Comparative Distribution of Kayenta Ground Stone in Hohokam and Mogollon Salado Sites

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Introduction

Purpose: To investigate what different artifact types can tell us about the migrations of Kayenta people southward during the 13th and 14th centuries

Method: Review of gray literature including project reports and artifact inventories from sites with identified Salado occupation from the San Pedro and Upper Gila River Valleys.

Implications: Ground stone may be able to answer unique questions abouts the coalescence of Kayenta migrants into the different location populations

Kayenta Migration

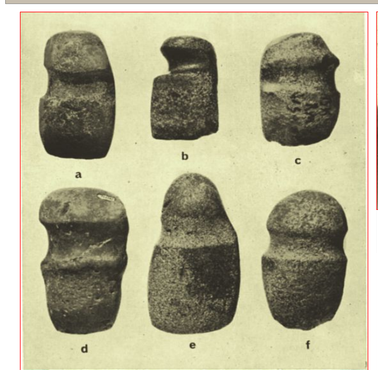
- During the 13th century, Ancestral Puebloans from the Kayenta region began migrating southward into the Hohokam and Mogollon world of southwestern New Mexico and southeastern Arizona
- The Salado Phenomenon describes communities theorized to be coalescent communities of local southerners and these northern newcomers
- The Salado are predominantly defined by their ceramics, the Maverick Mountain and Roosevelt Redware series. These are believed to be local reproduction of Tsegi Orange and Tusayan White Wares by migrants arriving in the south.

Cliff Polychrome Bowl. Photo by Diana Sherman, courtesy of New Mexico Office of Archaeological Studies

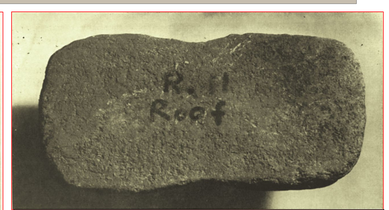
Kayenta Polychrome Bowl. Photo by Amy Montoya, courtesy of the New Mexico Office of Archaeological Studies.

Ceramics are not all the migrants brought with them

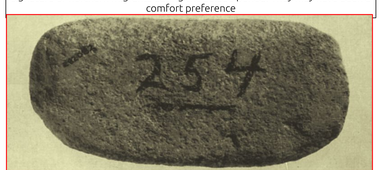
- While locals in the south typically made ¾ groove axes, northerners often made full groove axes
- Similarly, southern locals did not add finger grooves to manos while these migrants did
- Therefore, ground stone assemblages can also indicate the presence of northern migrants at sites
- As ground stone technology may be transmitted differently than ceramics, and so a comparative study may be able to answer questions about the nature of this technological transmission such as:
- Is there a difference in frequency of these ground stone artifacts between the San Pedro/Hohokam region and the Upper Gila/Mogollon region that migrants moved into?



¾ Groove Axes (a-e) and Full Groove Axe (f) (Martin, 1967) Full groove axes are more common in Kayenta/Tusayan associated sites. They were likely hafted very differently



Mano with finger grooves (Martin, 1967) Finger grooves are considered a signature of northern migrants during the Salado period. They may have been a comfort preference



Mano without finger grooves (Martin, 1967). This style is ubiquitous across mano subtypes in Hohokam and Mogollon sites

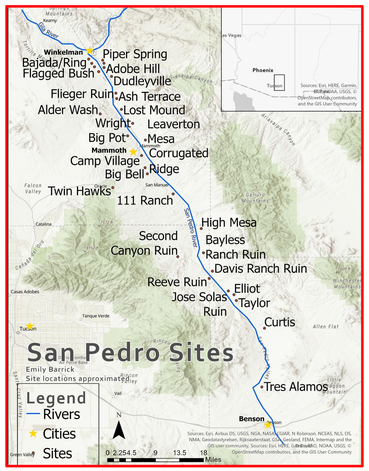
San Pedro River Site Overviews

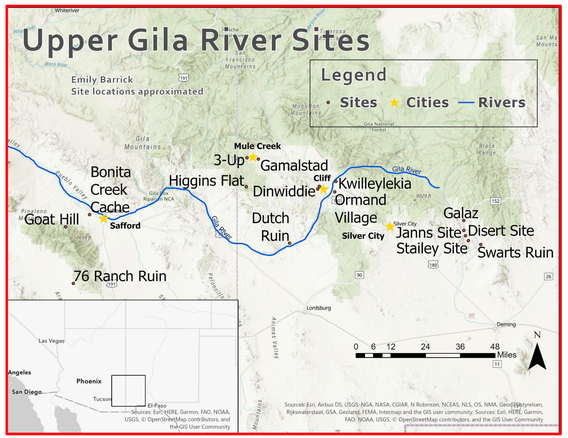
Site name	Mano #	FG Mano	% FG Mano	Axehead #	FG Ax	% FG Ax
Piper Spring	1	0	0%	0	0	0%
Roach Wash	0	0	0%	0	0	0%
Adobe Hill	0	0	0%	0	0	0%
Dudleyville	0	0	0%	0	0	0%
Bajada/Ring	0	0	0%	0	0	0%
Swingle's Sample	1	0	0%	0	0	0%
Flagged Bush	0	0	0%	0	0	0%
Artifact Hill	0	0	0%	0	0	0%
Ash Terrace	6	0	0%	0	0	0%
Lost Mound	4	0	0%	1	0	0%
Buzan	3	0	0%	0	0	0%
Flieger Ruin	1	0	0%	0	0	0%
Big Bell	2	0	0%	0	0	0%
111 Ranch	1	0	0%	1	0	0%
High Mesa	0	0	0%	0	0	0%
Camp Village	0	0	0%	0	0	0%
Corrugated Ridge	0	0	0%	0	0	0%
Twin Hawks	0	0	0%	0	0	0%
Bayless Ranch Ruin	2	0	0%	0	0	0%
Reeve Ruin*	75	34	45%	7	0	0%
Jose Solas Ruin	1	0	0%	0	0	0%
Davis Ranch	49	3	6%	1	0	0%
Elliott	2	0	0%	0	0	0%
Second Canyon*	114	0	0%	16	0	0%
Tres Alamos	14	0	0%	9	2	22%
Curtis	281	37	1.84%	36	2	1%
Totals	562	74	Site Avg 0.018%	72	4	Site Avg 0.007%
Alder Wash Ruin						
Taylor Site						

Upper Gila River Site Overviews

Site name	Mano #	FG Mano	% FG Mano	Axehead #	FG Ax	% FG Ax
Higgins Flat	291	0	0%	6	3	50%
Dinwiddie Site	39	2	5%	5	0	0%
Swarts Ruin	1307	?	?	33	9	27%
Hooper Ranch	6	0	0%	1	0	0%
Mineral Creek	?	?	?	?	?	?
Carter Ranch	141	0	0%	2	1	50%
Ormand	308	0	0%	?	?	-
Gila Valley Farm	117	13	11%	10	1	10%
3 up	5	2	40%	0	0	0%
Gamalstad	4	1	33%	0	0	0%
Totals	2218	17	Site avg 10.6%	57	14	Site Avg 13.70%
76 Ranch Ruin						
Bonita Creek Cache						
Kwilleylekia						
Goat Hill Site						
Disert Site						
Stailey Site						
Janns Site						
Dutch Ruin						
Galaz Ruin						

CDA Testing only (Clark & Lyons, 2012)
Other full report
Report found, no ground stone data
Report to be found
? indicates that report references "some" northern ground stone
* Report associates 3/4 groove axe heads with Salado





Discussion

The difference in frequency of northern style ground stone between these rivers could indicate…

Analysis missing detail.

a. San Pedro finger grooved manos referenced during the literature review were made invisible by undetailed artifact inventories
   i. E.g. Swarts Ruin's report indicated that "some" manos had finger grooves.
b. Many ground stone inventories do not have a column to put notes, only "subtype" which allows for full groove axe heads to be identified but not finger grooved manos.
c. Analysts may not be familiar with finger grooves and leave them out of analysis

Difference in excavation design could lead to large differences in datasets

a. Many San Pedro River sites were lightly tested
b. Fewer Gila River sites were tested but many that were had multi-year excavations
c. Ground stone may be part of the floor assemblage or beneath floors. More modern, less intensive techniques may not focus on these contexts

Differences in migration/assimilation

a. If the data held up:
b. The San Pedro River would have brought migrants into the Hohokam world while the Upper Gila River would be more Mogollon.
   i. Perhaps the Hohokam were less interested in coalescing ideas around ground stone technology
c. Ethnohistoric sources indicate that manos were largely used by women.
   i. Possibly there was a gender disparity in who moved south into the San Pedro River basin

- **San Pedro: 3/26 sites had northern style ground stone**
- **Upper Gila: 7/10 sites had northern style ground stone**
- At first glance it appears to be significantly more northern style ground stone in the Upper Gila River than the San Pedro
  - This would preliminarily suggest a difference between the Mogollon world Salado and Hohokam world Salado
- However the San Pedro sites included are almost all lightly tested so much less material was examined (Clark, 2012)
- Recording of mano finger grooves was problematic: whereas full groove and ¾ groove is readily given as axe subtypes, mano finger grooves have to be recorded separately under comments or stylistic choice. **Reports often didn't mention their presence or absence, casting doubt on the completeness of my data**
- When there *was* in depth recording of finger grooves like at Reeve Ruin, **45% of manos had them**
- Furthermore, as some reports (Mineral Creek, Ormand for example) mentioned the existence of northern style ground stones without giving totals, it casts doubt on most of the published data on this subject

What can be said?

1. Northern style ground stone **cannot explicitly be used to track population movement** as far as current published data stands
2. There is **variability among Salado settlements,** so comparative analysis of Salado enclave groups is useful
3. **Better practices for recording ground stone needs to be implemented** both to ameliorate the curation crisis while still making ground stone data usable for researchers
4. After reanalysis and improved recording is put in place, new research questions need to be asked about these artifacts, e.g. **Is there a true difference in frequencies of these artifacts throughout the Salado world? What does that mean for our understanding of Salado coalescence, or Salado identity at large?**

Next steps

1. Statistical analysis of ground stone proveniences to see if excavation design affects ground stone assemblages already accumulated
2. As lidar technology becomes more advanced and accessible, testing methods of field scanning could fix the issue of collection bias
3. **Reanalysis of artifacts from representative samples of Salado sites in these two basins and possibly more would shed more light onto the issue of differential frequency of northern style ground stone artifacts**

Acknowledgments
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