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2025, pp. 273-276. https://doi.org/10.56577/FFC-75.273

in:

Geology of the Eastern San Juan Basin - Fall Field Conference 2025, Hobbs, Kevin M.; Mathis, Allyson; Van Der Werff, Brittney;, New Mexico Geological Society 75 th Annual Fall Field Conference Guidebook, 227 p. https://doi.org/10.56577/FFC-75

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New Mexico Geological Society Guidebook, 75th Fall Field Conference, 2025, p. 273–275, https://doi.org/10.56577/FFC-75.273

OVERVIEW OF GALLINA ARCHAEOLOGY AND CERAMIC RESOURCE SELECTION

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The areas in northern New Mexico visited by the 2025 New Mexico Geological Society Fall Field Conference were home to what archaeologists call the Gallina culture. This culture is named after the Rio Gallina (seen at Stop 2 of Day 2), which is itself called by the colloquial Spanish for "wild turkey." The Llaves Valley, visited throughout Day 2, is in the heartland of the Gallina culture area, which is bounded by the Chama River to the east and the upper San Juan River drainage on the west. The northern edge generally is seen as at El Vado dam, but some blurring of the line occurs to the far side of Heron Lake and possibly to the Colorado border. The San Pedro Mountains and the upper Rio Puerco bound the core area on the south, while there is overlap with other groups beyond Cuba toward Cabezon (Fig. 1). There appear to be seasonal use sites east of the Chama River into the Canjilon Mountain area.

The Gallina culture chronological sequence remains highly debated (Bremer and Burns, 2013). Initial occupations have been suggested circa 850–950 CE, followed by a move to lower and more restricted elevation ranges around 1000 CE. This move to lower elevation ranges coincides with an increase in effective moisture and high water tables on the Colorado Plateau (Euler et al. 1979). Settlement types diversified between 1000 and 1275 CE. During this period, many sites show two distinct occupations that may be related to climatic changes specific to the Gallina area. These climatic changes include two dry periods between 1080–1125 and 1275–1300 CE. Around 1275 CE, with the onset of the Great Drought (Euler et al. 1979), the Gallina culture area was abandoned until Navajo and Ute seasonal use of the area began several centuries later. In this author's opinion, the Gallina Phase stretches from 1050 to 1300 CE with a rise in social violence during the 13th century.

Gallina sites vary from scatters of pottery and stone-tool debitage to complex architectural clusters. The structure types are pithouses, surface unit houses, towers, storage outbuildings, and ramadas. Pithouses are generally circular with an average diameter of 5.5 m. They were dug about 2 m into the ground and exposed interior walls were commonly plastered with a series of thin slips of adobe mud composed of a fine clay and colorful shale for tint. The surface unit houses tend to be square and consist of a single room. The stone walls are thick with widths up to 1 m. They vary from 6 to 8 m in length and stood up to 3 m high. The internal features of all Gallina habitations have a north-south orientation and include a hearth, deflector, ash pit, ventilator, wing walls, banquettes, storage bins, and niches. Towers tend to be circular and exhibit thick double-wall construction of shaped-stone blocks. They show evidence of defensive use based on burning, the presence of human remains, defensive location, and defensive features such as tunnels. Some towers were converted into storage structures. The storage outbuildings were built of thin stone walls, poles encased in mud, adobe alone, or combinations of all three methods. They have raised floors, no doorways or fire pits, and are generally associated with pithouses. The uses of outbuildings included corn drying, storage, turkey pens, and corn-grinding rooms. Ramadas provided shade for outdoor workspaces. Sites themselves include isolated homesteads, clustered communities, cliff houses, hunting and gathering loci, and agricultural features. Isolated homesteads have either one or two pithouses, surface unit houses, or a combination. Clustered communities consist of several dwellings grouped together topographically or focused on a central feature. Cliff houses occur as habitation and storage structures situated under

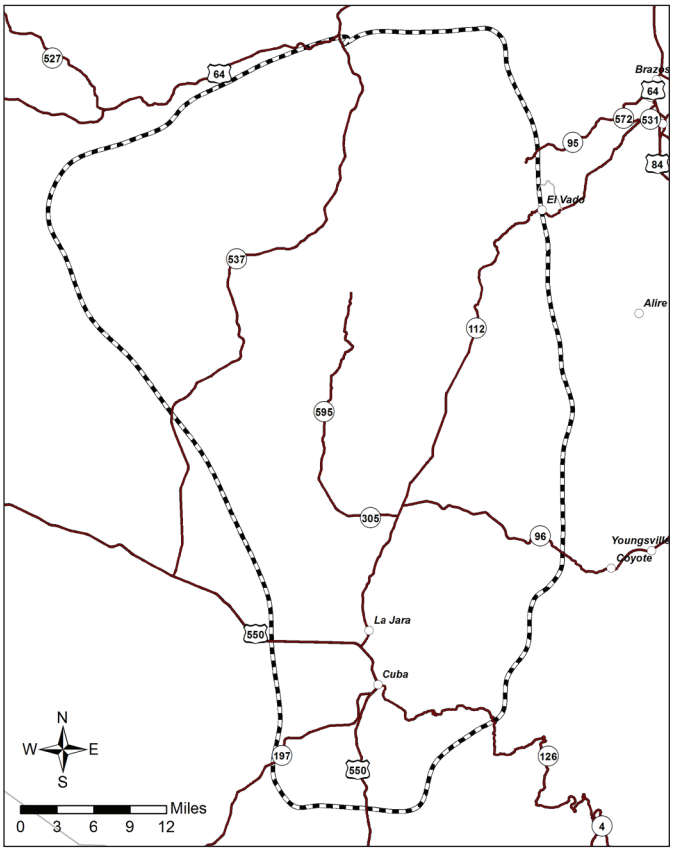

Figure 1. Map of the Gallina culture area with highways and towns.

an overhang in a cliff wall. Hunting and gathering loci are represented by artifact scatters, raw material quarries, and seasonal camps. Agricultural features are composed of terraces, grid gardens, check dams, and small storage structures associated with fields where corn, beans, and squash were grown.

Artifacts help to identify Gallina sites. The ceramics of this culture area consist of Gallina Gray and Gallina Utility (Fig. 2). Gallina Gray includes Gallina Black-on-gray and Gallina Plain Undecorated types. Gallina Black-on-gray has a smooth and regular surface. The forms include large and small ollas, small bowls, and effigy pots. The surface is not slipped (gray color of the base clay rather than an added special white clay) and decoration consists of dull grayish-black carbon-based paint. The Gallina Plain Undecorated type has an even surface with some smoothing. The principal forms are pointed or semi-pointed bottom pots with wide orifices and handles. The Gallina Utility type has a surface that is often fire blackened and crumbly with a rough and gritty, but fairly even, texture. The forms include wide mouthed, squat, flat, or indented bottom jars and bowls.

In the 1200s CE, there was a rise in social violence in the Gallina area and across the Southwest, possibly connected to an increase in aridity and poor crop production. This conflict is evidenced by defensive architecture, such as towers and cliff houses, burned structures containing human remains, and human remains with embedded projectile points and skull trauma. What happened to the Gallina people is unclear. They could have been absorbed into another pueblo group or groups, adapted to the drought by changing to a lifeway based on hunting and gathering, or made a longer-range migration beyond the Southwest (Elliott, 2015). Many archaeologists believe that the surviving Gallina people migrated southeastward into the Jemez region. Others have suggested that some of the Gallina moved eastward along the Chama River. They also may have gone south of Cuba into the Guadalupe Ruin area. A different explanation is that another migrating group massacred all of the Gallina people. This author does not necessarily subscribe to one of these possibilities, but rather sees smaller groups of survivors going in many different directions and taking refuge with adjacent people. Groups of Gallina people may have ended up with the Jemez people (southeast), the Tewa people (east), and the Cibola groups (south).

An example of archaeological research in the Gallina area is this author's study of ceramics and clay selection (Constan, 2011). It focuses on people's lives during the time of increased social violence by looking at resource use for pottery production. Ultimately, the study sought to answer the question: Does conflict influence the distance to which potters will travel to collect ceramic resources? Two sites in the Gallina area, one with a defensive setting and architecture (Nogales Cliff House), and another with an open site plan and no defensive structures (Davis Ranch Site) were used for the study. Ceramics from each of the sites and the clay resources in proximity to the sites were examined to see if conflict affected resource selection.

Clay, temper, and water are required for forming pottery and can normally be collected close to a settlement. Clay is heavy, so distance is the determining factor in clay selection for many potters. Ceramic resources must be of sufficient quality to make pottery. The characteristics and accessibility of clays, tempering materials, and fuel for firing can affect ceramic production. Temper, such as sand, can be added to modify the performance characteristics of a particular clay. In other cases, the potter may choose to sift or screen the temper and clay or age the clay to improve it before use.

Clay and temper samples were collected within 1 km of Nogales Cliff House and the Davis Ranch Site. The clays and temper samples were subjected to petrographic analysis, x-ray diffraction (XRD), and inductively coupled plasma-mass spectrometry (ICP-MS). It appears that the Gallina potters preferred different clays for production of Gallina Black-on-gray and Gallina Plain Undecorated versus Gallina Utility. This is in keeping with historically documented clay selection at San Ildefonso, Acoma, and Laguna Pueblos. At these pueblos,

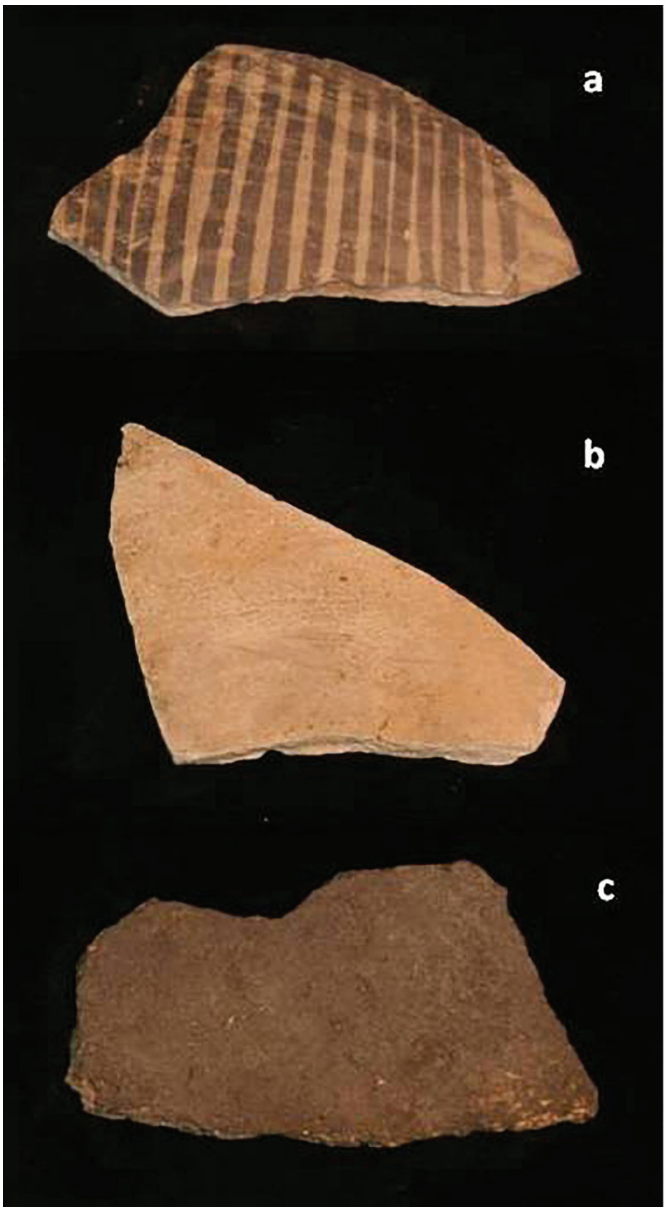

Figure 2. Gallina ceramic types: (a) Gallina Black-on-gray, (b) Gallina Plain Undecorated, (c) Gallina Utility.

potters used three clay sources (white, red, and brown) to produce different ceramic wares.

The study results could not definitely demonstrate use of clays from within 1 km of either site. Even so, the level of consistency between the two sites and the distances from both sites point to use of traditional sources, rather than using clays closer to home, for the defensive site. The potters risked violence to collect clays with specific qualities to produce their vessels. Safety concerns and minimizing effort do not appear to be overriding factors in ceramic resource selection in the Gallina area. This is not terribly surprising, since local unspecialized household production of pottery was not done on a daily basis. At this scale of production, ceramics may have been made only one or two times a year. Undertaking risk once or twice a year may have been acceptable in order to procure clays with known performance characteristics and with a cultural aesthetic value. There is no evidence that conflict influenced ceramic resource procurement in this area.

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The upper pond at Circle A Ranch.