain	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Gray Plain	Gray Plain	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Hohokam Buff Ware	indeterminate buff	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Hohokam Buff Ware	indeterminate buff	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	indeterminate white ware	indeterminate black-on-white	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	indeterminate white ware	indeterminate black-on-white	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	3
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	3
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red corrugated	Salado Red Corrugated	19
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red corrugated	Salado Red Corrugated	19
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red plain	Gila Red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red plain	Gila Red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red plain	red plain	140
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red plain	red plain	140
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red plain	Salado Red	9
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	red plain	Salado Red	9
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Gila Polychrome	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Gila Polychrome	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-Red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-Red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	8
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	8
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Tusayan White Ware	indeterminate corrugated	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	Tusayan White Ware	indeterminate corrugated	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	White Mountain Red Ware	indeterminate	6
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	White Mountain Red Ware	indeterminate	6
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F20	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	brown corrugated	brown corrugated	446
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	brown corrugated	Tonto corrugated	243
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	brown plain	brown plain	767
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	brown plain	Gila Plain	4
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	brown plain	Tonto Plain	140
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	brown plain	Wingfield Plain	3
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Cibola White Ware	indeterminate	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Cibola White Ware	Pinedale Black-on-white	12
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Cibola White Ware	Tularosa Black-on-white	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Hohokam Buff Ware	indeterminate buff	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	11
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	red corrugated	Salado Red Corrugated	29
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	red plain	red plain	266
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	red plain	Salado Red	54
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Roosevelt Red Ware	Gila Polychrome	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Roosevelt Red Ware	Pinto Black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-Red	2
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	19
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Roosevelt Red Ware	Pinto Polychrome	7
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	Salado Red	Salado White-on-red	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:5:220 / 02-86	BC	Room F6	Roosevelt	White Mountain Red Ware	Pinedale Polychrome	3
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown corrugated	brown corrugated	22
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown corrugated	brown corrugated	22
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown corrugated	Tonto corrugated	35
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown corrugated	Tonto corrugated	35
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown plain	brown plain	13
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown plain	brown plain	13
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown plain	Tonto Plain	3
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	brown plain	Tonto Plain	3
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	Cibola White Ware	indeterminate	4
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	Cibola White Ware	indeterminate	4
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	Cibola White Ware	Pinedale Black-on-white	9
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	Cibola White Ware	Pinedale Black-on-white	9
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	indeterminate white ware	indeterminate	5
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	indeterminate white ware	indeterminate	5
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	red plain	red plain	4
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Room F3	Classic	red plain	red plain	4
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Horno F19	Sacaton	Hohokam Buff Ware	indeterminate buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Horno F19	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Horno F19	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Horno F19	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	brown plain	brown plain	556
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	brown plain	Gila Plain	199
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	brown plain	Tonto Plain	39
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	brown plain	Wingfield Plain	34
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Gray Plain	Gray Plain	2
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	11
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	indeterminate buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	20

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	27
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	5
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	12
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	18
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	red plain	Gila or Salt Red	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	red plain	Gila Red	2
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F12	Santa Cruz or Sacaton	red plain	red plain	8
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	brown plain	142
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	brown plain	142
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	Gila Plain	41
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	Gila Plain	41
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	Tonto Plain	23
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	Tonto Plain	23
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	Wingfield Plain	10
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	brown plain	Wingfield Plain	10
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Cibola White Ware	indeterminate	2
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Cibola White Ware	indeterminate	2
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	19
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	19
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	indeterminate buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	indeterminate buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	6
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	6
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	3
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	red plain	red plain	2
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	red plain	red plain	2
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Roosevelt Red Ware	Gila Polychrome	6
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Roosevelt Red Ware	Gila Polychrome	6

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Roosevelt Red Ware	Tonto Polychrome	1
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Pit Structure F20	Sacaton	Roosevelt Red Ware	Tonto Polychrome	1
Wheatfields	AZ V:9:325 / 02-907	JR	Cremation F53	Gila Butte	brown plain	Gila Plain	1
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	brown corrugated	brown corrugated	2
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	brown plain	brown plain	35
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	brown plain	Gila Plain	42
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	brown plain	Tonto Plain	46
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	brown plain	Wingfield Plain	12
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	Hohokam Buff Ware	indeterminate buff	2
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	indeterminate white ware	indeterminate	1
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	red plain	Gila Red	2
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F56	Sacaton	red plain	red plain	10
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F62	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Horno F62	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	brown corrugated	brown corrugated	10
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	brown corrugated	Tonto corrugated	6
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	brown plain	brown plain	856
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	brown plain	Gila Plain	272
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	brown plain	Tonto Plain	184
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	brown plain	Wingfield Plain	29
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	Casa Grande Red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	5
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	Gila Butte Red-on-buff	9
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	indeterminate buff	20
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	indeterminate buff (brown)	10
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	indeterminate red-on-buff	63
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	Hohokam Buff Ware	Santa Cruz Red-on-buff	95
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	indeterminate white ware	indeterminate black-on-white	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	red plain	Gila Red	70
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	red plain	red plain	147

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	red plain	Salado Red	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F12	Santa Cruz	red plain	Wingfield Red	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	brown corrugated	brown corrugated	8
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	brown corrugated	Tonto corrugated	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	brown plain	brown plain	498
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	brown plain	Gila Plain	63
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	brown plain	Tonto Plain	62
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	brown plain	Wingfield Plain	15
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Cibola White Ware	indeterminate	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Gray Corrugated	Gray Corrugated	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	5
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	Gila Butte Red-on-buff	13
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	indeterminate buff	9
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	indeterminate buff (brown)	8
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	indeterminate red-on-buff	40
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Hohokam Buff Ware	Santa Cruz Red-on-buff	28
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	Mogollon Brown Ware	McDonald Corrugated	6
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	red plain	Gila Red	13
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	red plain	red plain	100
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F13	Colonial	red plain	Wingfield Red	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	brown corrugated	brown corrugated	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	brown corrugated	Tonto corrugated	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	brown plain	brown plain	298
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	brown plain	Gila Plain	27
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	brown plain	Tonto Plain	12
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	brown plain	Wingfield Plain	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	6
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	Hohokam Buff Ware	Gila Butte Red-on-buff	13
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	Hohokam Buff Ware	indeterminate buff	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	Hohokam Buff Ware	indeterminate buff (brown)	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	Hohokam Buff Ware	indeterminate red-on-buff	5

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F2	Gila Butte	red plain	red plain	17
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	brown corrugated	brown corrugated	24
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	brown corrugated	Tonto corrugated	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	brown plain	brown plain	840
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	brown plain	Gila Plain	111
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	brown plain	Tonto Plain	96
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	brown plain	Wingfield Plain	28
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Cibola White Ware	indeterminate	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Cibola White Ware	Pinedale Black-on-white	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Cibola White Ware	Snowflake Black-on-white	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	indeterminate buff	13
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	29
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	43
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	9
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	34
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	red plain	Gila Red	16
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	red plain	red plain	100
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	red plain	Wingfield Red	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F27	Sacaton	Roosevelt Red Ware	Gila Polychrome	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	brown corrugated	brown corrugated	24
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	brown corrugated	Tonto corrugated	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	brown plain	brown plain	988
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	brown plain	Gila Plain	359
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	brown plain	Tonto Plain	331
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	brown plain	Wingfield Plain	73
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Cibola White Ware	indeterminate	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Cibola White Ware	Pinedale Black-on-white	9
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Cibola White Ware	Snowflake Black-on-white	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Gray Plain	Gray Plain	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	indeterminate buff	28

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	17
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	61
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	7
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	35
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	indeterminate	indeterminate red-on-brown	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	indeterminate white ware	indeterminate black-on-white	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Mogollon Brown Ware	Encinas Red-on-brown	5
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	red plain	Gila Red	133
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	red plain	red plain	222
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	red plain	Wingfield Red	6
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	Roosevelt Red Ware	Gila Polychrome	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F35	Sacaton	White Mountain Red Ware	indeterminate	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	brown corrugated	brown corrugated	4
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	brown corrugated	Tonto corrugated	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	brown plain	brown plain	316
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	brown plain	Gila Plain	241
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	brown plain	Tonto Plain	175
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	brown plain	Wingfield Plain	71
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Cibola White Ware	indeterminate	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Cibola White Ware	Snowflake Black-on-white	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Gray Corrugated	Gray Corrugated	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	Gila Butte Red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	indeterminate buff	18
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	2
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	56
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	13
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	indeterminate	indeterminate red-on-brown	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Mogollon Brown Ware	Encinas Red-on-brown	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Mogollon Brown Ware	McDonald Corrugated	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	Mogollon Brown Ware	San Carlos Red-on-brown	1
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	red plain	Gila Red	41
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	red plain	red plain	122
Wheatfields	AZ V:9:325 / 02-907	JR	Pit Structure F40	Sacaton	red plain	Wingfield Red	16
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	brown corrugated	brown corrugated	49
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	brown corrugated	Tonto corrugated	6
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	brown plain	brown plain	11
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	brown plain	Gila Plain	3
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	3
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Hohokam Buff Ware	Gila Butte Red-on-buff	1
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Hohokam Buff Ware	indeterminate buff	4
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Hohokam Buff Ware	indeterminate buff (brown)	3
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Hohokam Buff Ware	indeterminate red-on-buff	10
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Hohokam Buff Ware	Santa Cruz Red-on-buff	4
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	red plain	red plain	1
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	Roosevelt Red Ware	Gila Polychrome	1
Wheatfields	AZ V:9:325 / 02-907	JR	Room F3	Classic	White Mountain Red Ware	indeterminate black-on-red	3
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	brown corrugated	brown corrugated	96
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	brown corrugated	Tonto corrugated	147
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	brown plain	brown plain	146
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	brown plain	Gila Plain	1
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	brown plain	Tonto Plain	31
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	Gray Plain	Gray Plain	1
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	red corrugated	Salado Red Corrugated	11
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	red plain	red plain	37
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	red plain	Salado Red	8
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	Roosevelt Red Ware	Gila Polychrome	11
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Room F1	Gila	Roosevelt Red Ware	Pinto or Gila Polychrome	7
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	brown corrugated	brown corrugated	75
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	brown corrugated	Tonto corrugated	14
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	brown plain	brown plain	246
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	brown plain	Tonto Plain	18

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	brown plain	Wingfield Plain	14
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Cibola White Ware	indeterminate	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Cibola White Ware	Reserve or Tularosa Black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Cibola White Ware	Snowflake Black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Gray Plain	Gray Plain	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Hopi	Jeddito Black-on-yellow	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Mogollon Brown Ware	San Carlos Red-on-brown	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	red corrugated	Salado Red Corrugated	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	red plain	red plain	47
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	red plain	Salado Red	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Roosevelt Red Ware	Gila Polychrome	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F101	Sacaton	Roosevelt Red Ware	indeterminate polychrome	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	brown corrugated	brown corrugated	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	brown corrugated	Tonto corrugated	6
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	brown plain	brown plain	90
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	brown plain	Tonto Plain	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	brown plain	Wingfield Plain	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	Cibola White Ware	indeterminate	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F73	Sacaton	red plain	red plain	49
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	brown corrugated	brown corrugated	134
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	brown plain	brown plain	830
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Cibola White Ware	indeterminate	8
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Cibola White Ware	Reserve or Tularosa Black-on-white	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Cibola White Ware	Snowflake Black-on-white	9
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Cibola White Ware	Tularosa Black-on-white	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Gray Plain	Gray Plain	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Hohokam Buff Ware	indeterminate buff (brown)	5

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Hohokam Buff Ware	indeterminate red-on-buff	7
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Hohokam Buff Ware	Santa Cruz Red-on-buff	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	indeterminate white ware	indeterminate black-on-white	8
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Mogollon Brown Ware	McDonald Painted Corrugated	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Mogollon Brown Ware	McDonald Painted Corrugated	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Mogollon Brown Ware	San Carlos Red-on-brown	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	red plain	red plain	77
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	red plain	Salado Red	16
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Roosevelt Red Ware	Gila Polychrome	11
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Roosevelt Red Ware	indeterminate black-on-red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Roosevelt Red Ware	Pinto or Gila Black-on-Red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	Roosevelt Red Ware	Pinto Polychrome	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	White Mountain Red Ware	indeterminate	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	White Mountain Red Ware	St. John’s Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pit Structure F82	Miami	White Mountain Red Ware	Wingate Black-on-red	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	brown corrugated	brown corrugated	158
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	brown corrugated	Tonto corrugated	57
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	brown plain	brown plain	563
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	brown plain	Tonto Plain	74
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	brown plain	Wingfield Plain	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Cibola White Ware	indeterminate	9
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Cibola White Ware	Reserve or Tularosa Black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Gray Plain	Gray Plain	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Hohokam Buff Ware	indeterminate buff	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Hohokam Buff Ware	indeterminate buff (brown)	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Hohokam Buff Ware	indeterminate red-on-buff	10
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Hohokam Buff Ware	Santa Cruz Red-on-buff	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Mogollon Brown Ware	McDonald Painted Corrugated	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Mogollon Brown Ware	San Carlos Red-on-brown	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	red corrugated	Salado Red Corrugated	6
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	red plain	red plain	104

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	red plain	Salado Red	10
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Roosevelt Red Ware	Gila Black-on-red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Roosevelt Red Ware	Gila or Tonto Polychrome	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Roosevelt Red Ware	Gila Polychrome	23
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Roosevelt Red Ware	indeterminate polychrome	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Roosevelt Red Ware	Pinto or Gila Black-on-Red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	Roosevelt Red Ware	Pinto or Gila Polychrome	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	White Mountain Red Ware	indeterminate	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Pitroom F48	Roosevelt	White Mountain Red Ware	St. John's Black-on-red	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	brown corrugated	brown corrugated	155
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	brown corrugated	Tonto corrugated	79
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	brown plain	brown plain	525
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	brown plain	Tonto Plain	101
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	brown plain	Wingfield Plain	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Cibola White Ware	indeterminate	5
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Cibola White Ware	Reserve or Tularosa Black-on-white	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Cibola White Ware	Snowflake Black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Gray Plain	Gray Plain	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Hohokam Buff Ware	indeterminate buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Hohokam Buff Ware	indeterminate buff (brown)	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Hohokam Buff Ware	indeterminate red-on-buff	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Hohokam Buff Ware	Santa Cruz Red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Mogollon Brown Ware	McDonald Painted Corrugated	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Mogollon Brown Ware	McDonald Painted Corrugated	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Mogollon Brown Ware	San Carlos Red-on-brown	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	red corrugated	Salado Red Corrugated	11
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	red plain	red plain	191
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	red plain	Salado Red	11
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Roosevelt Red Ware	Gila Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Roosevelt Red Ware	Gila Polychrome	24
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Roosevelt Red Ware	indeterminate black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	Roosevelt Red Ware	Pinto or Gila Black-on-Red	7
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	White Mountain Red Ware	indeterminate	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F14	Gila	White Mountain Red Ware	Pinedale Polychrome	1

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown corrugated	brown corrugated	142
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown corrugated	brown corrugated	142
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown corrugated	Tonto corrugated	76
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown corrugated	Tonto corrugated	76
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	brown plain	683
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	brown plain	683
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	Gila Plain	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	Gila Plain	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	Tonto Plain	144
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	Tonto Plain	144
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	Wingfield Plain	66
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	brown plain	Wingfield Plain	66
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Cibola White Ware	indeterminate	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Cibola White Ware	indeterminate	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Cibola White Ware	Reserve or Tularosa Black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Cibola White Ware	Reserve or Tularosa Black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Gray Corrugated	Gray Corrugated	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Gray Corrugated	Gray Corrugated	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Gray Plain	Gray Plain	9
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Gray Plain	Gray Plain	9
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Hohokam Buff Ware	indeterminate buff	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Hohokam Buff Ware	indeterminate buff	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Hohokam Buff Ware	indeterminate buff (brown)	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Hohokam Buff Ware	indeterminate buff (brown)	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Hohokam Buff Ware	indeterminate red-on-buff	9
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Hohokam Buff Ware	indeterminate red-on-buff	9
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red corrugated	Salado Red Corrugated	11
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red corrugated	Salado Red Corrugated	11
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red plain	Gila Red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red plain	Gila Red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red plain	red plain	279
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red plain	red plain	279

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red plain	Salado Red	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	red plain	Salado Red	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	Gila or Tonto Polychrome	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	Gila Polychrome	7
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	Gila Polychrome	7
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	indeterminate black-on-red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	indeterminate black-on-red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	indeterminate polychrome	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	Roosevelt Red Ware	indeterminate polychrome	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	White Mountain Red Ware	indeterminate	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	White Mountain Red Ware	indeterminate	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F18	Gila	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	brown corrugated	brown corrugated	74
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	brown corrugated	Tonto corrugated	39
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	brown plain	brown plain	150
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	brown plain	Tonto Plain	18
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	brown plain	Wingfield Plain	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	Cibola White Ware	indeterminate	4
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	Cibola White Ware	Snowflake Black-on-white	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	Hohokam Buff Ware	indeterminate red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	red corrugated	Salado Red Corrugated	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	red plain	red plain	50
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	red plain	Salado Red	10
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	Roosevelt Red Ware	Gila Polychrome	10
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F20	Gila	Roosevelt Red Ware	indeterminate black-on-red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	brown corrugated	brown corrugated	101
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	brown corrugated	Tonto corrugated	84
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	brown plain	brown plain	458
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	brown plain	Gila Plain	6
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	brown plain	Tonto Plain	70
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	brown plain	Wingfield Plain	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Cibola White Ware	indeterminate	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Cibola White Ware	Pinedale Black-on-white	3

Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Cibola White Ware	Reserve or Tularosa Black-on-white	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Cibola White Ware	Snowflake Black-on-white	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Gray Corrugated	Gray Corrugated	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Hohokam Buff Ware	indeterminate red-on-buff	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Hohokam Buff Ware	Santa Cruz Red-on-buff	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	indeterminate white ware	indeterminate black-on-white	3
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Mogollon Brown Ware	McDonald Red Corrugated	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Mogollon Brown Ware	San Carlos Red-on-brown	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	red corrugated	Salado Red Corrugated	12
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	red plain	red plain	108
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	red plain	Salado Red	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Roosevelt Red Ware	Gila Polychrome	8
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Roosevelt Red Ware	indeterminate black-on-red	2
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Roosevelt Red Ware	Pinto or Gila Polychrome	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	Roosevelt Red Ware	Pinto Polychrome	13
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	White Mountain Red Ware	Pinedale Black-on-red	1
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Room F22	Gila	White Mountain Red Ware	Pinedale Polychrome	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Horno F31	Sacaton	brown plain	Gila Plain	12
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Horno F31	Sacaton	brown plain	Wingfield Plain	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Horno F31	Sacaton	Hohokam Buff Ware	indeterminate buff	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	brown plain	brown plain	235
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	brown plain	Gila Plain	136
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	brown plain	Tonto Plain	36
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	brown plain	Wingfield Plain	22
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Cibola White Ware	indeterminate	2
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Gray Plain	Gray Plain	3
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	18
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	indeterminate buff	11
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	indeterminate buff (brown)	4
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	indeterminate red-on-buff	37
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	Sacaton Red-on-buff	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	8

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Project Name	Site Number[a]	Site Name	Feature	Phase or Period	Ware	Ceramic Type	Count
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	Hohokam Buff Ware	Santa Cruz Red-on-buff	7
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	indeterminate white ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	red plain	Gila Red	5
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F13	Sacaton	red plain	red plain	10
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	brown plain	brown plain	387
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	brown plain	Gila Plain	153
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	brown plain	Tonto Plain	57
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	brown plain	Wingfield Plain	22
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Cibola White Ware	indeterminate black-on-white	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Cibola White Ware	Puerco Black-on-white	1
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Hohokam Buff Ware	Gila Butte or Santa Cruz Red-on-buff	25
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Hohokam Buff Ware	indeterminate buff	11
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Hohokam Buff Ware	indeterminate buff (brown)	3
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Hohokam Buff Ware	indeterminate red-on-buff	44
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Hohokam Buff Ware	Santa Cruz or Sacaton Red-on-buff	9
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	Hohokam Buff Ware	Santa Cruz Red-on-buff	40
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	red plain	Gila Red	11
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Pit Structure F15	Santa Cruz	red plain	red plain	19

[a] Site numbers are ASM / TNF unless otherwise noted. TNF designations are preceded by AR-03-12-.

Table B.6. References for Projects and Sites Used in This Study

Project Name	Site Number[a]	Site Name	Reference
Ash Creek	AZ U:3:46 (ASU)	Mesita Colorado	Rice, ed. 1985
Ash Creek	AZ U:3:50 (ASU)	Ewing Corral	Rice, ed. 1985
Ash Creek	AZ U:3:51 (ASU)	Tres Casitas	Rice, ed. 1985
Ash Creek	AZ U:3:86 (ASU)	Tres Salas	Rice, ed. 1985
Ash Creek	AZ U:4:13 (ASU)	Buff	Rice, ed. 1985
Carlota	AZ U:12:58 / 02-1120	–	Mitchell et al. 2002
Carlota	AZ U:12:69 / 02-1164	–	Mitchell et al. 2002
Carlota	AZ V:9:233 / 02-436	–	Mitchell et al. 2002
Carlota	AZ V:9:237 / 02-433	–	Mitchell et al. 2002
Carlota	AZ V:9:238 / 02-1114	–	Mitchell et al. 2002
Carlota	AZ V:9:244 / 02-425	–	Mitchell et al. 2002
Carlota	AZ V:9:262 / 02-1145	–	Mitchell et al. 2002
CCP	AZ U:3:405 / 06-2012	Vegas Ruin	Volume 1
CCP	AZ U:3:407 / 06-2014	Rock Jaw	Volume 1
CCP	AZ U:3:410 / 06-2017	Crane	Volume 1
Cholla-Saguaro	AZ V:5:14 (ASM)	Coon Creek	Gregory 1982b
Cholla-Saguaro	AZ V:9:105 (ASM)	Devore Wash	Simmons and Olszewski 1982
Mazatzal Rest Area	AZ O:15:110 / 06-1644	The Broken Hardt Site	Bilsbarrow and Harmon 1997
Mazatzal Rest Area	AZ O:15:111 / 06-1645	Partition House	Bilsbarrow 1997b
Mazatzal Rest Area	AZ O:15:112 / 06-1647	Slope House	Bilsbarrow and Tweedy 1997
Pinto Creek Pithouse	AZ U:8:628 / 06-188	Pinto Creek Pithouse	Jolly et al. 2009
RCD	AZ V:5:1 / 06-25	Pyramid Point	Elson 1994
RCD	AZ V:5:104 / 06-1045	Eagle Ridge, Locus B	Elson and Lindeman 1994
RCD	AZ V:5:106 / 06-217	Porcupine	Elson and Randolph 1994
RCD	AZ V:5:123 / 06-1002	–	Randolph 1994
RCD	AZ V:5:176 / 06-2029	–	Swartz 1994a
RCD	AZ V:5:189 / 06-1605	Hedge Apple	Swartz and Randolph 1994a
RCD	AZ V:5:4 / 06-26	Meddler Point	Craig and Clark 1994
RCD	AZ V:5:90 / 06-96	Griffin Wash	Swartz and Randolph 1994b
RCD	AZ V:5:93 / 06-1537	–	Swartz 1994b
RCD	AZ V:5:98 / 06-1542	–	Randolph and Elson 1994
RPM	AZ U:4:33 / 06-132	Cline Terrace Platform Mound	Jacobs 1997
RPM	AZ U:4:9 / 06-295	–	Oliver and Jacobs 1997
RPM	AZ U:8:24 / 06-13a	School House Point Site	Lindauer 1996
RPM	AZ V:5:112 / 06-995	Sand Dune	Jacobs 1994
RPM	AZ V:5:66 / 06-15a	Pinto Point Site	Jacobs 1994
RPM	AZ V:5:76 / 06-700	Livingston Platform Mound	Jacobs 1994
RRSS	AZ U:8:221 / 06-1576	Grapevine Springs South	Shelley and Ciolek-Torrello 1994
RRSS	AZ U:8:224 / 06-1579	Grapevine Vista	Shelley and Ciolek-Torrello 1994
RRSS	AZ U:8:225 / 06-1580	Riser	Vanderpot et al. 1994
SR87: Mazatzal Piedmont	AZ O:15:44 (ASM) / NA 16486 (MNA)	Mazatzal House	Ciolek-Torrello, ed. 1987
SR87: Mazatzal Piedmont	AZ O:15:45 (ASM) / NA 16487 (MNA)	La Piedra House	Ciolek-Torrello, ed. 1987
SR87: Mazatzal Piedmont	AZ O:15:49 (ASM) / NA 16917 (MNA)	Swimming Hole	Ciolek-Torrello, ed. 1987
SR87: Mazatzal Piedmont	AZ O:15:88 (ASM) / NA 16929 (MNA)	Limestone House	Ciolek-Torrello, ed. 1987

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Project Name	Site Number[a]	Site Name	Reference
SR87: Pine Creek	AZ U:3:83 / 03-412	–	Neily 1990
SR87: Pine Creek	AZ U:3:84 / 03-413	–	Hoffman 1990a
SR87: Pine Creek	AZ U:3:87 / 03-411	–	Hoffman 1990b
SR87: Pine Creek	AZ U:3:89 / 03-449	–	Hoffman 1990c
SR87: Rye Creek	AZ O:15:100 / 06-704	Clover Wash	Swartz 1992b
SR87: Rye Creek	AZ O:15:52 / 06-527	Deer Creek Village	Swartz 1992a
SR87: Rye Creek	AZ O:15:53 / 06-539	Hilltop	Craig 1992c
SR87: Rye Creek	AZ O:15:54 / 06-540	Cobble	Swartz 1992d
SR87: Rye Creek	AZ O:15:55 / 06-585	Boone Moore	Craig 1992b
SR87: Rye Creek	AZ O:15:90 / 06-1107	Compact	Craig 1992d
SR87: Rye Creek	AZ O:15:91 / 06-1108	Redstone	Craig 1992e
SR87: Rye Creek	AZ O:15:92 / 06-1111	Rooted	Swartz 1992c
SR87: SCP	AZ U:3:304 / 03-567	Sunflower Valley	Vanderpot et al. 1999; Klucas et al. 2003
SR87: SCP	AZ U:3:323 / 03-478	–	Vanderpot et al. 1999; Klucas et al. 2003
SR87: SCP	AZ U:3:333 / 03-563	O'Neil Tank	Vanderpot et al. 1999; Klucas et al. 2003
SR87: SCP	AZ U:3:337 / 03-456	Roundup	Vanderpot et al. 1999; Klucas et al. 2003
SR87: SCP	AZ U:3:341 / 03-461	Round Valley	Vanderpot et al. 1999; Klucas et al. 2003
SR87: SCP	AZ U:3:349 / 03-467	Rattler Green	Vanderpot et al. 1999; Klucas et al. 2003
TCAP	AZ U:3:273 / 06-1376	Butcher Hook	Clark and Vint, eds. 2000b
TCAP	AZ U:3:275 / 06-1373	Sliver	Clark and Vint, eds. 2000b
TCAP	AZ U:3:276 / 06-202	Middle-of-the-Road	Clark and Vint, eds. 2000b
TCAP	AZ U:3:286 / 06-1352	Boatyard	Clark and Vint, eds. 2000b
TCAP	AZ U:3:287 / 06-1353	–	Clark and Vint, eds. 2000b
TCAP	AZ U:3:289 / 06-2283	Hodgepodge Ridge	Clark and Vint, eds. 2000a
TCAP	AZ U:3:294 / 06-1362	Cerro Flojo	Clark and Vint, eds. 2000a
TCAP	AZ U:3:297 / 06-332	Las Tortugas	Clark and Vint, eds. 2000a
TCAP	AZ U:3:298 / 06-1368	Tres Huerfanos	Clark and Vint, eds. 2000a
TCAP	AZ U:3:299 / 06-199	Granary Row	Clark and Vint, eds. 2000a
TCAP	AZ U:3:300 / 06-1365	Vista del Puerto	Clark and Vint, eds. 2000a
TCAP	AZ U:3:352 / 06-2284	Casas Escondidas	Clark and Vint, eds. 2000a
Wheatfields	AZ V:5:220 / 02-86	BC	Doyel and Hoffman 2003a
Wheatfields	AZ V:5:222 / 02-85	Murray Wash	Doyel and Hoffman 2003a
Wheatfields	AZ V:5:223 / 02-983	Smiling Dog	Doyel and Hoffman 2003a
Wheatfields	AZ V:9:321 / 02-1191	Bohme Ranch	Doyel and Hoffman 2003a
Wheatfields	AZ V:9:325 / 02-907	JR	Doyel and Hoffman 2003a
Wheatfields	AZ V:9:364 / 02-1329	Hosmann	Doyel and Hoffman 2003a
Wheatfields	AZ V:9:365 / 02-908	Rocky Point	Doyel and Hoffman 2003a
Wheatfields	AZ V:9:367 / 02-78	Triangle G	Doyel and Hoffman 2003a

[a] Site numbers are ASM / TNF unless otherwise noted. TNF designations are preceded by AR-03-12-.

APPENDIX C

Comparative Mortuary Data for the CCP Analysis

Table C.1. Comparative Mortuary Data for the CCP Analysis

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:3:405	-06-2012	CCP	none	adolescent	male?	12	early Classic	inhumation	289	1	—	—	2	6	9
U:3:405	-06-2012	CCP	prehistoric	adult	male	14	early Classic	inhumation	82	—	—	—	5	2	7
U:3:405	-06-2012	CCP	none	juvenile	unk	21	early Classic	inhumation	unk	—	—	—	1	1	2
U:3:405	-06-2012	CCP	none	adult	male	33	early Classic	inhumation	241	—	1	—	9	20	29
U:3:405	-06-2012	CCP	none	adult	male	49	early Classic	inhumation	72	—	—	—	4	—	4
U:3:405	-06-2012	CCP	none	adult	male	101	early Classic	inhumation	103	—	—	—	5	—	5
U:3:405	-06-2012	CCP	none	adult	female	102	early Classic	inhumation	88	—	—	—	4	—	4
U:3:405	-06-2012	CCP	none	adult	male	103	early Classic	inhumation	93	—	—	1	13	2	16
U:3:405	-06-2012	CCP	none	adult	male	106	early Classic	inhumation	93	—	—	—	8	—	8
U:3:405	-06-2012	CCP	none	adolescent	male	108	early Classic	inhumation	96	—	—	—	5	—	5
U:3:405	-06-2012	CCP	none	adult	female	133	early Classic	inhumation	93	—	1	—	7	—	7
U:3:405	-06-2012	CCP	none	adult	male	137	early Classic	inhumation	81	—	1	—	5	44	49
U:3:405	-06-2012	CCP	none	adult	female	140	early Classic	inhumation	76	—	—	—	4	1	5
U:3:405	-06-2012	CCP	none	adult	female	141	early Classic	inhumation	280	—	—	—	4	—	4
U:3:405	-06-2012	CCP	none	adult	female	142	early Classic	inhumation	95	—	1	—	7	—	7
U:3:405	-06-2012	CCP	none	adult	male	143	early Classic	inhumation	93	—	—	—	4	—	4
U:3:405	-06-2012	CCP	none	adult	female	144	early Classic	inhumation	264	—	—	—	6	—	6
U:3:405	-06-2012	CCP	none	adult	male	145	early Classic	inhumation	97	—	1	—	4	2	6
U:3:405	-06-2012	CCP	none	adult	male	146	early Classic	inhumation	97	—	1	—	8	1	9
U:3:405	-06-2012	CCP	none	adult	male	164	early Classic	inhumation	87	—	1	—	—	—	—
U:3:405	-06-2012	CCP	none	juvenile	unk	165	early Classic	inhumation	89	—	1	—	1	1	2
U:3:405	-06-2012	CCP	none	adult	female	166	early Classic	inhumation	270	—	—	—	4	5	9
U:3:405	-06-2012	CCP	none	adult	female	168	early Classic	inhumation	266	—	1	—	3	—	3
U:3:405	-06-2012	CCP	none	juvenile	unk	172	early Classic	inhumation	89	—	—	—	3	—	3
U:3:405	-06-2012	CCP	none	juvenile	unk	175	early Classic	inhumation	73	—	—	—	2	—	2
U:3:405	-06-2012	CCP	none	adult	male	181	early Classic	inhumation	93	—	1	1	11	9	21
U:3:405	-06-2012	CCP	prehistoric	adult	female	182	early Classic	inhumation	86	—	1	—	7	—	7
U:3:405	-06-2012	CCP	none	juvenile	unk	185	early Classic	inhumation	86	—	—	—	1	—	1
U:3:405	-06-2012	CCP	none	juvenile	unk	190	early Classic	inhumation	71	—	—	—	3	—	3
U:3:405	-06-2012	CCP	none	adult	female	196	early Classic	inhumation	93	—	—	—	2	3	5
U:3:405	-06-2012	CCP	none	adult	male	197	early Classic	inhumation	89	—	—	—	—	—	—
U:3:405	-06-2012	CCP	none	adult	male	199	early Classic	inhumation	unk	—	—	—	—	—	—
U:3:405	-06-2012	CCP	none	juvenile	unk	204	early Classic	inhumation	66	—	1	—	2	—	2

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:3:405	-06-2012	CCP	prehistoric	adult	female	206	early Classic	inhumation	unk	—	1	1	2	1	4
U:3:405	-06-2012	CCP	none	adult	male	207	early Classic	inhumation	99	—	1	1	11	—	12
U:3:405	-06-2012	CCP	none	juvenile	unk	219	early Classic	inhumation	87	—	1	—	2	—	2
U:3:405	-06-2012	CCP	none	adult	male	220	early Classic	inhumation	289	—	—	1	—	5	6
U:3:410	-06-2017	CCP	none	adult	female	21	early Classic	inhumation	18	—	—	—	2	3	5
U:3:410	-06-2017	CCP	none	adult	female	25	early Classic	inhumation	103	—	—	—	4	—	4
U:3:410	-06-2017	CCP	none	adult	female	33	early Classic	inhumation	97	—	1	—	4	—	4
U:3:410	-06-2017	CCP	none	adult	unk	36	early Classic	inhumation	105	—	—	—	—	—	—
U:3:410	-06-2017	CCP	none	adult	male	38	early Classic	inhumation	105	1	—	1	17	13	32
U:3:410	-06-2017	CCP	none	adult	female	39	early Classic	inhumation	114	—	1	—	2	1	3
U:3:410	-06-2017	CCP	none	adult	female	40	early Classic	inhumation	95	—	—	—	4	—	4
U:3:408	-06-2015	CCP	none	juvenile	unk	8	pre Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	female	4	early Classic	cremation	unk	—	—	—	3	6	9
U:8:24	-06-13a	RPMS	none	adult	unk	5	early Classic	cremation	unk	—	—	—	2	—	2
U:8:24	-06-13a	RPMS	none	adult	unk	7	early Classic	cremation	unk	—	—	—	1	—	1
U:8:24	-06-13a	RPMS	none	adult	unk	8	early Classic	cremation	unk	—	—	—	1	7	8
U:8:24	-06-13a	RPMS	none	adult	female	9	early Classic	cremation	80	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	male	10	early Classic	cremation	unk	—	—	—	4	—	4
U:8:24	-06-13a	RPMS	none	adult	male	11	early Classic	inhumation	unk	—	—	—	2	1	3
U:8:24	-06-13a	RPMS	none	adult	unk	14	early Classic	cremation	unk	—	—	—	3	—	3
U:8:24	-06-13a	RPMS	none	juvenile	unk	67	early Classic	inhumation	113	—	—	—	1	—	1
U:8:24	-06-13a	RPMS	vandalism	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	male	96	early Classic	inhumation	119	—	—	1	11	8	19
U:8:24	-06-13a	RPMS	none	adolescent	unk	none	early Classic	cremation	unk	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	adult	female	102	early Classic	cremation	unk	—	—	—	2	8	10
U:8:24	-06-13a	RPMS	vandalism	adolescent	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	121A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	121B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adolescent	unk	121C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	male	136	early Classic	inhumation	10	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	vandalism	adult	unk	137A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	137B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:24	-06-13a	RPMS	vandalism	adult	unk	137C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	137D	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adolescent	unk	137E	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	137A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	female	138	early Classic	inhumation	14	1	1	1	11	7	18
U:8:24	-06-13a	RPMS	none	adult	male	141	early Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	142	early Classic	inhumation	350	—	—	—	2	—	2
U:8:24	-06-13a	RPMS	none	adult	female	143	early Classic	inhumation	340	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	male	144	early Classic	inhumation	350	—	—	—	1	—	1
U:8:24	-06-13a	RPMS	none	adult	male	145	early Classic	inhumation	5	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	adult	unk	146	early Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	male	147	early Classic	inhumation	19	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	adult	unk	191	early Classic	inhumation	80	—	—	—	3	—	3
U:8:24	-06-13a	RPMS	none	juvenile	unk	203	early Classic	inhumation	unk	—	—	—	4	1	5
U:8:24	-06-13a	RPMS	none	juvenile	unk	204	early Classic	inhumation	unk	—	—	—	2	1	3
U:8:24	-06-13a	RPMS	none	adult	unk	208	early Classic	inhumation	unk	—	—	—	6	1	7
U:8:24	-06-13a	RPMS	none	juvenile	unk	212	late Classic	inhumation	unk	—	—	—	—	3	3
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	212A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	213	late Classic	inhumation	unk	—	—	—	1	—	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	214	late Classic	inhumation	320	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	juvenile	unk	216	late Classic	inhumation	340	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	juvenile	unk	217	late Classic	inhumation	unk	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	adult	unk	229	early Classic	cremation	unk	—	—	—	2	—	2
U:8:24	-06-13a	RPMS	none	juvenile	unk	234	early Classic	inhumation	unk	—	—	—	3	—	3
U:8:24	-06-13a	RPMS	none	adult	female	235	early Classic	inhumation	84	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	236	early Classic	inhumation	unk	—	—	—	1	—	1
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adolescent	unk	238	late Classic	inhumation	20	—	—	—	4	1	5
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	238A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	240A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	240B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	242	late Classic	inhumation	unk	—	—	—	—	2	2
U:8:24	-06-13a	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	244A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	244B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	246A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	246B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	male	248	early Classic	inhumation	70	—	—	—	2	1	3
U:8:24	-06-13a	RPMS	none	juvenile	unk	250	late Classic	inhumation	unk	—	—	—	—	5	5
U:8:24	-06-13a	RPMS	vandalism	adult	male	252A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	252B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	252C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	252D	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	253A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	253B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	late Classic	cremation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	257	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	vandalism	adult	unk	258A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	258B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	adolescent	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	261	late Classic	inhumation	unk	—	—	—	3	—	3
U:8:24	-06-13a	RPMS	prehistoric	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	adult	female	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	264A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	264B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	unk	267	early Classic	inhumation	90	—	1	—	3	5	8
U:8:24	-06-13a	RPMS	none	adolescent	unk	268	late Classic	inhumation	91	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	adult	female	269	late Classic	inhumation	112	—	—	—	3	5	8
U:8:24	-06-13a	RPMS	vandalism	adult	unk	269A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	269B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	273	late Classic	inhumation	95	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	juvenile	unk	274	early Classic	inhumation	unk	—	—	—	9	1	10
U:8:24	-06-13a	RPMS	none	adult	unk	275	early Classic	inhumation	unk	—	—	—	4	1	5
U:8:24	-06-13a	RPMS	none	adult	unk	277	early Classic	inhumation	unk	—	—	—	5	—	5

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:24	-06-13a	RPMS	none	juvenile	unk	278	late Classic	inhumation	100	—	—	—	—	2	2
U:8:24	-06-13a	RPMS	vandalism	adult	male	282A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	282B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	282C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	282D	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	male	283A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	283B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	283C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	287	late Classic	inhumation	100	—	—	—	2	4	6
U:8:24	-06-13a	RPMS	none	juvenile	unk	288	late Classic	inhumation	314	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	289	late Classic	inhumation	unk	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	292	late Classic	inhumation	—	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	293	late Classic	inhumation	3	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	vandalism	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	297	late Classic	inhumation	110	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	vandalism	adult	unk	298A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	298B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	298C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	298D	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	301	late Classic	inhumation	unk	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	vandalism	adult	male	304A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	304B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	female	305	late Classic	inhumation	108	—	—	—	10	1	11
U:8:24	-06-13a	RPMS	vandalism	adult	unk	306A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	306B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	307	late Classic	inhumation	110	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	307A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	307B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	309	early Classic	inhumation	25	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	juvenile	unk	310	early Classic	inhumation	4	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	311	early Classic	inhumation	290	—	—	—	2	2	4
U:8:24	-06-13a	RPMS	none	juvenile	unk	312	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	313	late Classic	inhumation	unk	—	—	—	—	—	—

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:24	-06-13a	RPMS	none	juvenile	unk	315	late Classic	inhumation	212	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	317	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	318	late Classic	inhumation	110	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	319	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	321	late Classic	inhumation	96	—	—	—	8	1	9
U:8:24	-06-13a	RPMS	none	adolescent	unk	325	late Classic	inhumation	94	—	—	—	3	3	6
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	328	late Classic	inhumation	116	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	329	late Classic	inhumation	unk	—	—	—	1	—	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	331	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	prehistoric	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	female	334	late Classic	inhumation	112	—	—	—	6	3	9
U:8:24	-06-13a	RPMS	none	juvenile	unk	336	early Classic	inhumation	99	—	—	—	2	3	5
U:8:24	-06-13a	RPMS	none	adult	male	337	late Classic	inhumation	88	—	—	—	6	2	8
U:8:24	-06-13a	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	343	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	345	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	345A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	347	late Classic	inhumation	115	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	male	348	late Classic	inhumation	104	—	—	—	3	1	4
U:8:24	-06-13a	RPMS	none	juvenile	unk	349	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	male	350	late Classic	inhumation	82	—	—	—	6	4	10
U:8:24	-06-13a	RPMS	none	juvenile	unk	353	late Classic	inhumation	unk	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	354	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	355	late Classic	inhumation	100	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	vandalism	adult	male	356A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adolescent	unk	356B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	356C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	356D	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	356E	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	357	late Classic	inhumation	—	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	female	358	early Classic	inhumation	192	—	—	—	6	2	8
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	358A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:24	-06-13a	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	360A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	360B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	360C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	360D	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	364	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	364B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	365	early Classic	inhumation	15	—	1	1	6	1	7
U:8:24	-06-13a	RPMS	none	juvenile	unk	366	late Classic	inhumation	80	—	—	—	—	2	2
U:8:24	-06-13a	RPMS	none	juvenile	unk	367	late Classic	inhumation	103	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	368	early Classic	inhumation	unk	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	368A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	368B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	368C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	369	late Classic	inhumation	280	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	prehistoric	adult	female	370A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	adolescent	unk	370B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	370C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	adult	male	370D	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	female	372A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	juvenile	unk	372B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	vandalism	adult	unk	372C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adolescent	unk	374	early Classic	inhumation	340	—	1	—	8	3	11
U:8:24	-06-13a	RPMS	none	adult	female	377	early Classic	inhumation	170	—	—	—	2	35	37
U:8:24	-06-13a	RPMS	none	juvenile	unk	378	early Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	380	early Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	adult	female	381	early Classic	inhumation	185	—	1	—	10	3	13
U:8:24	-06-13a	RPMS	prehistoric	adult	male	382A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	prehistoric	adult	female	382B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	juvenile	unk	383	early Classic	inhumation	unk	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	juvenile	unk	384	late Classic	inhumation	108	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	385	late Classic	inhumation	unk	—	—	—	—	—	—
U:8:24	-06-13a	RPMS	none	juvenile	unk	386	late Classic	inhumation	unk	—	—	—	—	1	1
U:8:24	-06-13a	RPMS	none	adult	male	388	early Classic	inhumation	10	—	1	—	17	4	21

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:24	-06-13a	RPMS	none	adult	female	389	early Classic	inhumation	340	—	—	—	2	1	3
U:8:24	-06-13a	RPMS	prehistoric	juvenile	unk	389A	early Classic		unk	unk	unk	unk	unk	unk	unk
U:8:24	-06-13a	RPMS	none	adult	male	390	early Classic	inhumation	197	—	—	—	5	4	9
U:8:24	-06-13a	RPMS	none	adult	female	391	early Classic	inhumation	25	—	—	—	3	2	5
U:8:24	-06-13a	RPMS	none	adult	unk	402	early Classic	cremation	unk	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	adult	unk	403	early Classic	cremation	unk	—	—	—	1	1	2
U:8:24	-06-13a	RPMS	none	adult	unk	404	early Classic	cremation	unk	—	—	—	1	4	5
U:8:24	-06-13a	RPMS	none	adult	unk	405	early Classic	cremation	unk	—	—	—	1	2	3
U:8:450	-06-14b	RPMS	none	juvenile	unk	20	early Classic	inhumation	unk	—	1	—	3	—	3
U:8:450	-06-14b	RPMS	none	juvenile	unk	23	early Classic	inhumation	343	—	—	—	4	1	5
U:8:450	-06-14b	RPMS	prehistoric	adult	male	25A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	25B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	25C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	—	unk	26	early Classic	cremation	unk	—	—	—	3	2	5
U:8:450	-06-14b	RPMS	none	adolescent	unk	28	early Classic	inhumation	93	—	—	—	4	3	7
U:8:450	-06-14b	RPMS	none	juvenile	unk	32	early Classic	inhumation	unk	—	—	—	—	—	—
U:8:450	-06-14b	RPMS	none	juvenile	unk	33	early Classic	inhumation	74	—	—	—	2	2	4
U:8:450	-06-14b	RPMS	none	juvenile	unk	34	early Classic	inhumation	260	—	—	—	1	1	2
U:8:450	-06-14b	RPMS	none	juvenile	unk	36	late Classic	inhumation	110	—	1	—	4	1	5
U:8:450	-06-14b	RPMS	none	juvenile	unk	35	early Classic	inhumation	116	—	1	—	5	1	6
U:8:450	-06-14b	RPMS	none	juvenile	unk	37	early Classic	inhumation	115	—	—	—	1	1	2
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	female	39	early Classic	inhumation	110	—	—	1	9	6	15
U:8:450	-06-14b	RPMS	prehistoric	adult	female	39A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	39B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	39C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	—	unk	41	early Classic	inhumation	unk	—	—	—	2	—	2
U:8:450	-06-14b	RPMS	prehistoric	adult	female	42A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	female	42B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	42C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	42D	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	42E	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:450	-06-14b	RPMS	none	juvenile	unk	46	early Classic	inhumation	122	—	—	—	—	—	—
U:8:450	-06-14b	RPMS	none	adult	male	47	late Classic	inhumation	125	—	1	—	23	6	29
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	47A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adolescent	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	male	49	early Classic	inhumation	114	—	1	1	23	2	25
U:8:450	-06-14b	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	female	51	early Classic	inhumation	115	—	1	—	9	7	16
U:8:450	-06-14b	RPMS	none	adult	female	52	early Classic	inhumation	100	—	1	—	3	—	3
U:8:450	-06-14b	RPMS	none	adult	female	53	early Classic	inhumation	304	—	1	—	28	3	31
U:8:450	-06-14b	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	female	56	early Classic	inhumation	106	—	—	—	1	—	1
U:8:450	-06-14b	RPMS	none	adult	female	57	early Classic	inhumation	127	—	—	—	4	—	4
U:8:450	-06-14b	RPMS	none	adolescent	male	58	early Classic	inhumation	210	—	1	—	1	2	3
U:8:450	-06-14b	RPMS	none	adult	male	59	early Classic	inhumation	34	—	1	—	9	—	9
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	male	61	early Classic	inhumation	294	—	—	—	4	1	5
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	unk	64	early Classic	inhumation	unk	—	—	—	1	1	2
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	male	67A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	female	67B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	68A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	juvenile	unk	68	early Classic	inhumation	114	—	1	—	9	5	14
U:8:450	-06-14b	RPMS	none	adult	male	7	early Classic	inhumation	190	—	—	—	—	—	—
U:8:450	-06-14b	RPMS	vandalism	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	juvenile	unk	70	early Classic	inhumation	100	—	—	—	3	2	5
U:8:450	-06-14b	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	female	72	early Classic	inhumation	125	—	—	—	2	—	2
U:8:450	-06-14b	RPMS	prehistoric	adult	male	73A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	female	73B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:450	-06-14b	RPMS	none	adult	male	75	early Classic	inhumation	295	—	1	—	15	45	60
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	77A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adolescent	unk	77B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	male	78	early Classic	inhumation	123	—	—	—	9	3	12
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	78A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	female	81	early Classic	inhumation	122	—	—	—	1	—	1
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	adult	male	83	late Classic	inhumation	110	—	—	—	6	2	8
U:8:450	-06-14b	RPMS	prehistoric	juvenile	unk	83A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:450	-06-14b	RPMS	none	juvenile	unk	92	early Classic	inhumation	122	—	—	—	13	3	16
U:8:450	-06-14b	RPMS	none	adult	male	94	early Classic	inhumation	60	—	—	—	—	1	1
U:8:450	-06-14b	RPMS	none	adult	male	96	early Classic	inhumation	117	—	1	—	14	19	33
U:8:25	-06-14a	RPMS	none	juvenile	unk	29	early Classic	inhumation	110	—	—	—	1	—	1
U:8:25	-06-14a	RPMS	none	juvenile	unk	40	early Classic	inhumation	unk	—	—	—	2	—	2
U:8:25	-06-14a	RPMS	none	adult	female	none	early Classic	inhumation	65	—	—	—	2	—	2
U:8:25	-06-14a	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	none	adult	male	54	early Classic	inhumation	128	—	—	—	4	4	8
U:8:25	-06-14a	RPMS	none	juvenile	unk	57	early Classic	inhumation	105	—	—	—	2	—	2
U:8:25	-06-14a	RPMS	none	adult	female	61	late Classic	inhumation	120	—	—	—	10	1	11
U:8:25	-06-14a	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	none	juvenile	unk	66	early Classic	inhumation	109	—	—	—	2	4	6
U:8:25	-06-14a	RPMS	none	juvenile	unk	68	early Classic	inhumation	unk	—	—	—	3	—	3
U:8:25	-06-14a	RPMS	none	juvenile	unk	69	early Classic	inhumation	unk	—	—	—	1	—	1
U:8:25	-06-14a	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	none	adult	male	71	early Classic	inhumation	117	—	—	—	3	1	4
U:8:25	-06-14a	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	none	adult	male	73	early Classic	inhumation	111	1	—	—	10	12	22
U:8:25	-06-14a	RPMS	none	adult	female	74	early Classic	inhumation	300	—	—	—	4	—	4
U:8:25	-06-14a	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:25	-06-14a	RPMS	none	juvenile	unk	78	early Classic	inhumation	unk	—	—	—	3	—	3
U:8:385	-06-1608	RPMS	none	juvenile	unk	3	early Classic	inhumation	unk	—	—	—	4	—	4

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:451	-06-1443	RPMS	none	adolescent	unk	10	early Classic	inhumation	270	—	—	—	—	—	—
U:8:451	-06-1443	RPMS	none	juvenile	unk	12	early Classic	inhumation	unk	—	—	—	2	—	2
U:8:451	-06-1443	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:451	-06-1443	RPMS	none	juvenile	unk	15	early Classic	inhumation	unk	—	—	—	1	—	1
U:8:451	-06-1443	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:451	-06-1443	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:451	-06-1443	RPMS	none	juvenile	unk	20	early Classic	inhumation	unk	—	—	—	1	—	1
U:8:451	-06-1443	RPMS	prehistoric	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:453	-06-13c	RPMS	none	juvenile	unk	1	early Classic	inhumation	unk	—	—	—	2	3	5
U:8:454	-06-14c	RPMS	none	—	unk	1	early Classic	cremation	unk	—	—	—	5	1	6
U:8:454	-06-14c	RPMS	none	adult	male	14	early Classic	inhumation	115	1	—	—	10	13	23
V:5:119	-06-997	RPMS	none	adult	male	11	early Classic	inhumation	305	—	—	—	11	—	11
V:5:119	-06-997	RPMS	none	adult	male	12	early Classic	inhumation	305	—	—	—	9	7	16
V:5:119	-06-997	RPMS	none	juvenile	unk	13	early Classic	inhumation	unk	—	—	—	1	—	1
V:5:119	-06-997	RPMS	none	adult	male	14	early Classic	inhumation	105	—	—	—	5	—	5
V:5:119	-06-997	RPMS	none	adult	male	15	early Classic	inhumation	80	—	—	—	6	1	7
V:5:119	-06-997	RPMS	none	adult	male	16	early Classic	inhumation	86	—	—	—	2	—	2
V:5:119	-06-997	RPMS	none	adult	female	18	early Classic	inhumation	76	—	1	—	15	5	20
V:5:119	-06-997	RPMS	none	adolescent	unk	19	early Classic	inhumation	100	—	—	—	6	—	6
V:5:119	-06-997	RPMS	none	adult	male	20	early Classic	inhumation	100	—	—	—	3	2	5
V:5:119	-06-997	RPMS	none	juvenile	unk	22	early Classic	inhumation	107	—	—	—	6	1	7
V:5:119	-06-997	RPMS	none	adult	female	7	early Classic	cremation	unk	—	—	—	—	—	—
V:5:119	-06-997	RPMS	prehistoric	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:119	-06-997	RPMS	none	juvenile	unk	none	early Classic	inhumation	unk	—	—	—	1	—	1
V:5:66	-06-15a	RPMS	none	adult	male	43	early Classic	inhumation	82	—	—	—	1	3	4
V:5:66	-06-15a	RPMS	none	adult	female	48	early Classic	inhumation	282	—	—	—	2	—	2
V:5:66	-06-15a	RPMS	none	juvenile	unk	61	early Classic	inhumation	92	—	—	—	—	—	—
V:5:66	-06-15a	RPMS	vandalism	juvenile	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:121	-06-999	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:121	-06-999	RPMS	vandalism	adolescent	unk	16A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:121	-06-999	RPMS	vandalism	adult	unk	16B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:121	-06-999	RPMS	none	juvenile	unk	11	early Classic	inhumation	96	—	1	—	1	—	1
V:5:121	-06-999	RPMS	none	adult	unk	17	early Classic	inhumation	112	—	1	—	—	—	—
V:5:128	-06-1011	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
V:5:128	-06-1011	RPMS	vandalism	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:128	-06-1011	RPMS	none	adult	female	30	late Classic	inhumation	200	—	—	—	6	—	6
V:5:139	-06-15b	RPMS	none	juvenile	unk	22	early Classic	inhumation	341	—	—	—	—	2	2
V:5:139	-06-15b	RPMS	vandalism	adolescent	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:139	-06-15b	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:139	-06-15b	RPMS	vandalism	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:139	-06-15b	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:139	-06-15b	RPMS	none	juvenile	unk	21	early Classic	inhumation	184	—	—	—	2	1	3
V:5:139	-06-15b	RPMS	prehistoric	juvenile	unk	21A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:32	-06-164	RPMS	none	adult	male	5	early Classic	inhumation	19	—	—	—	—	—	—
U:4:32	-06-164	RPMS	none	adult	female	7	early Classic	inhumation	93	—	—	—	—	—	—
U:4:32	-06-164	RPMS	none	adult	female	14	early Classic	inhumation	104	—	—	—	—	—	—
U:4:32	-06-164	RPMS	none	adult	male	19	early Classic	inhumation	195	—	—	—	—	—	—
U:4:32	-06-164	RPMS	none	adult	female	22	early Classic	inhumation	336	—	1	—	5	—	5
U:4:32	-06-164	RPMS	none	adult	female	25	early Classic	inhumation	191	—	—	—	—	—	—
U:4:32	-06-164	RPMS	none	juvenile	unk	26	early Classic	inhumation	82	—	1	—	2	—	2
U:4:32	-06-164	RPMS	none	juvenile	unk	28	early Classic	inhumation	78	—	1	—	—	—	—
U:4:32	-06-164	RPMS	none	adult	unk	29	early Classic	inhumation	unk	—	—	—	—	—	—
U:4:75	-06-785	RPMS	none	adult	female	8	early Classic	inhumation	70	—	1	—	2	4	6
U:4:75	-06-785	RPMS	prehistoric	adult	unk	15A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:75	-06-785	RPMS	prehistoric	juvenile	unk	15B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:75	-06-785	RPMS	none	adult	male	16	early Classic	inhumation	125	—	—	—	—	—	—
U:4:75	-06-785	RPMS	none	adult	male	21	early Classic	inhumation	68	1	1	—	10	2	12
U:4:75	-06-785	RPMS	none	adult	male	22	early Classic	inhumation	64	—	—	—	4	28	32
U:4:75	-06-785	RPMS	none	juvenile	unk	27	early Classic	inhumation	unk	—	—	—	3	—	3
U:4:75	-06-785	RPMS	none	adult	unk	31	early Classic	inhumation	73	—	—	—	8	2	10
U:4:75	-06-785	RPMS	none	adult	unk	none	early Classic	inhumation	81	—	—	—	3	—	3
U:4:75	-06-785	RPMS	none	juvenile	unk	33	early Classic	inhumation	61	—	—	—	1	1	2
U:4:75	-06-785	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:11	-06-296b	RPMS	none	adult	unk	13	early Classic	inhumation	unk	—	—	—	—	—	—
U:3:128	-06-1869	RPMS	none	adult	female	13	early Classic	inhumation	177	—	—	—	2	—	2
U:3:128	-06-1869	RPMS	none	adolescent	unk	14	early Classic	inhumation	157	—	—	—	—	1	1
U:3:128	-06-1869	RPMS	none	juvenile	unk	15	early Classic	inhumation	unk	—	—	—	—	—	—
U:3:128	-06-1869	RPMS	none	juvenile	unk	24	early Classic	inhumation	unk	—	1	—	5	1	6
U:3:128	-06-1869	RPMS	none	adult	male	25	early Classic	inhumation	160	—	—	—	6	2	8

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:3:128	-06-1869	RPMS	none	juvenile	unk	26	early Classic	inhumation	unk	—	—	—	—	—	—
U:3:128	-06-1869	RPMS	none	juvenile	unk	28	early Classic	inhumation	unk	—	—	—	2	—	2
U:3:128	-06-1869	RPMS	none	juvenile	unk	29	early Classic	inhumation	unk	—	—	—	3	—	3
U:3:128	-06-1869	RPMS	none	adult	male	30	early Classic	inhumation	82	—	1	—	4	1	5
U:3:128	-06-1869	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:3:128	-06-1869	RPMS	none	juvenile	unk	32	early Classic	inhumation	83	—	—	—	1	3	4
U:3:128	-06-1869	RPMS	none	adult	male	33	early Classic	inhumation	70	—	1	—	6	—	6
U:3:128	-06-1869	RPMS	none	adult	male	34	early Classic	inhumation	75	1	1	—	5	2	7
U:4:10	-06-296a	RPMS	none	adult	female	67	late Classic	inhumation	290	—	—	—	—	—	—
U:4:10	-06-296a	RPMS	none	adult	unk	82	early Classic	cremation	unk	—	—	—	2	—	2
U:4:10	-06-296a	RPMS	prehistoric	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:10	-06-296a	RPMS	none	adult	male	84	late Classic	inhumation	90	—	—	—	2	—	2
U:4:10	-06-296a	RPMS	vandalism	juvenile	unk	125A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:10	-06-296a	RPMS	vandalism	juvenile	unk	125B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:10	-06-296a	RPMS	vandalism	juvenile	unk	125C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:10	-06-296a	RPMS	vandalism	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	none	juvenile	unk	80	early Classic	inhumation	112	—	—	—	3	—	3
U:4:9	-06-295	RPMS	none	juvenile	unk	81	early Classic	inhumation	104	—	1	—	10	8	18
U:4:9	-06-295	RPMS	none	juvenile	unk	98	late Classic	inhumation	unk	—	—	—	—	—	—
U:4:9	-06-295	RPMS	none	juvenile	unk	99	late Classic	inhumation	unk	—	—	—	3	—	3
U:4:9	-06-295	RPMS	prehistoric	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	vandalism	adult	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	none	adult	unk	104	late Classic	inhumation	112	—	—	—	2	—	2
U:4:9	-06-295	RPMS	none	adult	male	123	late Classic	inhumation	14	—	—	—	5	3	8
U:4:9	-06-295	RPMS	prehistoric	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	prehistoric	adult	female	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	none	adult	male	127	late Classic	inhumation	95	—	—	—	4	4	8
U:4:9	-06-295	RPMS	none	adult	male	128	late Classic	inhumation	98	1	1	—	6	2	8
U:4:9	-06-295	RPMS	prehistoric	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	none	juvenile	unk	135	late Classic	inhumation	103	—	1	—	5	2	7
U:4:9	-06-295	RPMS	prehistoric	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	prehistoric	adult	female	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:9	-06-295	RPMS	prehistoric	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:7	-06-293	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

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ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:4:7	-06-293	RPMS	none	adult	female	20	early Classic	inhumation	114	—	—	—	8	1	9
U:4:7	-06-293	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:7	-06-293	RPMS	none	adult	unk	23	early Classic	inhumation	114	—	1	—	5	9	14
U:4:7	-06-293	RPMS	none	adult	female	24	early Classic	inhumation	99	—	1	—	4	—	4
U:4:7	-06-293	RPMS	none	juvenile	unk	26	early Classic	inhumation	290	—	—	—	—	10	10
U:4:7	-06-293	RPMS	none	adult	female	31	early Classic	inhumation	112	—	—	—	8	1	9
U:4:7	-06-293	RPMS	none	adult	male	39	early Classic	inhumation	18	—	—	—	—	—	—
U:4:7	-06-293	RPMS	vandalism	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:7	-06-293	RPMS	none	juvenile	unk	41	early Classic	inhumation	127	—	—	—	1	—	1
U:4:7	-06-293	RPMS	none	adult	female	42	early Classic	inhumation	112	—	—	—	1	—	1
U:4:7	-06-293	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:7	-06-293	RPMS	none	adult	male	50	early Classic	inhumation	288	—	—	—	3	4	7
U:4:7	-06-293	RPMS	none	adult	male	51	early Classic	inhumation	115	1	1	1	17	2	19
U:4:7	-06-293	RPMS	none	adult	female	52	late Classic	inhumation	130	—	—	—	2	—	2
U:4:7	-06-293	RPMS	none	adult	female	53	late Classic	inhumation	123	—	—	—	1	—	1
U:4:7	-06-293	RPMS	none	adult	unk	55	late Classic	inhumation	117	—	—	—	—	—	—
U:4:33	-06-132	RPMS	none	adult	female	123	late Classic	inhumation	51	—	—	—	2	—	2
U:4:33	-06-132	RPMS	none	adolescent	unk	26	late Classic	inhumation	160	—	—	—	—	—	—
U:4:33	-06-132	RPMS	none	adult	male	39	late Classic	inhumation	228	—	—	—	—	—	—
U:4:33	-06-132	RPMS	none	adult	female	41	late Classic	inhumation	53	—	—	—	—	—	—
U:4:33	-06-132	RPMS	none	juvenile	unk	66	late Classic	inhumation	unk	—	—	—	1	-1	—
U:4:33	-06-132	RPMS	none	adult	male	83	early Classic	inhumation	105	1	—	—	15	19	34
U:4:33	-06-132	RPMS	vandalism	adult	female	84A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	adult	male	84B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	adult	female	89	late Classic	inhumation	322	—	—	—	—	1	1
U:4:33	-06-132	RPMS	none	adult	female	90	late Classic	inhumation	318	—	—	—	1	1	2
U:4:33	-06-132	RPMS	none	juvenile	unk	91	late Classic	inhumation	143	—	—	—	2	1	3
U:4:33	-06-132	RPMS	vandalism	adult	male	124A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	adult	unk	124B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	juvenile	unk	124C	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	juvenile	unk	124D	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	—	unk	124E	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	adult	male	125	late Classic	inhumation	44	—	—	—	—	—	—
U:4:33	-06-132	RPMS	vandalism	adult	male	126A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	adult	unk	126B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:4:33	-06-132	RPMS	none	adult	female	129	late Classic	inhumation	50	—	—	—	2	—	2
U:4:33	-06-132	RPMS	none	juvenile	unk	136	late Classic	inhumation	unk	—	—	—	1	—	1
U:4:33	-06-132	RPMS	none	adult	unk	141	late Classic	inhumation	139	—	—	—	—	—	—
U:4:33	-06-132	RPMS	none	adult	male	142	late Classic	inhumation	44	—	—	—	—	—	—
U:4:33	-06-132	RPMS	prehistoric	adult	male	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	juvenile	unk	145	late Classic	inhumation	148	—	—	—	1	1	2
U:4:33	-06-132	RPMS	prehistoric	adult	unk	145A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	adult	female	150	late Classic	inhumation	147	—	1	—	4	—	4
U:4:33	-06-132	RPMS	none	adult	unk	158	late Classic	inhumation	142	—	—	—	4	—	4
U:4:33	-06-132	RPMS	prehistoric	juvenile	unk	none	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	juvenile	unk	97	late Classic	inhumation	unk	—	—	—	1	—	1
U:4:33	-06-132	RPMS	none	juvenile	unk	104	late Classic	inhumation	unk	—	—	—	3	—	3
U:4:33	-06-132	RPMS	none	adult	male	105	late Classic	inhumation	143	1	—	—	2	4	6
U:4:33	-06-132	RPMS	none	juvenile	unk	107	late Classic	inhumation	32	—	1	—	1	1	2
U:4:33	-06-132	RPMS	prehistoric	adult	unk	106A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	prehistoric	adult	male	106B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	juvenile	unk	108	late Classic	inhumation	322	—	—	—	1	—	1
U:4:33	-06-132	RPMS	none	juvenile	unk	109	late Classic	inhumation	unk	—	—	—	1	—	1
U:4:33	-06-132	RPMS	none	juvenile	unk	113	late Classic	inhumation	unk	—	1	—	6	5	11
U:4:33	-06-132	RPMS	prehistoric	juvenile	unk	113A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	none	juvenile	unk	115	late Classic	inhumation	unk	—	—	—	—	—	—
U:4:33	-06-132	RPMS	vandalism	adult	female	118A	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:4:33	-06-132	RPMS	vandalism	adult	male	118B	late Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:458	-06-13b	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:458	-06-13b	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:458	-06-13b	RPMS	vandalism	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:23	-06-177	RPMS	none	adult	unk	78	early Classic	cremation	unk	—	—	—	14	24	38
U:8:23	-06-177	RPMS	none	—	unk	81	early Classic	cremation	unk	—	—	—	3	—	3
U:8:23	-06-177	RPMS	none	adult	unk	82	early Classic	cremation	unk	—	—	—	3	—	3
U:8:23	-06-177	RPMS	none	—	unk	83	early Classic	cremation	unk	—	1	—	7	21	28
U:8:23	-06-177	RPMS	vandalism	adult	female	70A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:23	-06-177	RPMS	vandalism	adult	male	70B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:23	-06-177	RPMS	vandalism	adolescent	unk	79A	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:23	-06-177	RPMS	vandalism	adult	male	79B	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk

continued on next page

ASM[a]	TNF[b]	Data Set	Disturbance	Age	Sex	Feature	Phase	Type	Orientation (°)	Painted Stick	Pigment	Eccentric[c]	Vessel Count[d]	Nonvessel Count[e]	Artifact Count
U:8:23	-06-177	RPMS	vandalism	adult	unk	79C	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
U:8:577	-06-2155	RPMS	none	adult	unk	none	early Classic	cremation	unk	—	—	—	—	—	—
V:5:112	-06-995	RPMS	vandalism	adult	male	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:112	-06-995	RPMS	prehistoric	adult	female	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:112	-06-995	RPMS	prehistoric	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:137	-06-12	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:137	-06-12	RPMS	vandalism	adult	unk	none	early Classic	inhumation	unk	unk	unk	unk	unk	unk	unk
V:5:137	-06-12	RPMS	none	juvenile	unk	none	early Classic	inhumation	unk	—	—	—	—	—	—

Note: Site designations for CCP sites as outlined in this volume are not followed here because of the nature of the information provided in the table.

Key: ASM = Arizona State Museum; TNF = Tonto National Forest; unk = unknown.

[a] ASM numbers are preceded by AZ.

[b] TNF numbers are preceded by AR-03-12.

[c] Effigy and eccentric vessels are included in this category for CCP burials.only.

[d] These counts do not include the effigy and eccentric vessels in CCP burials.

[e] Artifact types tabulated here for CCP burials include worked bone, worked shell, stone ornaments, projectile points, and other lithic tools. Worked shell is counted by occurrences; a necklace composed of multiple beads is interpreted as one occurrence (see Volume 2).

The Sedentary to Classic Period Transition in Tonto Basin presents the results of archaeological investigations on the eastern slopes of the Mazatzal Mountains at the boundary of the upper and lower Tonto Basins in central Arizona. The project involved nine small prehistoric sites and segments of the historical-period Globe-Payson Highway. The prehistoric sites include two limited-activity sites located along Hardt Creek near Jakes Corner, an early Classic period field house overlooking Gold Creek, and six late Sedentary–early Classic period sites near Cottonwood Creek. The latter include two small early Classic period compounds overlying smaller Sedentary period settlements.

The Sedentary to Classic period transition, a watershed event in the prehistory of Tonto Basin, has been the subject of considerable controversy for over a half century. Early investigators had argued that this transition was a time when Hohokam colonists abandoned Tonto Basin, leaving a cultural vacuum that was subsequently filled by groups who migrated from the Mogollon Rim and created a distinct Puebloan-related culture they called the Salado. Later investigators rejected the notion of a cultural hiatus and argued for direct continuity between the pre-Classic period Hohokam and Classic period Salado cultures. Still others have suggested that Tonto Basin was an area of cultural interaction between the three major cultures of the Southwest. The variable influences of the Hohokam, Mogollon, and Anasazi were manifested in architecture, ceramics, and mortuary practices at different times and in different places within the basin. The variety of chronologies, time periods, and phases developed for Tonto Basin reflect this debate.

The State Route 188–Cottonwood Creek Project provides important new information about chronology and cultural relations during this pivotal time period in Tonto Basin prehistory. In this third and final volume, we synthesize these new data with those from several contemporary studies to present our insights into the Classic period transition.