Guadalupe Ruin: Background, overview, and archaeological and administrative history

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link the outliers to Chaco Canyon suggests that inhabitants of Chaco Canyon visited these outliers and vice versa. In short, Chacoan people did not abandon Chaco Canyon in favor of the outlying communities but rather interacted with them (Pippin, 1987, p. 186, 190–194).

The outlying pueblos exhibit features similar to the great pueblos in Chaco Canyon. They have relatively large symmetrical rooms, regular floor plans, and architectural features that appear to reflect planned construction (Vivian, 1970, p. 157–162; Lekson, 1986, p. 39). Inhabitants of the outliers also constructed pueblo walls using similar masonry techniques that are distinct to Chacoan culture (Pippin, 1987, p. 190).

Despite the similarities, one should not assume that all outliers functioned the same (Marshall et al., 1979; Powers et al., 1983, p. 303–326). It is more likely that outliers provided specialized functions in the Chacoan system (Pippin, 1987, p. 194).

Not all archaeologists agree that Chaco and the Chacoan outliers represent an organized system. Indeed, some suggest they represent a regional style with similar local social organization. Studies in the Farmington area and at Red Mesa Valley and Lobo Mesa (McKenna and Toll, 1992; Kantner, 1996) suggest that some outliers were autonomous rather than part of a larger system (Durand and Durand, 2000, p. 101). The communities within Chaco Canyon may have been an organized system (Sebastian, 1992), but it does not necessarily follow that all outlying communities with Chacoan architecture were part of that system (Durand and Durand, 2000, p. 102). Kantner (1996, p. 92) proposed that local aspiring leaders may have imitated Chaco-style great houses in their pursuit of power.

GUADALUPE RUIN

Guadalupe Ruin is a classic Chacoan outlier based on its architecture and site layout (Durand and Durand, 2000). It is located in the middle Rio Puerco Valley, near the confluence of three physiographic provinces: the Colorado Plateau, the Basin and Range, and the Southern Rocky Mountains (Nials, 2003, p. 22). The site is located on top of a small mesa approximately 50 m (160 ft) above the valley floor (Neal and Walka, 2008; BLM, 1978); this mesa is capped by Gallup Sandstone (D.J. Koning, pers. comm., 2024). The pueblo consists of at least 50 rooms, of which 39 are rectangular rooms and 7 are semisubterranean kivas (Baker, 1984, p. 1; Neal and Walka, 2008). There were only approximately 1900 m^2 (~20,450 ft^2) of space available for construction of the pueblo (Pippin, 1987, p. 92). At its maximum architectural extent, Guadalupe Ruin covered approximately 1,400 m^2 (~15,000 ft^2), which corresponds to 75% of the available surface area (Pippin, 1987, p. 92).

Prior to the construction of the pueblo on Guadalupe Mesa, populations occupied the middle Rio Puerco Valley from at least 600 CE (Baker, 2003, p. 5). Archaeologically identified cultures that utilized the area around Guadalupe Mesa include Paleo-Indian, Archaic, and Basketmaker populations (Baker, 2003, p. 10).

Guadalupe Ruin was constructed and occupied between about 900 and 1300 CE. Based on architectural evolutions and ceramic variation, two distinct populations inhabited and modified Guadalupe Ruin (BLM, 1978; Durand, 1997, p. 10; Durand and Durand, 2000, p. 106). The two architectural components at Guadalupe are the Chaco component (~900 to 1150) and the San Juan/Mesa Verde component (~1200 to 1300; Durand, 1997, p. 10).

Periods of Occupation

Durand and Durand (2000, p. 106) divided the sequence at Guadalupe Ruin into four periods.

Period 1: Occupation prior to Guadalupe Ruin (900–960 CE)

Limited occupation of the middle Rio Puerco Valley began around 600 CE (Baker, 2003, p. 5). At Guadalupe Mesa specifically, a community of people occupied the area around the base of the mesa for 30 to 50 years prior to the construction of Guadalupe Ruin (Durand and Hurst, 1991). According to the archaeological record, this community was fairly substantial during the pre-Chacoan period (Durand, 1997, p. 11). Cynthia Irwin-Williams' Rio Puerco Valley Project (1970–1981) indicated the whole of the Rio Puerco drainage supported a considerable population beginning around 900 CE (Washburn, 1972, p. 135, fig. 14; Fritz, 1973, figs. 8–11; Pippin, 1987, p. 10).

Period 2: Chaco occupation and construction of Guadalupe Ruin (960–1130 CE)

The initial construction of Guadalupe Ruin started around 960, and occupation of the site was continuous until the early to mid-1100s (Pippin, 1987; Baker, 1991; Hurst, 1991; Durand and Durand, 2000, p. 103). Construction of Guadalupe Ruin began on the eastern half of the mesa (Fig. 2a; Pippin, 1987, p. 100–105) and is the only example of Type I masonry (Lekson, 1986) outside of Chaco Canyon (Fig. 3a). In the 1000s, construction expanded into the western half of the structure (Fig. 2b) using classic core-and-veneer (Type II; Fig. 3.b) masonry (Lekson, 1986; Durand and Durand, 2000, p. 103). Generally, the architecture of Period 2 is characterized by basalt cobble wall foundations, T-shaped doorways, and large, symmetrically arranged rooms (Baker, 1984, p. 4).

Pippin (1987, p. 164) identified four building phases during the Chaco Occupation (Fig. 2). The first building phase dates to the Early Chaco Occupation (918 to 1050), and the second, third, and fourth building phases date to the Late Chaco Occupation (1050 to 1130; Pippin, 1987, p. 101, 105).

Construction during the Early Chaco Occupation corresponded to single-wythe, unfaced, coursed rubble wall masonry (Type I; Fig. 3a), with most walls laid on basalt cobble foundations. Occupants constructed at least nine rooms on the highest portion of the mesa with a plaza to the south (Pippin, 1987, p. 100; Van Dyke, 1999, p. 464). No kiva-like structures have been positively associated with the Early Chaco occupants (Pippin, 1987, p. 101).

Construction during the Late Chaco Occupation corre-

sponded to double-faced, narrow-banded coursed rubble (earlier) and double-faced, wide-banded coursed rubble (later) masonry styles (both examples of core-and-veneer or Type II masonry; Fig. 3b; Pippin, 1987, p. 105). The Chacoan population constructed an L-shaped addition to the west of the earlier structure (Fig. 2b; Van Dyke, 1999, p. 464). Fritz (1978, p. 50) postulated that the division of Chaco towns into two symmetrical halves expressed social aggregates of balanced duality. Guadalupe Ruin did not achieve this symmetrical character until the final stages of the Late Chaco Occupation (Pippin, 1987, p. 108, 114).

Ceramic evidence from this period, particularly the presence of Red Mesa II Black-on-white, Kana'a Gray, and indented corrugated wares, suggest that Guadalupe and the middle Rio Puerco Valley were aligned with the development of Chacoan culture (Hurst, 2003, p. 115). The later ascendancy of Gallup black-on-white also mirrors trends seen in the San Juan Basin and Chaco Canyon (Hurst, 2003, p. 115).

Periods 3 and 4: Post-Chaco era (1130–1220 CE) and San Juan/Mesa Verde occupation to terminal phase (1220–1300 CE)

Evidence of the Chacoan inhabitants of Guadalupe Mesa waned in the late 12th century, particularly in ceramic evidence of distinctly Chacoan styles; transitional ceramic forms do exist but suggest changing or declining population (Durand and Durand, 2000).

A new group of inhabitants heavily modified Guadalupe Ruin in the mid- to late 13th century (Pippin, 1987, p. 100, 114–128). Stratigraphic and architectural details of the San Juan/Mesa Verde Occupation suggest at least two phases of

Figure 2 a: Period 2 - Early Chaco (A.D. 918 to 1050) Type I Masonry

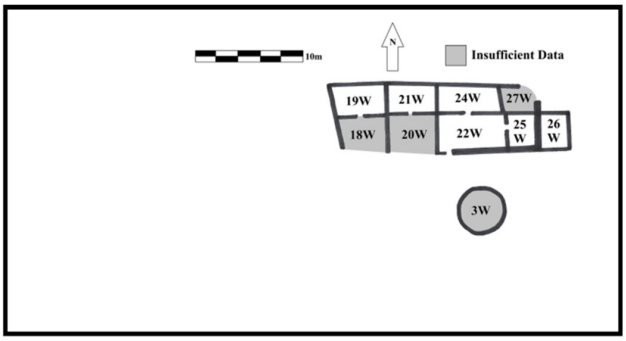

Figure 2 b: Period 2 - Late Chaco (A.D. 1050 to 1130) Type II Masonry

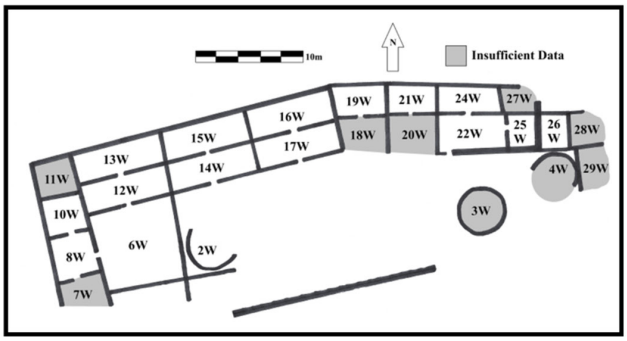

Figure 2 c: Periods 3 & 4 - San Juan/Mesa Verde (A.D. 1050 to 1300) Non-Chacoan Masonry

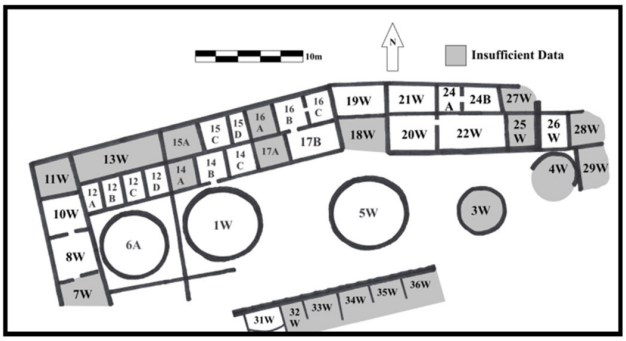

FIGURE 2. Periods 2 to 4 at Guadalupe Ruin (after Pippin, 1987, figs. 48 and 52; Van Dyke, 1999, fig. 2). Individual rooms are labeled (e.g., 15W, 16W).

Figure 3 a: Single wythe, unfaced coursed rubble wall (Type I)

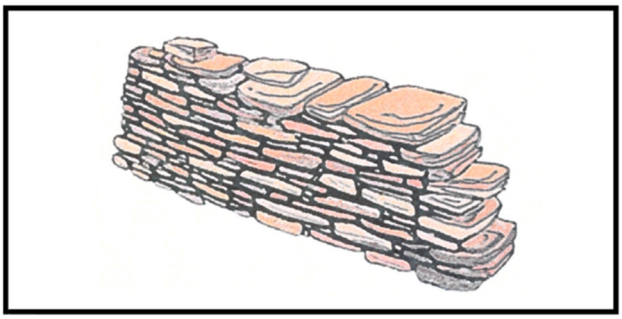

Figure 3 b: Core-and-veneer wall (Type II)

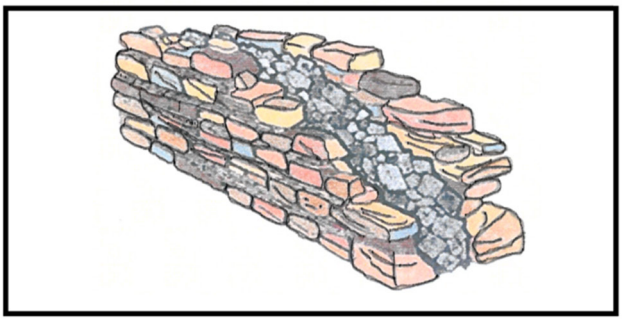

Figure 3 c: Jacal wall - adobe plastered against wooden pole frame

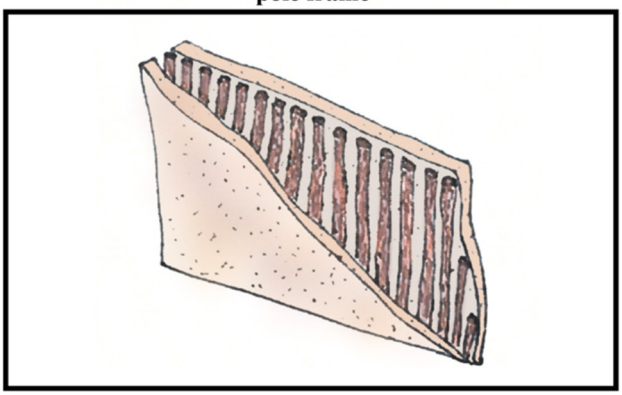

FIGURE 3. Wall construction styles at Guadalupe Ruin (after Baker, 1984, figs. 4, 6, and 9).

modification (Pippin, 1987, p. 127). This occupation displayed cultural characteristics similar to populations in the San Juan/Mesa Verde area; for example, large, San Juan–style kivas (rooms 1W and 5W, Fig. 2c) and the manufacture and use of Mesa Verde black-on-white pottery (Pippin, 1987). From the late 12th century, ceramic evidence displayed a transition from predominantly San Juan Basin/Chaco Canyon styles to predominantly upper Rio Grande Valley styles by the mid-13th century (Hurst, 2003, p. 115).

The San Juan/Mesa Verde inhabitants of Guadalupe Ruin removed fill and trash from abandoned rooms and subdivided them into smaller units with foundationless partitions (Baker, 1984, p. 1; Van Dyke, 1999, p. 465). They also repaired deteriorated masonry and removed sections of the earlier Chacoan structure to construct San Juan–style kivas and add new rooms (Fig. 2c; Baker, 1984, p. 1).

The architecture of the San Juan/Mesa Verde Occupation differed drastically from the architecture of the Chacoan Occupation (Pippin, 1987, p. 114). The newer architecture included the construction of jacal walls (Fig. 3c); the modification of architectural features and doorways, including the preference for entryways on the roof rather than doors; as well as the asymmetrical additions of smaller rooms (Baker, 1984, p. 4; Pippin, 1987, p. 114). Evidence of occupation at Guadalupe Ruin tapered off after the mid- to late-13th century, marking the Terminal Phase; fewer rooms were inhabited, and there are decreasing amounts of material culture in the archaeological record.

Physiographic and Environmental Setting

Guadalupe Ruin lies at an elevation of 1820 m (5975 ft) AMSL in the Rio Puerco Valley, which is located in the transitional boundary between the Colorado Plateau and the Mexican Highland Section of the Basin and Range physiographic provinces (Peterson et al., 1965; Hunt, 1967; Pippin, 1987, p. 12). The middle Rio Puerco Valley is bounded by basalt-capped mesas: Mesa Chivato to the west (elevation 2410–2620 m [7900–8600 ft] AMSL) and Mesa Prieta to the east (elevation 2070–2270 m [6800–7450 ft] AMSL). The narrow mesa on which Guadalupe Ruin is located trends east-west (~300 m long and ~40 m wide [~990 ft long and ~130 ft wide]) and lies between Cañon Salado to the northwest and Cañon Tapia to the southeast.

The current climate supports an open juniper-cholla grassland in the upper Sonoran Life Zone (Bailey, 1913, plate 1; Pippin, 1987, p. 18). However, Pippin's (1987) research indicated that today's climate is warmer and more xeric than during the San Juan/Mesa Verde Occupation of Guadalupe Ruin (12th century CE; Pippin, 1987, p. 173). Sedimentologic observations of alluvium from Tapia Creek (just south of Guadalupe Ruin) and pollen analysis, which show low frequencies of *Chenopodioideae* pollen, indicate that conditions were more mesic and cooler during the Guadalupe Ruin occupation (Pippin, 1987, p. 172).

In the 16th and 17th centuries, hundreds of years after the end of occupation at Guadalupe Ruin, Spanish sources such as Coronado (Bolton, 1959, p. 129–139), Don Juan de Onate (Hammond and Ray, 1953, p. 481), Bishop Pedro Tamaron (Adams, 1954, p. 41–57), Diego de Vargas (Twitchell, 1914, p. 29), and Antonio Barreiro (Bloom, 1928, p. 7–12) recorded the environment as having cold winters with abundant water and resources (Pippin, 1987). Further, these Spanish explorers and missionaries described the Rio Puerco Valley as "abounding in belly-high grasses with vast bosques growing everywhere" (Lopez, 1980, p. 7). These descriptions are contrary to the 19th-century accounts by Anglo-American sources (e.g., Simpson, 1852, p. 123–124; Bartlett, 1854, p. 247–248; Emory, 1857, p. 39, 47–50) that describe barren and dry conditions (Pippin, 1987). By the late 19th century, the modern entrenchment of the Rio Puerco began, with erosion of a deep channel in Cabezon sometime between 1885 and 1892 (Bryan, 1928, p. 278–279; Pippin, 1987, p. 26). Additionally, there was a marked reduction in grassland and increase in xeric shrubs at the time, likely influenced by heavy grazing (Buffington and Herbel, 1965, p. 162–163; York and Dick-Peddie, 1969, p. 165; Hennessy et al., 1983; Pippin, 1987, p. 26).

Prehistoric Resources

The Rio Puerco Valley Project, initiated by Cynthia Irwin-Williams in 1970, indicated that the Rio Puerco drainage supported a considerable population between 900 and 1300 CE (Washburn, 1972, p. 135; Fritz, 1973, figs. 8–11; Pippin, 1987, p. 10; Durand and Durand, 2000, p. 103). Within a 5-mi radius of Guadalupe Ruin, there are over 200 small ruins dating to this time (BLM, 1978), predating and temporally overlapping with the Chaco and San Juan/Mesa Verde Occupations. While exact population numbers are unknown, site size and number of rooms per habitation suggest the population began increasing in the early 10th century and continued into the late 11th century, followed by a slight decline then recovery throughout the 12th century (Durand and Baker, 2003, p. 181). To support such population growth, abundant resources must have been available to the inhabitants of Guadalupe Ruin. According to Pippin (1987, p. 198), exploited resources fall into five general categories: wild game, domestic animals, cultigens, agricultural weeds and wild plants, and water. Most of the resources used by Guadalupe Ruin residents were available less than 2 km (1.5 mi) of the site, although inhabitants may have sought out resources like piñon and artiodactyls from further afield, such as Mesa Chivato (Pippin, 1987, p. 198). Another important resource was lithic material for tool production, which may have been traded for or gathered from farther afield.

Wild game and domestic animals

Faunal remains recovered during archaeological investigations include rabbit, chipmunk, squirrel, gopher, rat, mice, woodrat, vole, coyote, dog, wolf, bear, weasel, badger, skunk, bobcat, deer, pronghorn, bighorn, and various bird species (Pippin, 1987, p. 130–132, tables 53–55). While some of these remains undoubtedly occurred naturally at the site, the inhabitants of Guadalupe Ruin likely utilized most of these species

for meat, hides, and other anthropogenic uses.

The people of Guadalupe Ruin most likely culturally introduced some of these animal species, such as domestic dogs, turkeys, and rabbits (Pippin, 1987, p. 133). Many previous researchers (Beaglehole, 1936, p. 11–14; Lange, 1959, p. 125–128; Tyler, 1975, p. 132–147) cited rabbits as being important among historic Puebloan people as common and ritual food; they hunted rabbits throughout the year individually or by communal rabbit drives (Pippin, 1987).

The faunal remains from Guadalupe Ruin represent 32 species of birds (Pippin, 1987, p. 138). Turkey bones were the most common bird remains from Guadalupe Ruin; turkeys would have provided a significant amount of meat and feathers for blankets (Pippin, 1987, p. 138). Interestingly, turkey is virtually absent in the archaeological record during the Chaco component, while dominating the San Juan/Mesa Verde component (Durand, 1997, p. 10–11). Evidence for the use of domesticated turkey at Guadalupe Ruin during the San Juan/Mesa Verde Occupation includes relatively complete skeletons of both juvenile and adult birds, the presence of large eggshell fragments, and the recovery of numerous highly polished flakes that were presumably turkey gizzard stones (Rohn, 1971, p. 106; Pippin, 1987, p. 138).

The most important source of meat for the inhabitants of Guadalupe Ruin was wild game. Deer, pronghorn, and bighorn sheep accounted for 79% to 95% of the potential meat consumed by the people at Guadalupe Ruin (Pippin, 1987, p. 135). Hunters likely sourced these animals from Mesa Chivato to the west.

The faunal remains in the two occupations of Guadalupe Ruin do not contain equal representation of carnivores. The Chacoan levels of occupation contained only the remains of coyotes or dogs, whereas the San Juan/Mesa Verde levels of occupation contain a wider variety of carnivore remains, including wolves, bears, badgers, and weasels (Pippin, 1987, p. 137). Remains of carnivores and omnivores including skunks, wolves, bears, and coyotes probably represent animals taken for their pelts or for ceremonial paraphernalia, rather than representing a commonplace food source (Henderson and Harrington, 1914, p. 24; Pippin, 1987, p. 138).

Faunal remains in the archaeological record hint at social distinctions. For instance, the faunal remains around the base of the mesa showed low diversity (Durand, 1997, p. 10–11), which suggests there was differential access to some resources. This may also indicate a strict division of space or a social hierarchy. The archaeological record at Guadalupe Ruin contains some exotic faunal remains, including longnose gar and flathead chub (Pippin, 1987, p. 198; Durand, 1997, p. 10–11), which suggests a trade network existed between the Rio Grande and Rio Puerco Valleys.

Cultigens, agricultural weeds, and wild plants

Since the 1970s, flotation techniques (Struever, 1966, 1968; Jarman et al., 1972; Stewart and Robertson, 1973; Minnis and LeBlanc, 1976) and palynological techniques (Sears 1932, 1937; Benninghoff, 1942; Knox, 1942; Deevey, 1944; Anderson, 1955) have allowed archaeologists to learn about the plants grown and collected by previous populations at archaeological sites. The inhabitants of Guadalupe Ruin probably established agricultural plots on gentle slopes of sandy colluvium underlain by shale or clayey alluvium in Cañon Salado and Cañon Tapia (Pippin, 1987, p. 198). The archaeological record shows that the major cultigens at Guadalupe Ruin were corn and gourds (Pippin, 1987, p. 155). The inhabitants of Guadalupe may also have cultivated little barley (*Hordeum pusillum*; Pippin, 1987, p. 156).

Seeds and pollen from the amaranth and goosefoot families are abundant at Guadalupe Ruin, indicating these plants may have been an important resource (Pippin, 1987, p. 156). The occupants of Guadalupe Ruin may have encouraged these plants in their agricultural plots (Pippin, 1987, p. 157). Likewise, beeweed and clammyweed may have been desirable agricultural weeds considering historic Puebloans used these as greens for food and for pottery paint (Stevenson, 1915, p. 69; Jones, 1931, p. 26; Swank, 1932, p. 37; Castetter, 1935, p. 24; White, 1945, p. 559, and 1962, p. 107).

The inhabitants of Guadalupe Ruin would have utilized wild plants as well. The cones, cone scales, and nutshells of piñons are abundant in the faunal assemblage from Guadalupe Ruin (Pippin, 1987, p. 157, table 60). Gatherers likely collected these resources from Mesa Chivato to the west (Pippin, 1987, p. 198). Archaeological evidence also indicates inhabitants of Guadalupe Ruin collected prickly pear and hedgehog cactus as food sources and may have harvested one of several naturally occurring cool-season grasses (Pippin, 1987, p. 156–157).

Water

The inhabitants of Guadalupe Ruin benefited from a more mesic climate (Pippin, 1987) with presumably greater discharge of the Rio Puerco. They would have been able to collect water from the Rio Puerco and its tributaries, Cañon Salado and Cañon Tapia.

Lithic material

The Rio Puerco alluvial system may have provided some lithic material, such as chert/chalcedony and silicified wood, for inhabitants of Guadalupe (Brett, 2003, p. 140). Mesa Prieta to the east and Mesa Chivato to the west are capped in basalt flows; they may have provided additional lithic material, especially if inhabitants of Guadalupe were already accessing these landforms for other resources such as piñon and game (Brett, 2003, p. 140). North of Guadalupe Mesa are pediment chalcedony quarries that were likely utilized (Brett, 2003, p. 145). The Jemez Mountains are a known source of obsidian, and inhabitants of Guadalupe may have either traded for this raw material or traveled for it (Brett, 2003, p. 147).

Interpretation

Researchers have theorized about the expansion of Chacoan culture into the middle Rio Puerco Valley with the establish-

ment of Guadalupe Ruin. Pippin (1987) and Irwin-Williams and Baker (1991) noted the region would have had significant agricultural potential as well as high environmental diversity (Durand and Durand, 2000, p. 107). The Rio Puerco Valley is a natural corridor heading north into the San Juan Basin, which would have allowed for more accessible travel and trade between Guadalupe Ruin and Chaco Canyon (Durand and Durand, 2000, p. 107). Judge (1989, p. 235–237) posited that the location of Guadalupe Ruin may have related to control of the Cerrillos turquoise source; turquoise found at Guadalupe Ruin suggests the community was part of large trading network (Durand and Durand, 2000, p. 107). The archaeological record indicates that a pottery trade network probably existed with the communities at Acoma/Cebolleta Mesa, 94 km (58 mi) to the southwest (Ruppe and Dittert, 1952, 1953; Pippin, 1987, p. 198).

ARCHAEOLOGICAL INVESTIGATION HISTORY

Emma Lou Davis and James Winkler first recorded Guadalupe Ruin as an archaeological site (LA2757; ENMU848) in an unpublished University of New Mexico survey in 1961 (Pippin, 1987, p. 2). From 1970 to 1981, Cynthia Irwin-Williams conducted inventories throughout the drainage in a project known as the Rio Puerco Valley Project (Baker and Durand, 2003; Baker, 1991, p. 8; Durand and Durand, 2000, p. 103). The goal of the Rio Puerco Valley Project was to provide an intensive diachronic study of Ancestral Puebloan adaptation in the middle Rio Puerco Valley (Pippin, 1987, p. 1). In 1972, as part of the Rio Puerco Valley Project, Eastern New Mexico University undertook test excavations to gather preliminary cultural and temporal data (BLM, 1978). When Irwin-Williams passed away in 1990, Baker finalized a synthesis of her research and submitted it to the BLM in 1991. Regional in its scope, Irwin-Williams and Baker (1991) documented the archaeological survey of the valley, the geology of the region, the dating of the sites, a settlement pattern analysis, and other studies (Durand, 1997, p. 1). In all, the Rio Puerco Valley Project identified 1232 archaeological sites ranging from the Paleo-Indian period to the historic period (Baker, 2003, p.19).

Lonnie C. Pippin contributed to the Rio Puerco Valley Project by excavating Guadalupe Ruin between 1973 and 1975 (Durand and Durand, 2000, p. 102–103). Pippin excavated 40% of the pueblo, including 15 rooms, four kivas, and three plaza test trenches; his work defined 50 rooms constructed in five phases (four Chacoan and one Mesa Verde; Baker, 1984, p. 1; Pippin, 1987, p. xiv). Pippin's (1979) analysis culminated in a doctoral dissertation in 1979 at Washington State University. In 1977 and 1978, J.A. Terrel of Eastern New Mexico University conducted an architectural attribute analysis of Guadalupe Ruin (Terrel and Durand, 1979; Baker, 1984, p. 1).

Unfortunately, most of the fill from excavation units disappeared over the edges of the mesa. As a result, only limited amounts of backfill were available to preserve the excavated areas. This ushered in stabilization efforts and more controlled management of the site by the BLM.

ADMINISTRATIVE HISTORY

In December 1979, the New Mexico Cultural Properties Review Committee voted to enter Guadalupe Ruin into the State Register of Cultural Properties (SR760) and to recommend it for nomination to the National Register of Historic Places (reference number 80002571; Merlan, 1979). The listing of Guadalupe Ruin in the state and national registers emphasized the importance of preserving this significant cultural resource (Baker, 1984, p. 5).

The deterioration of the masonry and exposure of the architecture following excavation necessitated the design of a comprehensive plan to slow erosion and aid preservation. As the institution responsible for the site's excavation, Eastern New Mexico University in cooperation with the BLM undertook the task of developing a preservation program for Guadalupe Ruin (Baker, 1984, p. 5). Managers considered completely backfilling the site, but they determined it to be infeasible since most of the original fill was gone and the location is remote and difficult to access (Baker, 1984, p. 5). In 1978, Larry Baker undertook some minor stabilization efforts at Guadalupe Ruin; this initial effort was limited to the western area and the addition of modern roofs to the excavated kivas (Baker, 2003, p. 13). More comprehensive stabilization began in 1982 (Baker, 1984, p. 5); these efforts sought to stabilize exposed masonry walls and minimize loss of in situ archaeological data (Baker, 1984; Baker, 2023, p. 13). Once preservationists had stabilized the walls, 23 rooms were partially backfilled. Baker (1984) published an account of the stabilization, along with excellent photographic documentation of the site's architectural variability (Pippin, 1987).

In 1991, the BLM developed a plan to further stabilize the walls. Preservationists developed a tinted cement mortar for use at Guadalupe Ruin; it consists of calcium aluminate cement (Lumnite), alluvial sand, and soil (BLM, 1991, ch. 4). This mortar provided additional strength along the wall facing by reducing the erosion of mortar in the joints and was strong enough to withstand direct exposure to weathering along the wall top and potential visitor traffic (BLM, 1991, ch. 4).

In October and November 1999, the Chaco preservation crew from the National Park Service at Chaco Culture National Historical Park partnered with the BLM Rio Puerco Resource Area Office to conduct preservation treatments at Guadalupe Ruin. This effort treated 19 rooms and one kiva; the team focused on preventive maintenance of the replacement mortars, repointing eroded mortar, and resetting capping stones. In addition, 23 rooms and three kivas were partially backfilled to equalize interior and exterior soil levels and relieve pressure on the walls, prevent moisture percolation through the fragile masonry, and correct drainage problems.

In 2004, two of the exposed kivas had new roof structures installed to replace the original roof structures from the late 1970s (Neal and Walka, 2008, p. 1). Unfortunately, the roof structures from the 1970s and 2004 were free-standing with no anchor points, making them unable to withstand the winds that typically blow from the southwest across the ridgetop (Neal and Walka, 2008, p. 1). Anchoring became one of the biggest

challenges to Neal and Walka's 2008 efforts to re-roof the kivas, the main concern being how to anchor the roof structure with the least amount of disturbance to possibly intact cultural fill material surrounding the kivas. BLM managers decided to use concrete piers and anchors on each corner of the roof structures and to avoid subsurface ground disturbance within the kiva interiors (Neal and Walka, 2008, p. 2).

SUMMARY

Guadalupe Ruin is an important Chacoan outlier in Sandoval County, New Mexico. Affiliates of the Chaco culture occupied this site in the middle Rio Puerco Valley between 900 and 1130 CE, with construction atop the mesa beginning around 960. After 1130 and into the late 13th century, a San Juan/Mesa Verde population occupied and remodeled the pueblo. People from both occupations benefitted from numerous resources and good agricultural land. Situated in a natural topographic corridor into the San Juan Basin, Guadalupe Ruin was likely part of a trade network that may have included Cerrillos turquoise. This site has been known to archaeologists since 1961, with excavations carried out between 1973 and 1975. The extant architecture has received in-depth analysis, and researchers have analyzed the archaeological records from various perspectives, including subsistence, cultural affiliation, and climate. Since the end of excavations, the BLM has conducted numerous stabilization and interpretation efforts. This paper has barely brushed the vast amount of information related to Guadalupe Ruin, but hopefully has conveyed the depth of the data and the necessity of preserving this valuable site.

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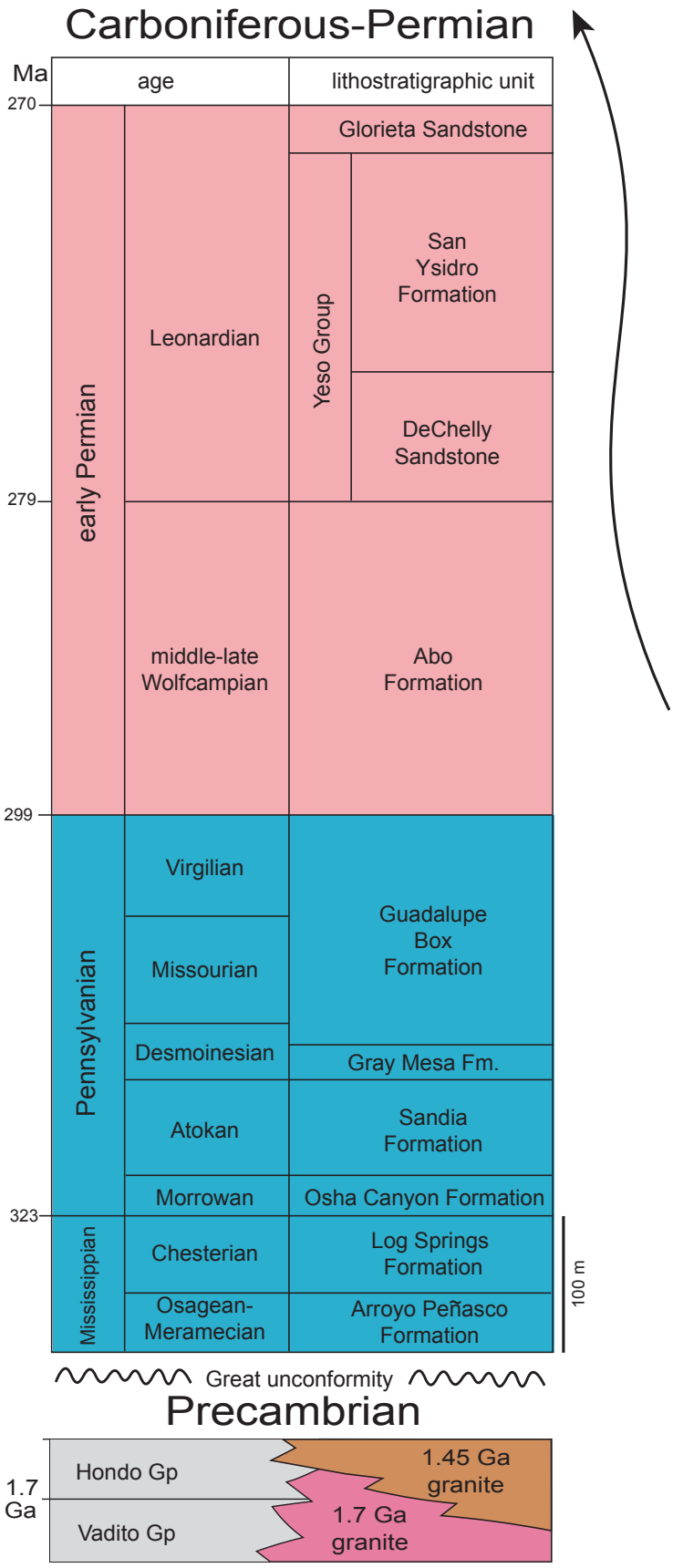
The prominent placement of the pueblo of Guadalupe Ruin provides expansive views of the Rio Puerco Valley. This characteristic would have been important to the people who built the structures to observe and influence trade and migration routes.


Carboniferous-Permian
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early Permian
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middle-late Wolfcampian
Glorieta Sandstone
Yeso Group
San Ysidro Formation
DeChelly Sandstone
Abo Formation
Pennsylvanian
Virgilian
Missourian
Desmoinesian
Atokan
Morrowan
Guadalupe Box Formation
Gray Mesa Fm.
Sandia Formation
Osha Canyon Formation
Mississippian
Chesterian
Osagean-Meramecian
Log Springs Formation
Arroyo Peñasco Formation
100 m
Great unconformity
Precambrian
1.7 Ga
Hondo Gp
Vadito Gp
1.45 Ga granite
1.7 Ga granite