

INTRODUCTION

During three field seasons, between 2015 and 2017, the Upper Gila Preservation Archaeology Field School conducted pedestrian survey of the portions of the Burro Creek Cienaga located on the landholdings of the Pitchfork Ranch. The survey targeted the flood plain of the Burro Creek and the first terrace above the flood plain. Four previously recorded sites were relocated, while another 30 sites were recorded for the first time. Sites range from isolated Paleoindian artifacts to 20th century homesteads. The survey results are used here in an analysis of Pithouse and Classic Mimbres settlement patterns to help contextualize this section of the Burro Creek within the broader archaeological pattern of the Mimbres region.

Our primary research question involves the transition from the Pithouse period (A.D.200-1000) to the Classic Mimbres period (A.D.1000-1130), which is marked by both aggregation of populations into large villages and intensification of agricultural production (e.g. Hegmon 2002:325). Our project aims to evaluate if this transition evident along the Burro Creek and if preferences for site location changed alongside this transition.



Figure 1. North facing view of the **Burro Creek** from a mesa-top. From the edge of the large Pithouse riod village PITCH 5.

DATA AND METHODS

The research questions of this project were answered through the creation of a map of the survey area and GIS modeling of the arable land likely available to Pithouse and Classic Mimbres period sites in the area.

Site data was recorded using a Trimble GPS. A map was then created used base images from Google Earth. DEM (Digital Elevation Model) data was retrieved from the USGS GIS data base. Hydrology data was unavailable for this region, and so the Flow Accumulation tool of ArcGIS was used to create an accurate line shapefile of the Burro Creek Cienaga and its tributaries. Contour lines were then created and a slope analysis was conducted. Arable land was then defined as any land on the same contour as the Cienaga and its tributaries and with a slope of less than 10%. The intersect tool was used to create a polygon file of the arable land that falls within one kilometer of a Pithouse or Classic Mimbres period site.

In order to evaluate intensity of land use, sites were all given a size class based on surficial features. These size classes are explained further in the caption to **Figure 2**.

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Figure 2. Map of survey area and available arable land. Site names follow from each field season: BURRO site designations from 2015, **PITCH 1+** designations from 2016, and **PITCH 100+** designations from 2017.

Pithouse period sites were classified as "Small Pithouse" if they consist of only diagnostic artifacts, or "Large Pithouse" if architectural features are present or likely present. Classic Mimbres sites were classified as "Habitation" sites if they consist of only diagnostic artifacts or up to two rooms. A "Hamlet" designation was given to sites with three to 12 rooms, sometimes joined as a roomblock (Schollmeyer 2011:404), while a "Village" was defined as sites with greater than 12 rooms and multiple features (i.e. roomblocks).

Our analysis indicates that two distinct settlement patterns were pursued along this section of the Burro Creek: one pattern in the narrower, northern half of the survey area, and one pattern along the widening flood plain of the southernmost section of the survey area.

We have established that: land on average. two Classic Mimbres sites).

On this basis, we conclude that: **1.** Agricultural intensification in the northern half of the survey area took the form of investment in a series of smaller sites ("Habitation" and "Hamlet" size classes) along the length of Burro Creek. In contrast, aggregated populations could exploit the widening flood plain at the southern end of the survey area. 2. Availability of arable land led to greater depth of sedentism in the southern area, while Mimbres villages in the northern area were not built on top of some large Pithouse sites in unfavorable locations (like **PITCH 5**, located on a mesa top above a narrow section of flood plain).

These conclusions are not surprising given that prior research has identified variable settlement patterns across the Mimbres region in response to local environmental and geographic contexts (e.g. Hegmon et al. 2006), but this analysis helps fit the Burro Creek into the larger scope of research on the Pithouse-Classic Mimbres transition.



Hegmon, Michelle. 2002. Recent Issues in the Archaeology of the Mimbres Region of the North American Southwest. Journal of Archaeological Research 10(4):307-357

, Michelle, Margaret C. Nelson, Karen Gust Schollmeyer, Michelle Elliott and Michael W. Diehl. 2006. Agriculture, Mobility, and Human Impact in the Mimbres Region of the United States Southwest. In *Managing Archaeological Data and Databases: Essays in Honor of Sylvia W. Gaines*, edited by J. L. Hantman and R. Most, pp. 107-121. Archaeological Research Paper No. 57, Arizona State University, Tempe.

Schollmeyer, Karen Gust. 2011. Large Game, Agricultural Land, and Settlement Pattern Change in the Eastern Mimbres Area, Southwest New Mexico. Journal of Anthropological Archaeology 30:402-415.



RESULTS

I. The amount of arable land per site is consistent across the Pithouse-Classic Mimbres transition, for both the southern and northern sections of the survey area (see Figure 3). However, sites in the southern regions along the widening flood plain are proximate to much more arable

2. The number of sites in the northern area increased between the Pithouse period (n=3) and the Classic Mimbres period (n=7), while the number of sites in the southern area decreased (four Pithouse sites and

3. The smallest size classes of Mimbres sites (*"Habitation"* and *"Hamlet"* sites) are exclusive to the northern half of the survey area (see Figure 3).