NewsMAC

Newsletter of the New Mexico Archeological Council

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Contents

EDITOR'S INTRODUCTION

Welcome to the (late) Summer 2018 issue of NewsMAC.

In this issue, we highlight research abstracts from Nicholas Kessler and Kellam Throgmorton, both of whom were recipients of NMAC research grants in 2017. Mr. Kessler's research focuses on ecosystem indicators for the productivity of lithic-mulched fields in the Rio Chama area. Mr. Throgmorton's research is oriented to identifying changes over time at Padilla Well and Morris 40 great house communities.
Karen Swope and colleagues published a Historic Resource Study of the Chaco Culture National Historical Park (2017). A publication announcement and a sample of historical imagery is included on 19.

If you have a paper that you would like to share with all of us – your colleagues – please let us know. Research papers, book reviews, opinion essays, photographic essays, publication announcements, collages, haiku, or field hacks: if it has to do with New Mexico archaeology NewsMAC is interested! Email me at: bsisneros@swca.com

Thanks, and enjoy!

Brianne Sisneros
NewsMAC Editor

Project Brief: Ecosystem Indicators of the Productivity and Environmental Legacies of Lithic-mulched Fields in the Lower Rio Chama, New Mexico

Nicholas Kessler
NMAC Grant Recipient Winner, 2017

Project Description

Between ca. A.D. 1300 and A.D. 1600, Puebloan farmers in the lower Rio Chama basin of New Mexico applied gravel mulch to sandy upland and terrace soils in extensive complexes of run-off irrigated fields. This study investigates environmental changes associated with these fields and the anthropological implications of their construction. Specifically, the project is collecting and analyzing tree-ring, soil nutrient, and soil organic matter measurements from complexes of fields near the Ancestral Tewa Pueblo of Poshu'owingeh (LA 274) (Figure 1), to quantify the degree to which this technology alters plant productivity. Measuring the association of lithic-mulch fields with patterns of productivity characterizes the degree to which this technology influences soil water content, a major limiting factor for agricultural productivity both in the past and today. Lithic-mulch fields, and associated dryland features, have long been assumed to represent an intensification, part of an extensive dryland cultivation mix which served to increase and diversify the available land base. However, observations including an emerging awareness of cotton cultivation, new estimates for peak population sizes, and the recognition by archaeologists that agricultural fields are situated in and embody ritual landscapes complicates simple models for the function and value of lithic-mulch fields to Tewa Ancestors. This study addresses questions about the agricultural potential and performance characteristics of lithic-mulch technology via dendro-chronological measurements of tree growth and climate response and supplements this information with measurements of soil organic matter (SOM) and organic carbon, a relative indicator of long-term ecosystem productivity. The findings will contribute data relevant to anthropological questions of population growth, aggregation, and economic intensification as well as to testing the conceptual model that human landscape modification has long-term legacy impacts.

2017 Pilot Project Summary

A pilot project conducted in the summer of 2017, sponsored by a grant from the New Mexico Archeological Council, developed methods for fieldwork and generated preliminary data. Intensive survey consisted of pedestrian coverage of topography and microtopgraphy likely to harbor agricultural features and covered 69 acres (Figure 2). Features were mapped as one of four categories; small fields, large fields, barrows, and linear rock alignments. The survey mapped approximately 50 large lithic-mulched fields in large overlapping complexes, 67 small mulched fields, 13 barrow pits, and 31 rock alignments (Figure 3). Data collection consisted of 30 soils samples and 65 tree-ring samples; data were collected evenly from lithic-mulched fields and unmodified control locations.

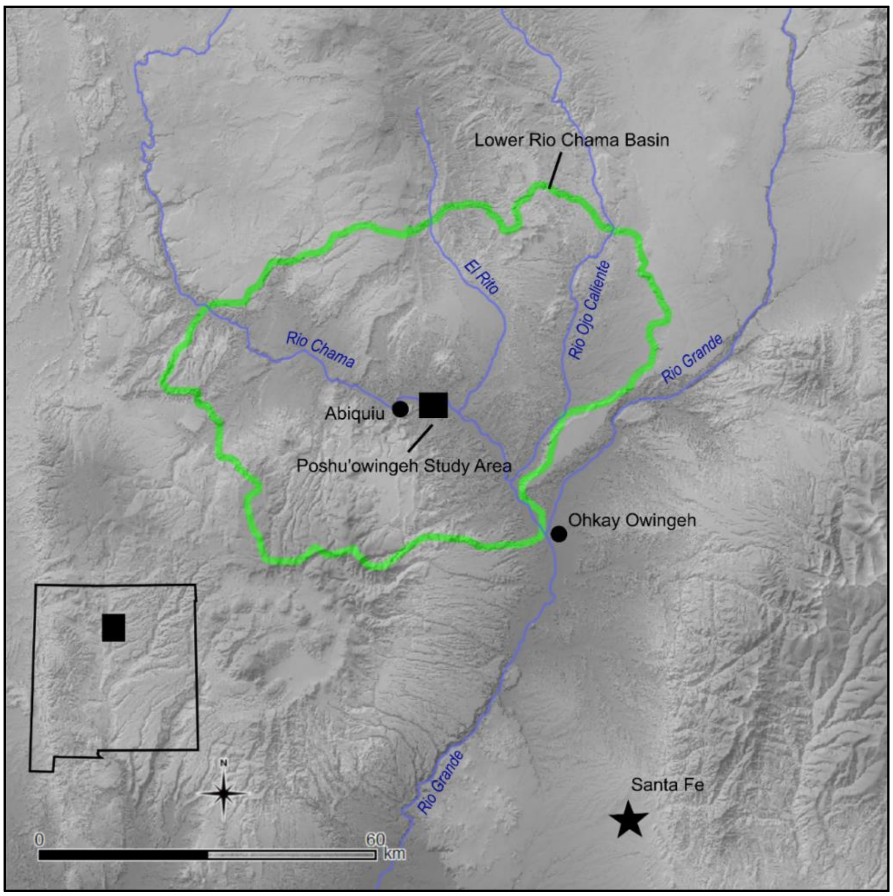

Figure 1. Location of the proposed study area in relation to the lower Rio Chama basin.

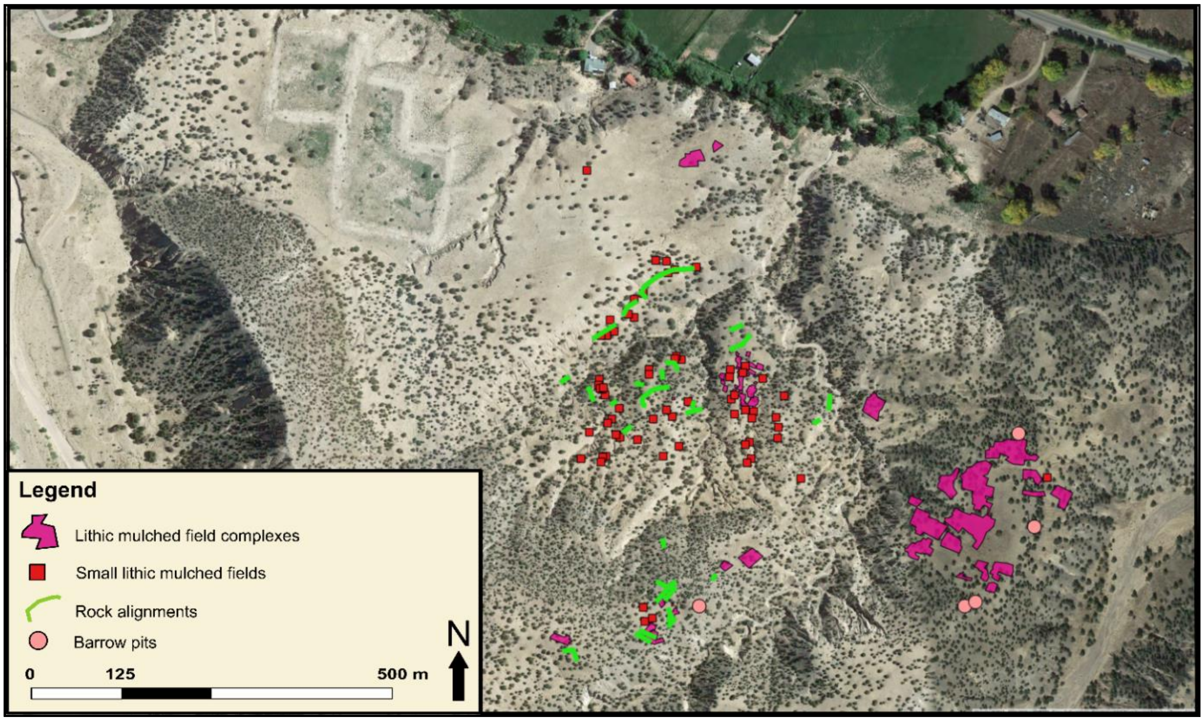

Figure 2. Extent of surveyed and mapped agricultural features around the site of Poshu'ownigeh (upper left). The mapped extent of dryland agricultural fields is a fraction of the actual extent.

Small field types include lithic-mulched plots, unmulched bordered plots, and paired grids. Fields were considered large if they could be mapped from a combination of GPS points and aerial photos. These features consist of bordered and unbordered mulched fields, and less frequently, contiguous gridded plots. Barrows were easily recognized as deep (1-2 m including surrounding mound) pits surrounded by low mounds. Barrow pits were excavated into a gravel stratum and terminate near the top of underlying sand. Pits are usually near lithic-mulched fields and presumably supplied mulch. Linear rock alignments consist of lines of cobbles and boulders, often at angles to other alignments, which do not serve as an obvious border for a garden plot. Several references describe alignments as functioning to direct runoff to downslope fields (Bruge 1984; Maxwell and Anschuetz 1992; Anschuetz 1998; Ford and Swentzell 2015), and some appear to serve this purpose. Many alignments may have served as borders for mulched or unmulched fields. Other rock alignments may have served as retainers for shallow planting beds along the stratigraphic contact between gravel and sand. Artifacts observed in and around field complexes included Biscuit Ware sherds, flaked-stone debitage, utilized flakes, moderately sized unifacial or (more rarely) bifacial knives, and projectile points and point fragments. No intrusive ceramics were recognized in the field complexes. One minimally altered boulder with shallow dishing was observed with a round one-hand mano still resting in the milling surface.

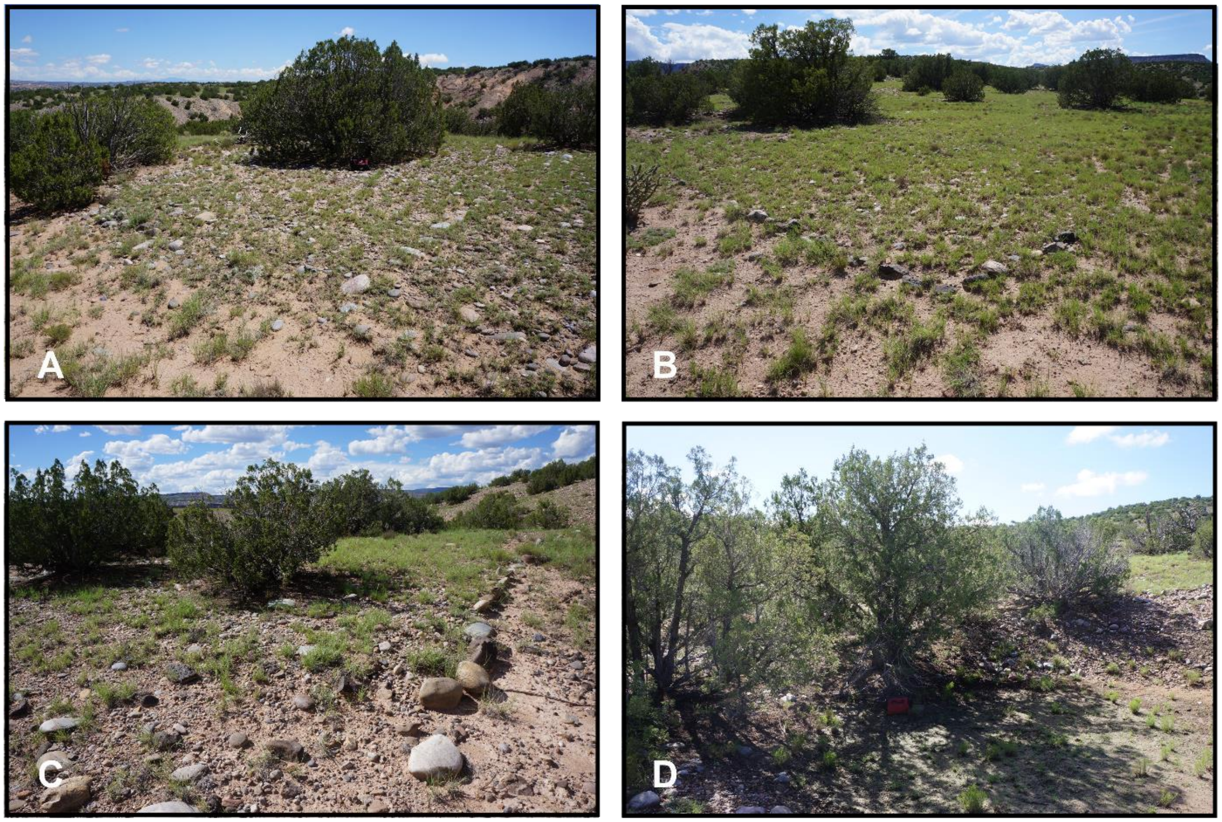

Figure 3. Representative agricultural features found on the landscape surrounding Poshu'owingeh. Note that in each picture one-seed juniper have established within and around relict fields. (A) Extensive mulched field with internal partitions and partial rock border. (B) Linear rock alignment forming the corner of a gridded field. (C) Lithic-mulched field with distinct linear rock border. (D) Mounded edges of a gravel barrow pit used to supply nearby fields with mulch.

In dryland environments, plant growth is the integral of hydrological, ecological, and physiological factors that regulate the availability of water in the unsaturated soil zone. Lithic-mulch is hypothesized to increase average soil water content and should predictably affect ecosystem productivity. If other factors are held constant, higher soil water content should increase water conductivity from the soil-root boundary to leaf stomata and should enhance the rates of gas exchange and carbon assimilation in plants. This would result in higher rates of biomass accumulation in plant bodies and increased organic matter deposition in soils. To test this proposal, dendrochronological and soil chemical analysis were conducted at sites modified by lithic-mulching and at unmodified control localities.

Soil samples were collected in 5cm increments from 0-10cm below surface from control locations, from the gravelly mulch which was around 10cm thick, and from the first 5cm below mulch. To assess the comparability of the chemical and textural data for mulched and control locations, and the relationship of these variables with water content and organic carbon, a principal components analysis was conducted to compare how texture, bulk density (g cm^{-3}), volumetric water content (cm^3), nitrogen (%), and available/extractable phosphorus (‰) covary with soil organic matter (%) and carbon concentrations (g cm^{-3}). The individual factor map reveals three distinct clusters of samples (Figure 4A): (1) sandy loam from controls, mulch, and below mulch; (2) sandy clay loam from controls, (3) and sandy loam and sandy clay loam from below mulch. Lithic mulch characterized by gravelly sandy loam has a higher percentage of water filled pore space (measured from volumetric water content and bulk density) which may contribute to higher SOM levels than controls (Figures 4B and 4C).

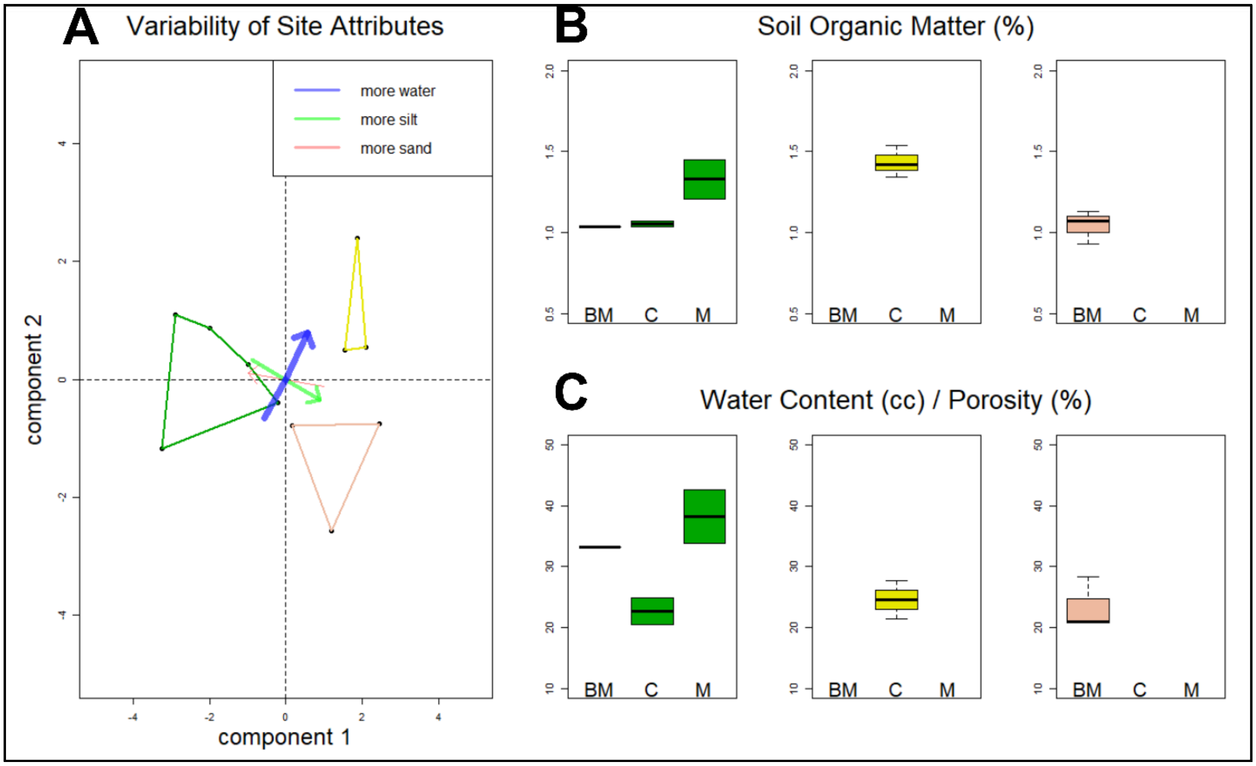

Figure 4. Summary of soil data from pilot project. A. Map of samples in the dimensions of the first two principal components. Colored arrows depict the direction of correlations with important soil attributes. Thickness of the arrow is scaled to the relative strength of correlation with both principal components. Polygons highlight clusters of samples and the color corresponds to the bar plots at right. B. Distribution of SOM by context; below mulch (BM), control (C), and within mulch (M). C. Distribution of water filled pore space for each sampling context; below mulch (BM), control (C), and within mulch (M).

These early observations support the idea that lithic mulch increases surface infiltration of water and enhances organic matter deposition in soils. This observation requires replication, and it is not clear from the pilot study if this effect is consistent across the range of soil characteristics present at the site or the lower Rio Chama basin in general. However, the handful of tree-ring pith dates obtained so far corroborate soil evidence for increased productivity. Biomass accumulation in one-seed juniper trees established on mulched fields proceeds at roughly 30% faster rate than in unmulched controls.

Future Research

The 2017 pilot project made possible by the New Mexico Archeological Council served as a springboard for more intensive research planned for the summer of 2018. The preliminary data offers hints of a significant ecosystem effect of lithic mulching, but more corroborating evidence is needed. To this end, funds are being sought from multiple other sources including the National Science Foundation in the form of Dissertation Improvement Grant. The next round of fieldwork will investigate a wider variety of topographic contexts, involve more formal selection criteria for control localities, and collect samples from soil depths more representative of the rooting depths of crops.

ACKNOWLEDGEMENTS
In addition to the New Mexico Archeological Council, I wish to thank Anne Baldwin, Mike Bremer, and Santa Fe National Forest staff for their support and cooperation. The University of Arizona School of Anthropology has provided additional internal support for this project for which I am grateful. Ron Towner and others at the Laboratory of Tree Ring Research have provided equipment, lab space, and advice in support of this project.

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Project Brief: Report to the New Mexico Archeological Council on Fieldwork Conducted at the Morris 40 and Padilla Well Great House Communities in 2017

Kellam Throgmorton, M.A.
NMAC Grant Recipient Winner, 2017

In May of 2017 the New Mexico Archeological Council (NMAC) awarded me a $420 grant to assist in my dissertation fieldwork at the Morris 40 and Padilla Well great house communities, both in San Juan County, New Mexico (Figure 1). I am grateful for the grant—it was very helpful in getting fieldwork off the ground, particularly some of the geophysical work (magnetic gradiometry) that was conducted at Morris 40 in late August 2017. The NMAC grant helped purchase the following supplies for fieldwork:

• Custom photo boards for photographing sherds and lithics in the field (purchased from Ryans' Custom Products in Dolores, Colorado). Dean Wilson was particularly pleased with the photo boards and gave them his personal endorsement during fieldwork!

• Six 100-foot lengths of braided polyrope. These were used to layout the 30 × 30m grids used for geophysical survey.

• Metal-free shoes and pants. Magnetic gradiometry survey requires all personnel to be free of metal.

• Paper field forms printed on mid-quality stock. The forms ensure data redundancy, and the heavier weight stock was more field resilient.

• Three-ring binders for filing the completed paperwork. I also bought a three-hole punch. The binders are currently sitting on the shelf—they are the original record of field data (which is also scanned and entered into a Filemaker database).

• A first aid kit for the field crew. Only had to be used once, as far as I can remember!

• Equipment to assemble a scanning jig for use at the Chaco Archives (Maxwell Museum, University of New Mexico) and the Archaeology Records Management Section (Laboratory of Anthropology, Santa Fe). The jig consisted of several lengths of PVC pipe, elastic bands, and a modified binder clip—a cost-effective method that used my Samsung Android to rapidly scan many of the more fragile site files and other archival material.

Dissertation work during 2017 involved three separate phases—site records searches and archival work, fieldwork, and museum collections work.

Records Searches and Archival Work

I visited the Archaeological Records Management Section (ARMS) of the Laboratory of Anthropology in Santa Fe from July 24-27th. ARMS houses the site records related to all sites entered into the Laboratory of Anthropology database. Here, I examined project and site files related to the broader Morris 40 community. These were primarily LA forms related cultural resource management projects dating from the late 1970s to 2014. However, I also examined copies of Deric Nusbaum's site records from the 1935 La Plata Valley survey, including typed transcripts of his field notes.

From July 31st to August 3rd I visited the Chaco Archives at the Maxwell Museum to examine site files related to the Chaco Project survey of the Padilla Wash Valley in 1972. In addition, I examined maps and ceramic tallies completed by Thomas Windes in 2002. Finally, I perused some of the records related to the 1901 Tozzer-Farabee Expedition, which passed through the area before conducting excavation at Mesa Tierra and other sites west of Padilla Wash.

Collections and Museum Work

Upon completing the records search associated with the Morris 40 community, I realized that collections excavated from the site were probably curated at the University of Colorado Museum of Natural History (CUMNH) and the Colorado Springs Fine Arts Center at Colorado College (FAC). The CUMNH collection was excavated by Earl Morris in 1916; the FAC collection was donated by the McClurg family in 1935, but may have included vessels obtained by Earl Morris's father, Scott, in 1892 from Morris 40.

I visited the collection at CUMNH, which was comprised of sixteen whole vessels, from December 28-30th. I took photographs and measured and described the vessels. While at CUMNH I also examined correspondence between Earl Morris, Livingston Farrand (the president of the University of Colorado in the 1910s), and several Southwest archaeologists. Finally, I examined other archival documents related to the Morris 40 collections, including accession records and old collection catalogs.

From December 6-8 I visited the collections at the FAC. I photographed and made observations on twenty-five vessels that originated with the 1935 McClurg donation. Earl Morris wrote that his father, Scott, had bartered for some vessels excavated from the Morris 40 community in 1892, and that he had immediately sold this collection to Gilbert McClurg. Very limited documentary evidence exists of the transactions related to the acquisition of this collection, so my inquiry at FAC was primarily concerned with determining which, if any, of the McClurg vessels might have originated at Morris 40.

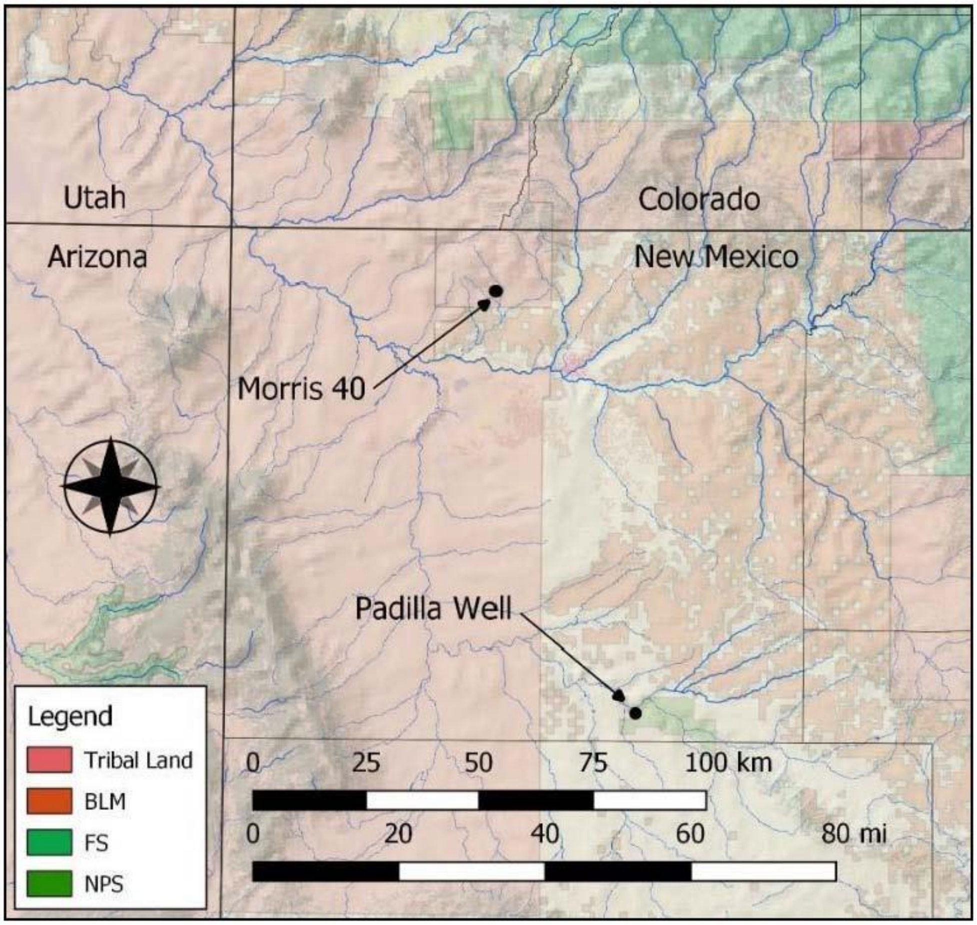


Figure 1. Location of Padilla Well and Morris 40 in the San Juan Basin of New Mexico.

Fieldwork

I conducted fieldwork at two Chacoan communities—Morris 40 and Padilla Well. The bulk of the fieldwork occurred during two back-to-back eight-day field sessions at the end of August and the beginning of September. The crew consisted of Dr. Ruth Van Dyke (dissertation advisor-Binghamton University), C. Dean Wilson (ceramicist), Joshua Jones (lithics analyst), Timothy Kearns (lithics analyst), Dr. Tim De Smet (geophysics crew-Binghamton University), Daniel Leja (geophysics cr ew-Binghamton University), Hunter Claypatch (geophysics crew-Binghamton University), with help from Lori Reed, Brian Halstead, and Cory Breternitz. We accomplished the following during our two eight-day sessions at Morris 40 and Padilla Well:

Morris 40

- Twenty 30m x 30m, and one 15m x 30m magnetic gradiometry survey grids (18,450 sq m, 4.56 acres)
- 52 artifact sample units (3-6m in diameter)
- 70 architectural contexts were measured and described
- Several hundred aerial photographs were taken with a quadcopter drone which will be used to create a 3D photogrammetric model of the site
- Several gigabytes of thermal imaging data were taken using the quadcopter drone
- 8755 white, red, and gray ware sherds were recorded
- 3250 pieces of flaked stone were recorded

Padilla Well

- Seventeen 30m x 30m, and one 15m x 30m magnetic gradiometry survey grids (15,750 sq m, 3.89 acres)
- 44 artifact sample units (2-6m in diameter)
- 30 architectural contexts were measured and described
- 7893 white, red, and gray ware sherds were recorded
- 1205 pieces of flaked stone were recorded

Preliminary Results

I recently presented preliminary results from the project at the 83rd Annual Meeting of the Society for American Archaeology in Washington DC. So far, I have begun to finalize the site maps based on field notes, mapped wall alignments, and the rough field data from the magnetic gradiometry survey. I have completed processing several of the magnetometer grids and the results from these are very informative. Dean Wilson finalized his ceramic counts shortly after the completion of fieldwork, and I have used those results to compute mean ceramic dates for artifact sample units. At this point, I have focused on understanding the development of the two communities over time, and comparing and contrasting their histories. The observations and discussion below are based on the SAA poster I presented, which summarized my analysis to date.

Morris 40 (see Figures 2a-2e, below)

Names: Navajo Springs, Cottonwood Springs, Squaw Springs, Morris 40, Chaco 3-15, LA 1988 [this only refers to the great house itself—there are many additional LA numbers for community structures]
Dates of work: 1875? [displayed on Hayden Expedition Maps based on W.H. Holmes work in La Plata Valley 1875], 1892, 1916, 1935, 1978-9, 2014, various projects in the 1980s documented portions of the community
Land Status: Ute Mountain Ute Tribal Land
Setting: valley piedmont at debouchment of entrenched arroyo through sandstone uplift
Farming potential: spring/stream-fed arroyo floodplain, dry farming sandy plains (grassland)

History of the Morris 40 Community Core

- Early Pueblo I village ca. AD 750-800
- Large, linear aggregated village ca. AD 840, with U-shaped structure and a possible great kiva (see Figure 4 for magnetometer results from a of portion of the linear village).
- Linear village persists until AD 1020/1050 (though households coalesce into compact compounds remodeled within original village outline)
- Community significantly reorganizes ca. AD 1020/1050
- Great house constructed on platform mound comprised of architectural and midden debris of an early 10th century structure
- Road constructed and a new neighborhood established west of road segment
- Some households continue to occupy older structures
- Great kiva possibly constructed across road segment in early AD 1100s?
- Community declines ca. AD 1150 and some reoccupation in late AD 1100s or early 1200s

Padilla Well (see Figure 3, below)

Names: Padilla Wash/Well, 29SJ 352, Bc 395, LA 40352 [This only refers to the great house itself—there are many additional LA and Smithsonian numbers for community structures]
Land Status: National Park Service, Chaco Culture National Historical Park
Dates of work: 1890s-1900s [no direct evidence of visits by the various scientific expeditions to the Chaco region, but records from the Tozzer and Farabee expedition [1901] indicate extensive looting had already occurred at other ruins between Penasco Blanco and Casa Del Rio], 1951, 1972, 1974, 1990s-2000s.

Setting: seeps at edge of valley fill atop eroded sandstone/shale hills
Farming potential: seep-fed sand sheets, dry farming valley sediments (grassland), augmented with seasonal runoff, Chaco Wash 1 mile north

History of the Padilla Well Community Core

• Single habitations cluster near a seep in the AD 700s or very early AD 800s

• Structures and trash are difficult to identify throughout AD 800s, though community continued to be inhabited and there are numerous possible habitation areas

• Four new roomblocks built ca. 875-925 (two are obscured by later construction), including a large masonry and adobe structure near the old seep at the south end of the community core (see Figure 5 for preliminary results of magnetometer survey atop this structure).

• New roomblocks were about 40 - 60m long, multi-household structures

• Great house constructed ca. AD 1000/1050

• Road and great kiva constructed with great house

• Remodeling of some earlier structures, abandonment of others

• Community declines ca. AD 1150

• Late reoccupation ca. 1250-1300

Comparisons and Conclusions

There are distinct differences in the development of the two communities up until the Classic Bonito Phase (ca. AD 1020-1100), at which point they develop a similar canon of architectural features and landscape modifications (roads, earthen berms, great houses and great kivas).

Morris 40

• Morris 40 is one of the southernmost large, linear villages

• The linear village pattern persisted until about AD 1000, or 100 years longer than most other linear villages

• Construction of the great house resulted in a wholesale reorganization of the community, including the abandonment of several roomblocks and the destruction of a large, AD 900s-era building, suggesting significant sociopolitical change

Padilla Well

• There were minimal changes in settlement patterns at Padilla Well throughout the AD 700s and 800s

• The dispersed community pattern remained into the AD 900s, though the scale of individual roomblocks increased

• Roomblocks built at Padilla Well in late AD 800s and early AD 900s are consistently 40-60m long, possibly representing a multi-household social group (but smaller than linear village segments).

• Great house construction did not involve significant reorganization of the community layout, and aside from the masonry construction the great house is not significantly different in layout than the preceding roomblocks

General Comments

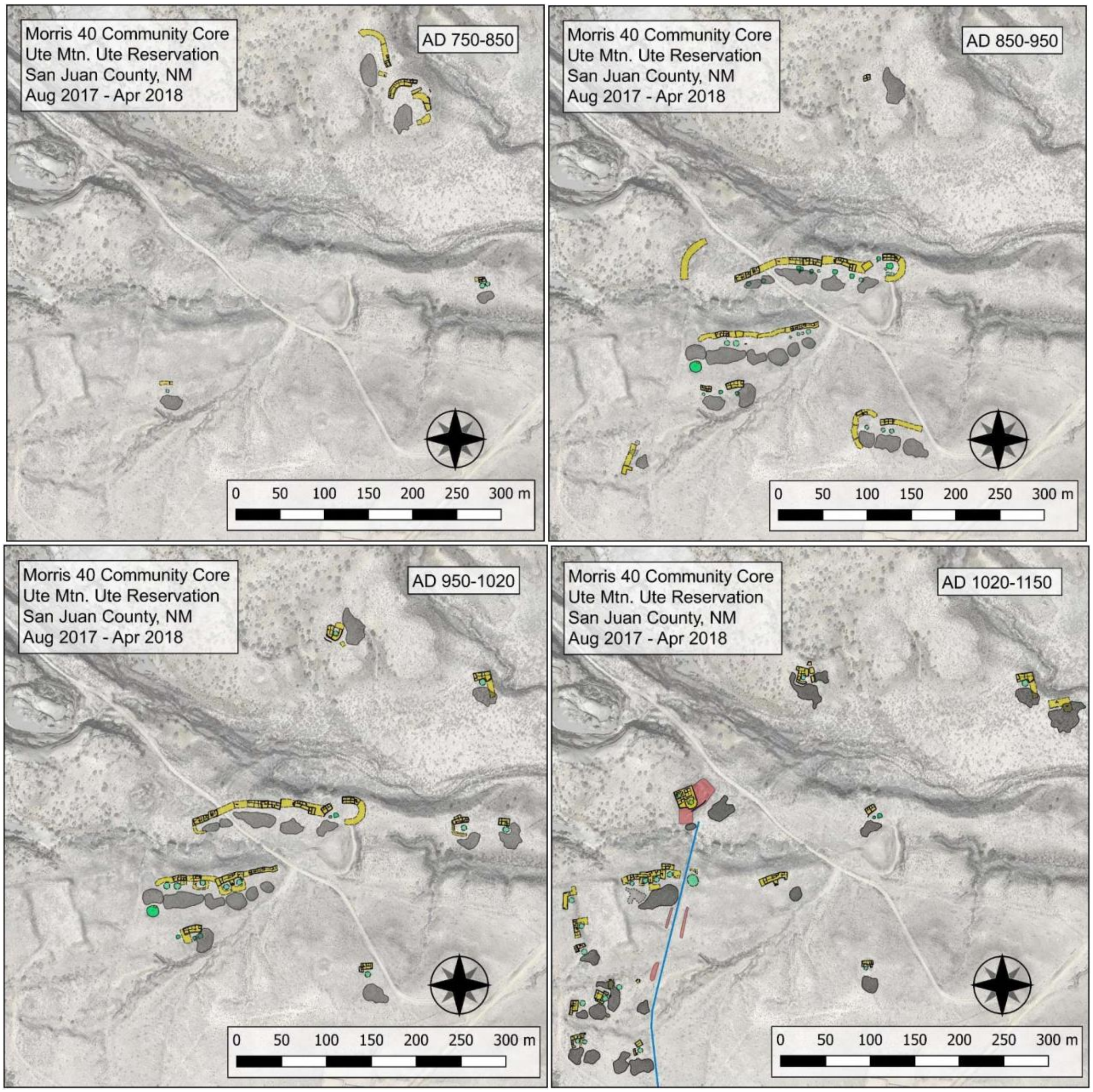
• Without the magnetometer survey, we would not have been able to confidently identify many of the AD 800-900s-era structures in either community

• Based solely on community layout, these two communities had significantly different sociopolitical organization prior to great house construction in the middle AD 1000s.

Comments and Acknowledgments

I want to thank the NMAC for funding portions of my research. Additional support was provided by a National Science Foundation dissertation improvement grant (Project #1741893), and a PaleoWest scholarship, Timothy De Smet at the Binghamton University Geospatial and Remote Sensing laboratory provided additional technical support.
Research at Morris 40 was conducted with the support of the Ute Mountain Ute Tribal Historic Preservation Office, while fieldwork at Morris 40 occurred with the permission of the National Park Service.

Dr. Ruth Van Dyke was instrumental in guiding the project, while Cory Breternitz and Adrian White graciously provided accommodations during portions of this research. Dean Wilson analyzed ceramics in the field, while Daniel Leja and Hunter Claypatch assisted with the geophysical survey. Thanks also to Lori (Reed) Stephens, Tim Kearns, Joshua Jones, Brian Halstead, Jim Potter, and Nichole Shurack.



Figures 2a, 2b, 2c, 2d. Top, left to right: Morris 40 community AD 750-850 and AD 850-950. Bottom, left to right: Morris 40 community AD 950-1020 and AD 1020-1150. (Maps based on LiDAR obtained from the BLM and processed in Binghamton's Remote Sensing and Geophysical lab. Features based on surface GPS mapping of architectural and midden features, and preliminary results from geophysical survey).

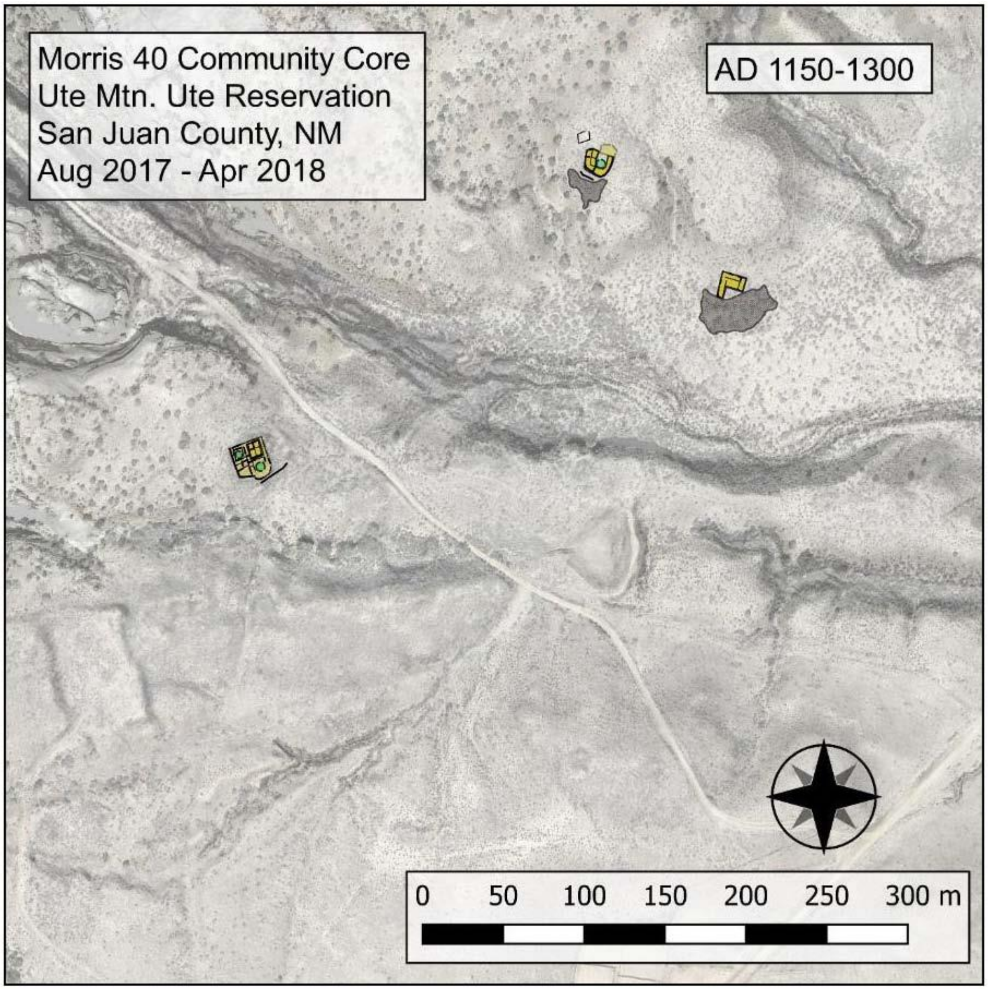


Figure 2e. Morris 40 community AD 1150-1300. (Map based on LiDAR obtained from the BLM and processed in Binghamton's Remote Sensing and Geophysical lab. Features based on surface GPS mapping of architectural and midden features, and preliminary results from geophysical survey).

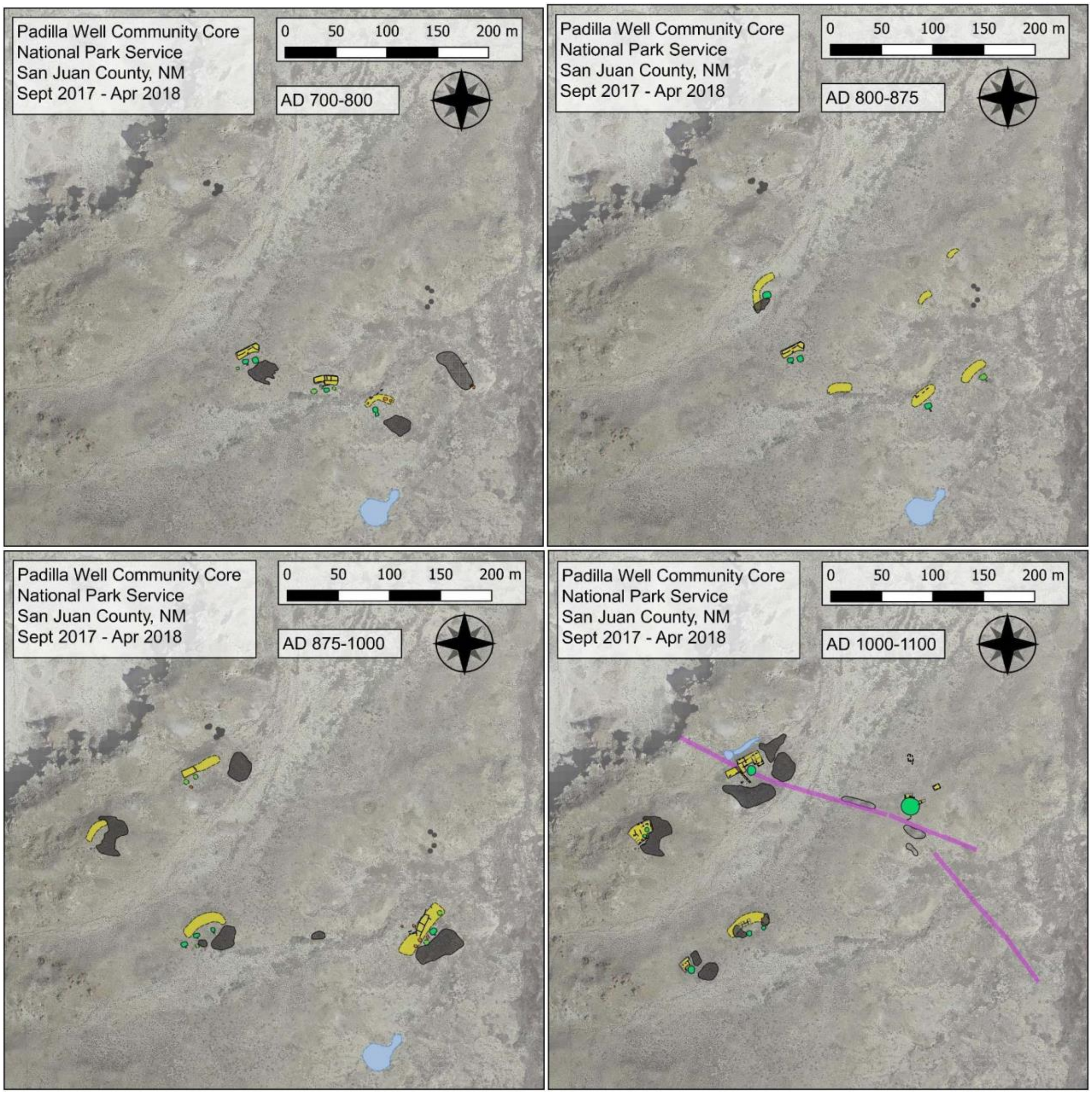


Figure 3a, 3b, 3c, 3d. Top, left to right: Maps showing Padilla Well community core between AD 700-800 and AD 800-875. Bottom, left to right: Padilla Well community core between AD 875-1000 and AD 1000-1100 (Map based on Google Satellite imagery, DEMs obtained from the USGS, surface GPS mapping, and preliminary geophysical results).

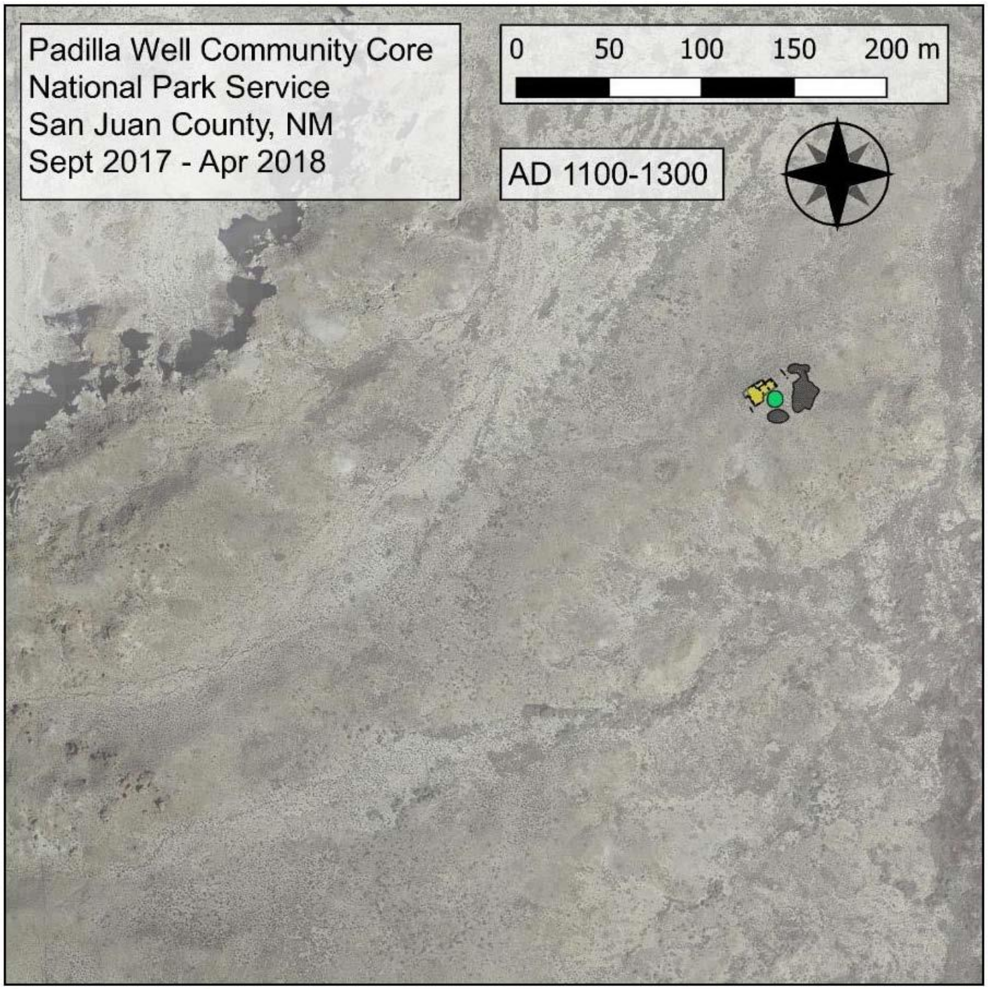


Figure 3e. Map showing Padilla Well community core between AD 1100-1300. (Map based on Google Satellite imagery, DEMs obtained from the USGS, surface GPS mapping, and preliminary geophysical results).

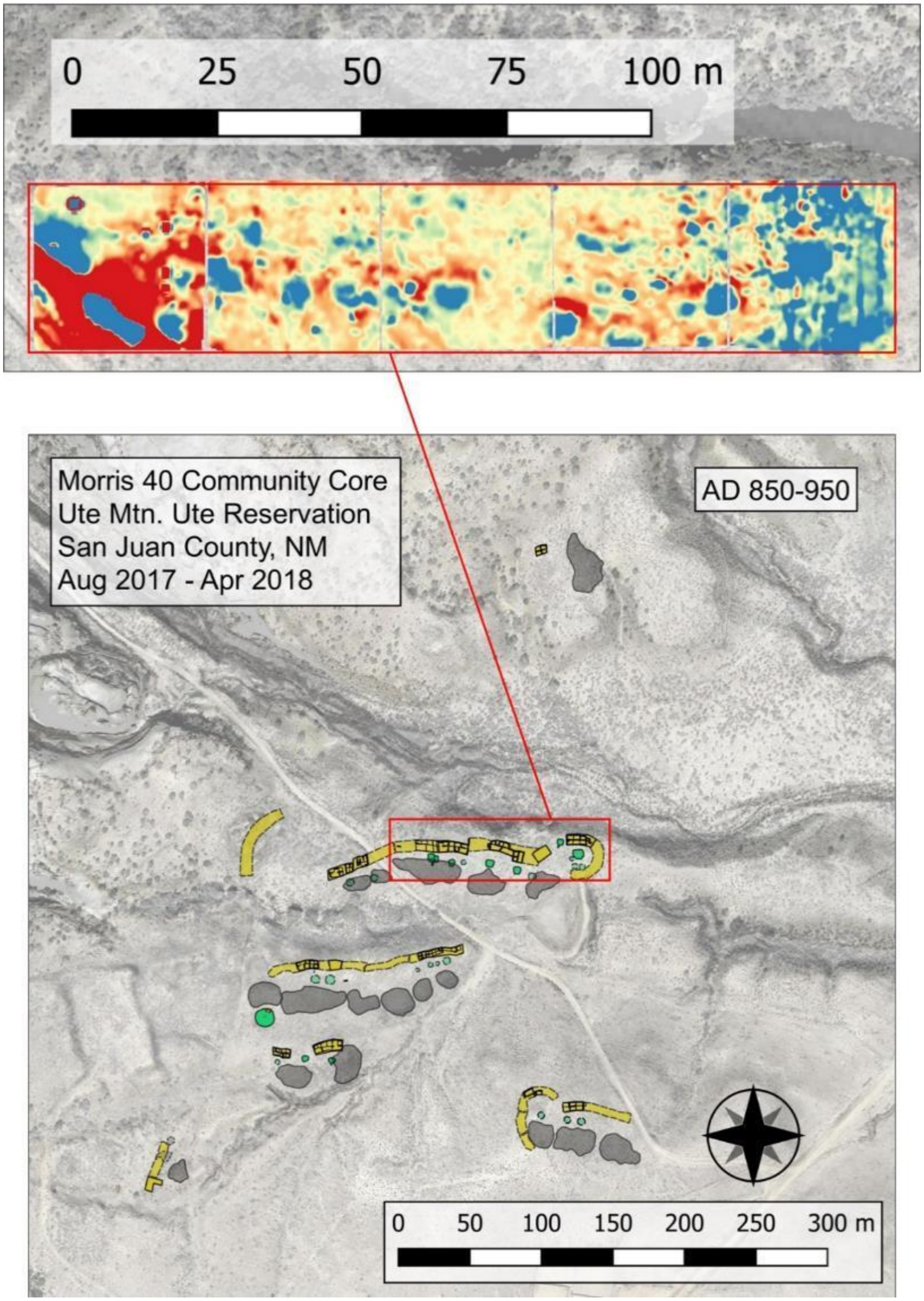
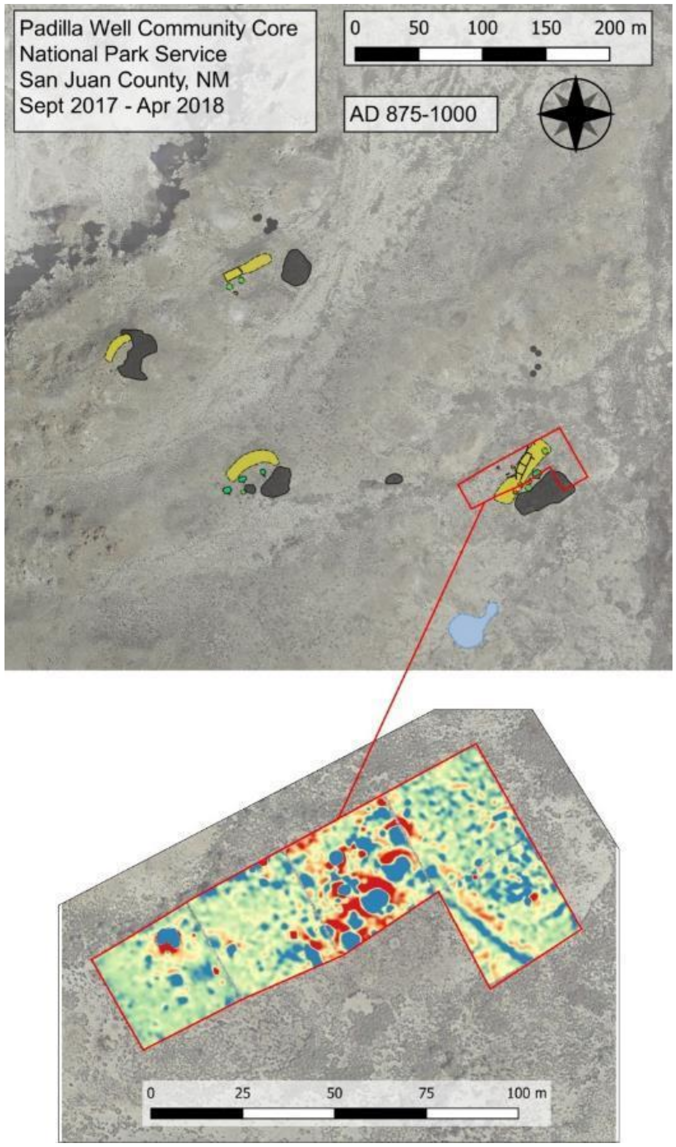


Figure 4. Map showing preliminary results of magnetic gradiometry survey atop the Pueblo I component at Morris 40 (LA. The large red and blue feature at left is a buried pipeline. These grids are interpreted to depict a line of pit houses (blue features between 3 and 7.5 m across). At far right is an arc that might be the remains of the foundation of an arc-shaped roomblock bulldozed to construct a reservoir between 1916 and 1935. The rectangular pitstructure within the roomblock arc is about 7.5 m across.



Feature 5. Map showing preliminary results from magnetic gradiometry survey at Padilla Well atop LA 41881 and LA 41882, a series of early Pueblo I through early Pueblo II habitation structure. Structures in the far left portion of the 30 × 30m grid consist of a pitstructure with an antechamber immediately left/west of a faint rectangular pitstructure with a probable ventilator. (The darkest blue feature is the 1974 datum stake). The features in the middle of the five grids appears to be a large, rectangular structure with several partially enclosed pitstructures. The remains of a later Chacoan road segment are visible as a line extending southeast from this structure.

PUBLICATION ANNOUNCEMENT

New Historic Resource Study for Chaco Culture National Historical Park

Karen K. Swope, Carla R. Van West, Carrie J. Gregory, Phillip O. Leckman, and Adam Byrd

Introduction

Statistical Research, Inc. and the SRI Foundation recently completed a Historic Resource Study (HRS) for Chaco Culture National Historical Park (Park) (Figure 1). The Park, occupied for at least 8,000 years, has attracted much research on its prehistory. Researchers have devoted less attention to the two or three most recent centuries of habitation and land use. The HRS and accompanying geospatial database (Swope *et al.* 2017) identify and analyze these lesser-recognized historical-period cultural resources located within the Park's bounds.

The HRS (Figure 2) is a reference for interpretation, research, and management, and a tool for Park managers in developing and implementing preservation treatment plans, making decisions regarding visitor use, and designing interpretive materials and outreach activities. The investigation included field reconnaissance and an assessment of site conditions, threats, and significance. The report includes discussions of potential cultural landscapes, future research needs, Chetro Ketl land ownership, oral history summaries, and a historical research bibliography.

Navajo Settlements

The earliest Navajo settlement in the Chaco region dates to the eighteenth century. Following the 1864 incarceration at Bosque Redondo, many Eastern Navajo families returned to the Chaco area by the 1870s. In this period, farming, hunting, and gathering supplemented the formerly predominant sheep herding economy. The influx of Spanish-American herders and Anglo-American traders created a market for wool, blankets, and rugs. New jobs in wage work included assistance in archaeological excavations and building construction, and supplanted sheep herding when the stock reduction program was enforced. Navajo homesites and sheep camps were removed during the 1930s and 1940s, and the last Navajo family was forced to leave their homesite within the Monument boundaries in 1948. Archaeological remains of Navajo settlement include hogans (Figure 3), stone buildings, rockshelters, corrals, lamb pens, hornos, and rock art (Figure 4).

Euroamerican Arrivals

Between 1849 and 1877, a series of incursions included Lt. Colonel John Macrae Washington's military reconnaissance, and Wheeler and Hayden's geographic and geological surveys. The Bureau of Ethnology prepared photographs and scaled plan maps of ruins in 1884 and 1887. Informal studies of Chaco's archaeological remains began in 1894, when Scott Morris, Richard Wetherill and the Palmer family made collections. Scientific archaeology followed at Pueblo Bonito with the Hyde Exploring Expedition (1896-1900). Beginning in 1897, Wetherill established a trading post, homestead, and ranch in Chaco Canyon (Figures 5 and 6). Wetherill, early archaeologists, and the National Park Service repurposed several intact prehistoric rooms. Archaeological remains from this period include ruins of Wetherill's constructions, coal mines, a cemetery, some ranch buildings, and graffiti.

National Park Service Facilities

President Theodore Roosevelt created Chaco Canyon National Monument in 1907 through the newly-passed Antiquities Act. It was not until 1929, however, that the National Park Service began developing park infrastructure and took a more active role in resource protection, building residences and support buildings, and erecting fencing. New Deal programs led to projects by the Soil Erosion Service and establishment of CCC camps for workers engaged in water-control work, soil erosion, and repair of vulnerable prehistoric ruins (Figure 7). The Public Works Administration funded boundary fencing, cattle guards, road/trail development, water wells, telephone lines, buildings, and entrance markers. Works Progress Administration funds built the Chaco Field Research Station for archaeological crews. Virtually all of these buildings were removed during the 1950s and 1960s. Those decades also saw the development of new visitor and staff facilities (Figure 8), many of which continue to serve their original purposes.

Analysis

Most historical-period sites at the Park (Figure 9) are in good or fair condition. A number of threats (e.g. vandalism, erosion) could affect site condition and eligibility for the National Register of Historic Places (NRHP). Site relationships included considerations of reoccupation, reuse of materials, colocation, and intentional removal of features. A potential Navajo community cultural landscape exists in the Park that exemplifies domestic activities, animal husbandry, and farming. The Park contains historical-period sites that appear eligible under NRHP Criterion d, and perhaps also Criteria a, b, and/or c. Study results support future Park planning and management decisions regarding historical-period resources and provide a starting point for future cultural landscape studies.

REPORT CITATION

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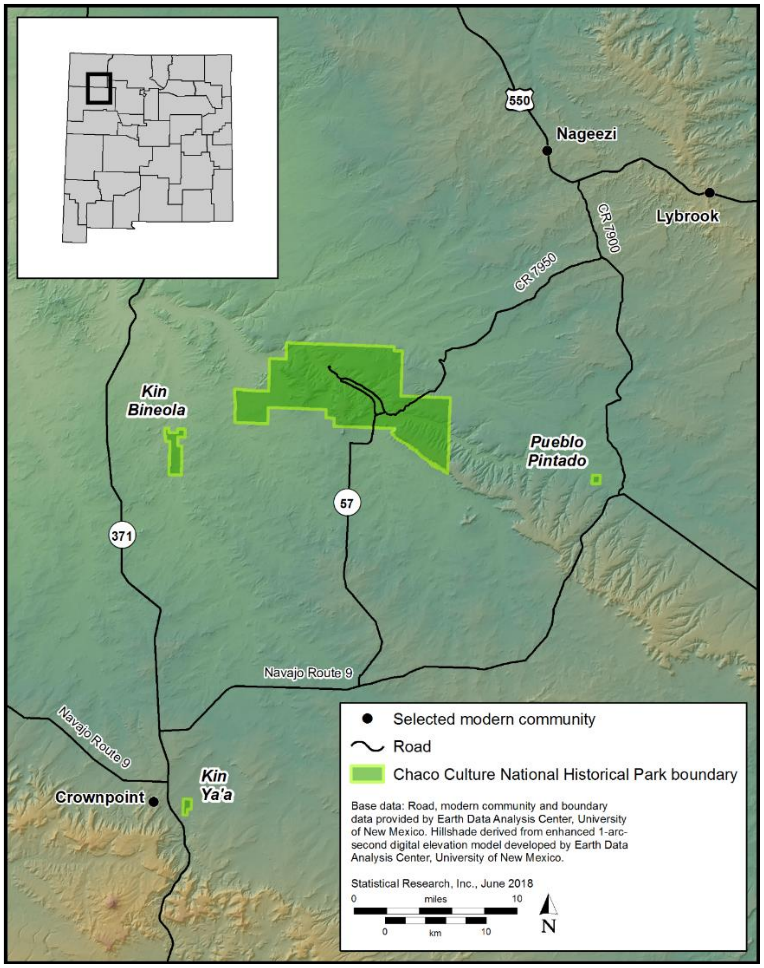

Figure 1. Location and boundary of Chaco Culture National Historical Park, New Mexico.

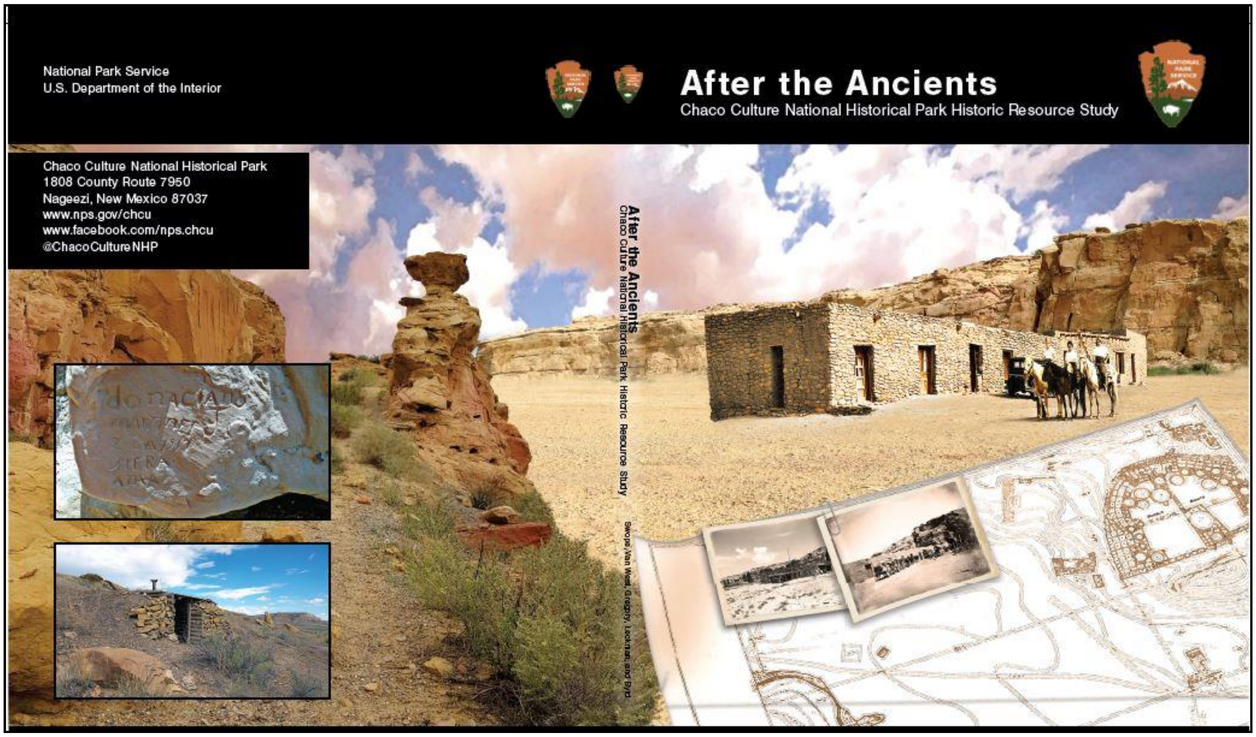

Figure 2. Report cover, Chaco Culture National Historical Park Historic Resource Study. The background imagery used on the front cover is a modern vista of an area west of Pueblo Bonito, representing the approximate location where Wetherill's Long House stood. The superimposed historical photograph was taken circa 1930s. The two smaller historical photographs depict roughly the same view. All three historical photographs are used courtesy of the Chaco Culture National Historical Park (*N77445*, *N77444*, and *N77446*). The plan drawing is "Chaco Canyon National Monument, Topographical Series" (CHCU-310-4940, Sheet 70; Denver Service Center and Chaco Collection Museum). The background imagery used on the back cover is a modern vista showing a portion of the abandoned New Mexico State Road 57 within Chaco Culture National Historical Park. The upper inset photograph is a modern view of a historical Hispanic inscription at 29SJ 530 (SRI photograph). The lower inset photograph is a modern view of the CCC explosives storage bunker at 29SJ 1255 (SRI photograph). Cover design by Andrew Sáiz, SRI.

Figure 3. Navajo hogan at 29SJ 135 (SRI photograph).

Figure 4. Navajo petroglyph at 29SJ 136 (SRI photograph).

Figure 5. Wetherill's Company Boarding House remodeled as Chaco Canyon Trading Post in the early 1930s (Courtesy of Chaco Culture National Historical Park, *N77446*).

Figure 6. Wetherill's Company Boarding House remodeled as Chaco Canyon Trading Post, early 1930s (Courtesy of Chaco Culture National Historical Park, *N77446*).

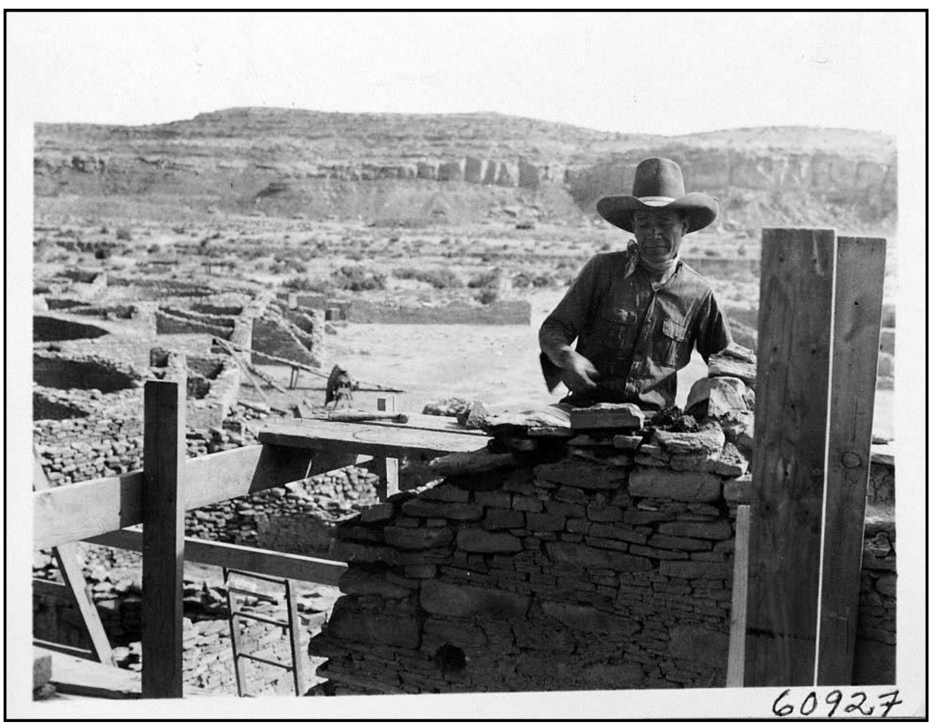

Figure 7. Navajo CCC-Indian Division enrollee Francis Norbeto repairing upper story wall, Pueblo Bonito (Courtesy of Chaco Culture National Historical Park, *N60927*).

Figure 8. Former Park superintendent's house (SRI photograph).

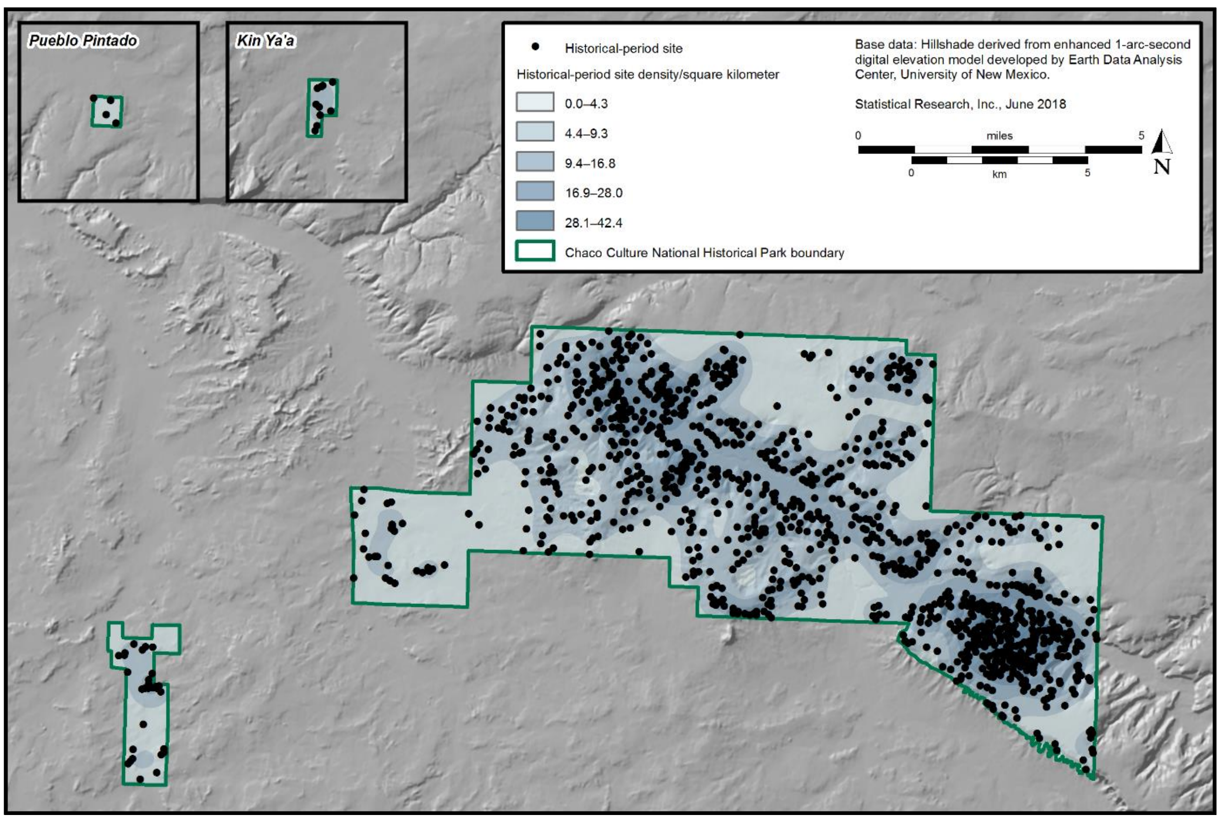

Figure 9. General locations and density of recorded historical-period sites at Chaco Culture National Historical Park (SRI).

Save the Date!

Join us for the NMAC Annual Fall Conference on November 9th and 10th!

This year's conference theme is the Archaic in New Mexico. A great range of topics and geographic areas will be discussed. On Friday November 9th from 7:30 to 9:00 PM, Bradley J. Vierra will give a public talk discussing his recently published book *The Archaic Southwest: Foragers in an Arid Land*. The full conference will be the following day at the Hibben Center at UNM in Albuquerque. Registration begins at 8 AM and the conference will go to 4 PM. Breakfast and light afternoon refreshments will be provided, but you will be on your own for lunch. We have 12 presenters and at least one poster (more poster spaces are available—contact Cherie Walth at cwalth@swca.com to sign up).