

# The Dairy Site: 2,600 Years of Occupation Along the Santa Cruz River

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Over the last 20 years, Tierra's cultural resources team has conducted testing and data recovery projects on a large, multi-component prehistoric settlement known as the Dairy site (AZ AA:12:285[ASM]). The Dairy site is located in the Town of Marana in the northern Tucson Basin. Occupation of the site spans the interval between the beginning of the Early Agricultural period (ca. 1200 B.C.) and the end of the Hohokam era (ca. A.D. 1450). Gaps in the occupation are evident, some likely during times when the Santa Cruz River changed course and settlement shifted to other parts of the Tucson Basin. Others are possibly the result of a lack of archaeological mitigation during the early 1960s, when a dairy facility was constructed on the property. Archaeological sites,

for the most part, were not protected by laws and regulations until well into the 1960s.

Tierra's most recent excavation was conducted at the last remaining intact portion of the Dairy site, an area known as the North Locus, from late 2017 into the spring of 2018. Work was conducted to assist Red Point Development in complying with Section 404 of the U.S. Army Corps of Engineers (USACE) Clean Water Act prior to a proposed residential development project. Jeff Jones served as field director and was assisted by crew chiefs Chance Copperstone and Jenny DeJongh and a crew of 10 archaeological field technicians. Dr. Barbara Montgomery was the principal investigator and project manager.

Our excavations were conducted in order to collect data that would answer several research questions about the occupation of the settlement:

## 1) Settlement Chronology

When was the settlement occupied? Was it occupied continuously or sporadically over time? Were different areas of the site occupied at different times?

## 2) Community Organization and Settlement Patterns

Can individual households be identified? Was this part of the site central to the settlement, or would it be considered a satellite community? Did people live in these houses year-round or only seasonally?

## 3) Trade and Regional Interaction

Is there evidence of trade among different people living in different parts of the Tucson Basin? In different parts of what is now southern Arizona? In different parts of the Southwest? Were pottery, jewelry, or other items manufactured at the settlement and exported from the village in exchange for imported goods?

## Field Methods and Results

To begin the project, 10 areas totaling approximately 13,456 m<sup>2</sup> were mechanically stripped to expose the outlines and orientations of any buried structures or extramural features that might be present below the surface. Stripping and subsequent excavations revealed 269 features or possible features, including 111 pit structures, 40 rock-filled roasting pits, 9 thermal pits, 28 non-thermal pits, 11 midden areas, 6 borrow pits, 4 extramural surfaces, 2 ash lenses, and 7 human burial features. Thirteen features showed evidence of extensive rodent or erosional damage, and their function could not be determined. An additional 38 possible features were determined to be natural occurrences, usually related to rodents or fluvial activity.

Control units (measuring at least 1 by 2 m) were hand-excavated into all structures and possible structures identified during stripping to identify stratigraphic layering and structure orientation, to expose fire hearths for possible archaeomagnetic dating, and to collect a representative sample of the artifacts and biotic materials from within the houses. The remaining portions of 31 structures were then completely excavated to expose their

### Snaketown Red-on-buff

Interior (left) and exterior (right) surfaces of a sherd from a Snaketown Red-on-buff platter. Snaketown Red-on-buff dates from A.D. 700 to 750 within the Hohokam Pioneer period. This platter is just one example of a diversity of vessel forms manufactured by the Hohokam people.



architectural details and to recover artifacts and other archaeological materials.

Structures were selected for total excavation based on their perceived ability to provide information pertinent to the three research questions as indicated by data from the control unit. Selected structures included those that showed evidence of burning, those with an apparent floor assemblage, and others that appeared to be well preserved. All non-structural features, such as cooking pits, storage pits, and trash piles, were also excavated or sampled. Below is a summary of the reconstructions and interpretations derived from the excavation data.

### Previous Work at the Dairy Site

The Dairy site was first recorded in 1982 during a large regional survey by archaeologists from the Arizona State Museum. In the almost four decades since it was recorded, numerous investigations have been carried out within and adjacent to the originally recorded boundaries of the site. From this research, we can piece together a sequence of occupations at the site.

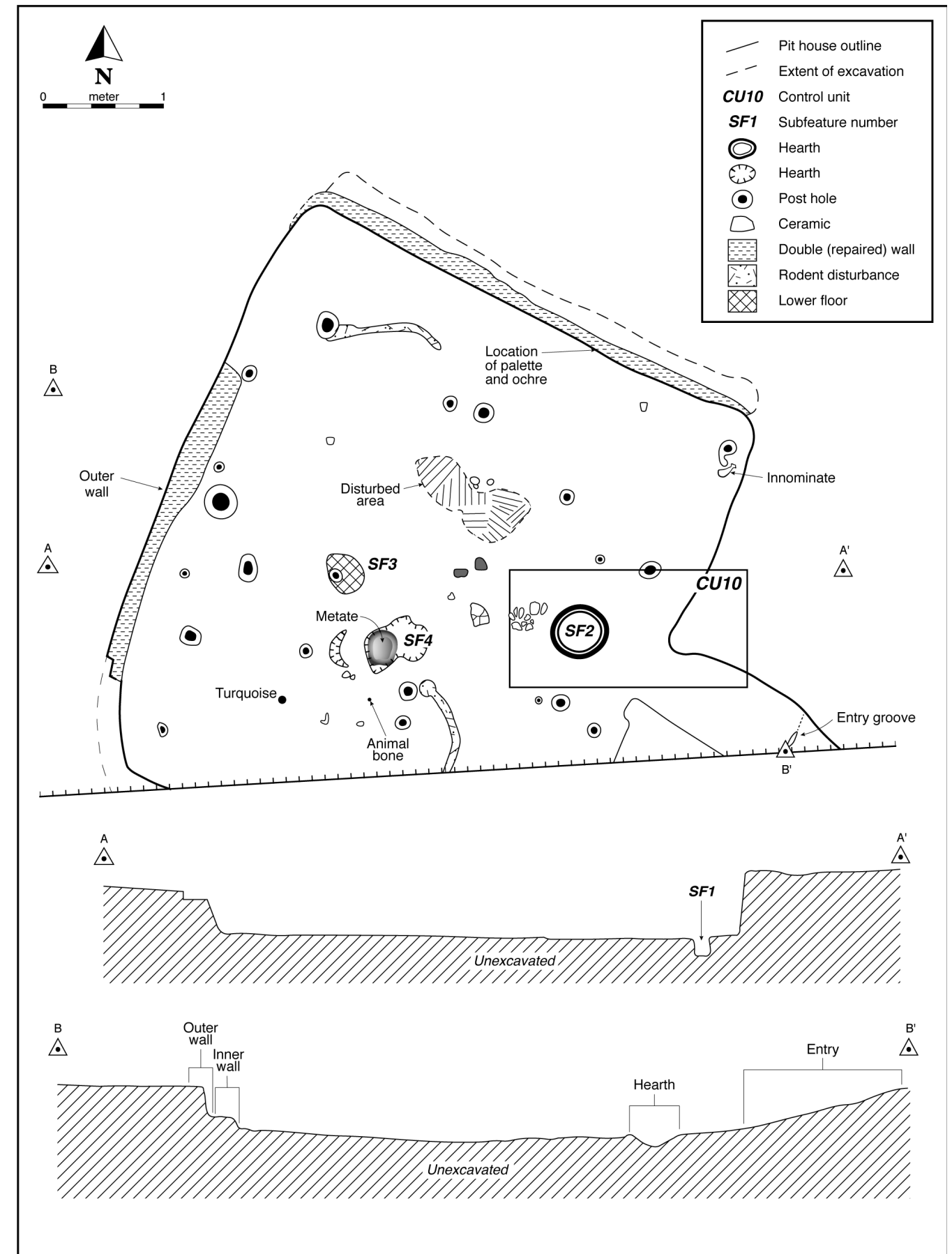
The earliest documented features at the Dairy site have been dated to the San Pedro phase of the Early Agricultural period, between 1200 and 800 B.C. These features include extramural pits, work surface areas, irrigation canals, and ephemeral pole-and-brush structures located on what was then an active floodplain. The canals and apparent field houses, along with small amounts of maize in macrobotanical samples, suggest irrigation agriculture was taking place, but no fields have yet been recognized. Data recovery excavations by Tierra and others in the 1990s and 2000s demonstrated that agricultural use of the floodplain terraces continued, at least sporadically, well into the Hohokam cultural sequence after A.D. 500. Limited evidence suggests occupation of the Dairy site ended around A.D. 1450 with a late Classic period occupation.

### Initial Settlement of the North Locus

Beginning during the Agua Caliente phase (A.D. 50–500) of the Early Ceramic period, a small settlement formed on the toe of the bajada overlooking the floodplain farms. Unfortunately, an unknown but substantial portion of this settlement was removed



The photo to the left and the figure on the right illustrate one of the excavated houses (Feature 165). In the photo, north is to the right, and the entry is visible on the bottom left. The hearth (SF 2), near the entry, is difficult to see. The southernmost extent of the house (left side of photo) couldn't be excavated because it was outside of the boundary of the project area. The figure depicts a rendering of the house showing some of the postholes and artifacts found on the floor.



Feature 165.

during efforts to level corral areas in the 1960s for the dairy operation that gave the site its name. Tierra's recent excavations focused on the remaining portion of the bajada settlement. Radiocarbon sampling suggests two (possibly three) North Locus structures were occupied during the Agua Caliente phase. The Early Ceramic period saw the introduction of fired clay pottery and a shift from in-ground pit to aboveground ceramic vessel storage. Early Ceramic lifeways remained much the same as those of the Early Agricultural people, with subsistence focused on both farmed and gathered resources.

### Hohokam Settlement of the North Locus

Hohokam settlement on the lowland (floodplain) portion of the site included field houses, storage and processing pits, trash disposal areas, and one of the longest non-riverine canal systems ever recorded in Arizona. The North Locus settlement overlooked the lowland agricultural areas, and it is assumed the occupants of the village were socially and economically tied to the lowland agricultural areas.

### Pioneer Phase Occupation

The Hohokam Pioneer phase (A.D. 500–750) in the Tucson Basin saw increases in population that were likely due to the addition of beans and squash to the suite of domesticated crops. Hohokam groups throughout southern and central Arizona formed more rigid and exclusive systems of land and resource tenure, and by the early A.D. 500s, villages with large houses and central plazas began to form. It was during this time of village growth and development that the main occupation of the North Locus took place. The settlement occupation peaked during the Pioneer phase and tapered off after A.D. 700.

Analysis of the pottery suggests residents of the site were performing everyday activities such as spinning fiber, cooking and serving food, storing wet and dry materials, and experimenting with various



*Axes from the North Locus.*

vessel forms that would continue throughout the Hohokam sequence. Flaked stone tools were produced in an expedient manner using local materials and were made, used, and discarded on-site. The ground stone collection suggests the residents were processing food and maintaining food-processing tools, but that much of this activity took place elsewhere, possibly at the previously destroyed portion of the site. Almost no evidence was found to indicate the residents were foraging for food in the distant upper bajada and mountain zones. Other activities included pottery production, leatherworking, basketry and weaving, shell and turquoise jewelry manufacture, and other everyday activities, as might be expected at a major village.

### Colonial Phase Occupation

Occupation of the site appears to shift westward in the North Locus during the Colonial period (A.D. 750–850), with settlement patterns becoming more linear and less suggestive of courtyard groups. Subsistence activities show little change and focus on domestic crops, but an increased reliance on agrestal weeds associated with the fields is apparent in the analysis of food remains.

Useful food plants, such as juniper berries, acorns, and pine nuts, which grow at higher elevations, were not found, suggesting that people didn't travel far afield for plant resources.

Little change in flaked stone technology was noted between the Pioneer and Colonial periods. Tools were predominately unmodified, utilized flakes that were made, used, and discarded on-site. At some point, grinding technology shifted from basin to trough metates—this may reflect the introduction

of improved maize varieties during the Colonial period. Over half the bone awls recovered from the site were from Colonial period contexts, suggesting an increase in activities such as basketmaking, leather- or hideworking, and woodworking.

### Conclusions

Settlement at the Dairy site began during the Early Agricultural period, around 1200 B.C., and continued at least sporadically until around A.D. 1450. The focus of Tierra's recent project was the



### Shell Artifacts

- a–b: Whole shell beads.*
- c: Large disk bead.*
- d: Quadruped made from *Anodonta californiensis* (California floater)*
- e: Quadruped made from *Haliotis cracherodii* (black abalone)*
- f: Frog/toad.*
- g: Lizard.*
- h–i: Geometric pendants.*
- j–k: Plain bracelets.*
- l–p: Bracelets with marginal nicking.*
- q–r: Carved bracelets.*
- s: Perforated shell.*
- t: Bracelet in progress.*
- u: Lizard in progress.*
- v–w: Manufacturing debris.*

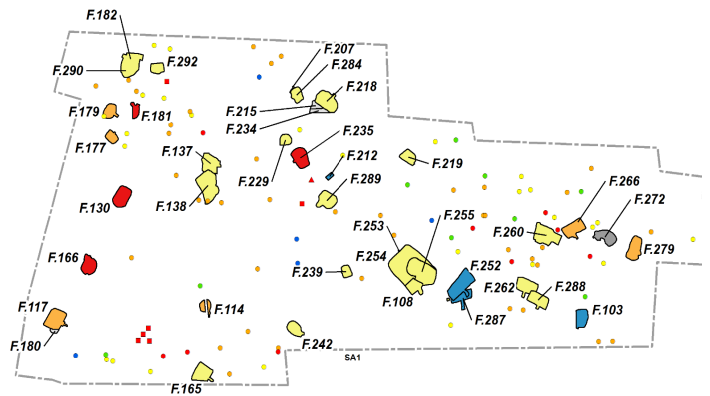
occupation of the North Locus, a Ceramic period occupation that began around A.D. 50 and continued into the Colonial period after A.D. 800. Residents at this locus were performing activities associated with everyday life and were likely the same people using seasonal field houses on the nearby floodplain.

A shift in authority from lineage leaders to political and religious specialists occurred around A.D. 700–750, a time when the North Locus reached its highest population. This was followed by a far-reaching ideological shift around A.D. 800—the introduction of a new religion or cult centered on ritualized ball games between separate communities. By A.D. 850, the North Locus was abandoned, while a village with a ceremonial ballcourt, Ironwood Village, developed less than 3 km to the north. Abandonment of the Dairy site was likely the result of a political or religious decision related to occupation of the ballcourt village.

Due to modern development in the area, Tierra's 2017–2018 data recovery excavations at the Dairy site likely represent the conclusion of over 25 years of research at one of the longest-lived prehistoric settlements in the Tucson Basin.



*Tierra Field Directors Chance Copperstone and Jeffrey Jones excavate a control unit at the Dairy site.*



*Site map depicting features and excavation results.*

