Examining Intrasite Settlement Patterns in the upper Yadkin River Valley, AD 1200-1600

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Abstract

To date, our understanding of the internal arrangement of Late Precontact (AD 1200-1600) Piedmont Village Tradition (PVT) settlements in the upper Yadkin River Valley has been hampered by poor postmold preservation at many locations. As a result, we know less about dwelling/structure characteristics and the spatial patterning of activities and living spaces within settlements compared to other areas of the Piedmont. Excavations at the Redtail site (31Yd173) over the last two seasons have uncovered over 200 postmolds and nearly a dozen features. This research examines several characteristics of these postmolds and features, their spatial arrangement, and artifact distributions. The results suggest multiple types of structures were built and that there may have been spatially distinct areas for particular activities. Continued research at this site will help us to reconstruct settlements in the Upper Yadkin River Valley and determine what this tells us about a number of cultural characteristics, such as social organization and subsistence activities. In addition, these results will help us to understand broader settlement characteristics across the Piedmont Southeast.

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Introduction

The purpose of this research is to identify the internal spatial arrangement of structures, features, and activities at the Redtail site (31Yd173), a Late Precontact Piedmont Village Tradition (PVT) settlement in the upper Yadkin River Valley (UYRV) (Figure 1). In research at other UYRV sites, this goal has been hampered by preservation conditions. Thus, this particular site, with its good preservation, is critical to our understanding of intrasite spatial patterning in the UYRV and for comparisons to other PVT settlements across the Piedmont. To accomplish our goal, we 1) spatially analyze postmold patterns based on several morphological characteristics; 2) examine the artifact distribution around postmold patterns to determine possible activities performed; and 3) begin characterizing the diversity of artifacts within and between features to estimate settlement duration. Comparisons to other sites in the UYRV help to contextualize our findings.

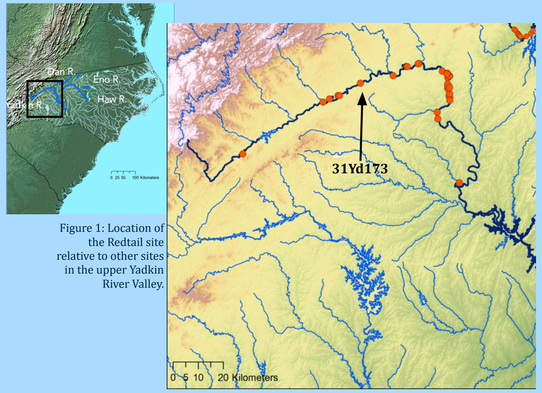


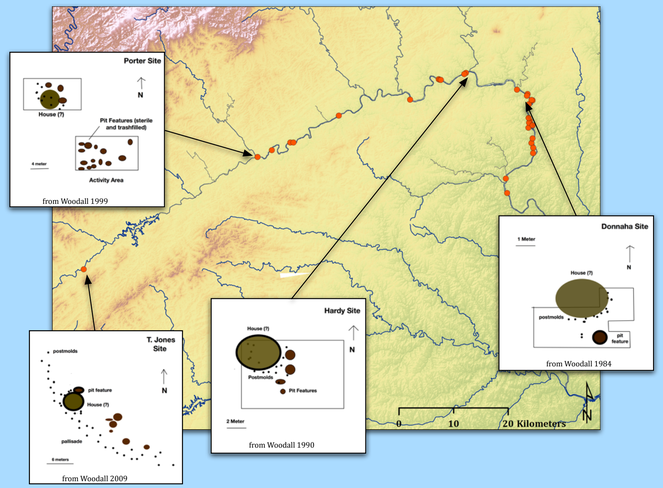
Figure 1: Location of the Redtail site relative to other sites in the upper Yadkin River Valley.

Background

During AD 1200–1600, the UYRV was inhabited by communities living in small semi-sedentary villages. Paleobotonical, zooarchaeological, and settlement ecology research along with historic accounts suggest that people practiced a mixed subsistence strategy of foraging and extensive farming (Jones et al. 2012; Lawson 1967; Mikell 1987; Woodall 1984). Surface artifact scatters suggest settlement sizes varied from .25–8 acres in area, with most on the smaller range (Jones et al. 2012; Woodall 1990). The internal arrangement of structures and their morphological characteristics are still somewhat of a mystery likely due to poor postmold preservation in the floodplain environments. Current evidence suggests that individual domestic structures were associated with activity areas that may have been sites for processing foods, making pottery, and trash disposal (Figure 2).

The Redtail site (31Yd173) is approximately 1-acre in area and contains the remains of a 13th-16th-century settlement (based on ceramic and projectile point chronologies). Originally surveyed in the early 1990s, subsequent surface and subsurface surveying established the site as a likely settlement based on surface artifact densities, the recovery of several hundred pottery shards, and the identification of pit features.

Figure 2: sites in the upper Yadkin River valley



Methods

Excavation
During the 2013 field season, excavations removed the plowzone in 25 1x1m units (Block A), exposing the uppermost intact stratum. This revealed an average of 10 circular stains per unit (Figure 3). Because the stains were small in diameter (averaging 5cm) compared to postmolds found at other UYRV sites (Woodall 1984, 1990, 1999, 2009) and in other river valleys (Dickens et al. 1987), we were reluctant to interpret them as postmolds until they were excavated. Approximately 88% of 40 excavated stains produced shapes consistent with postmold morphology (Figure 4). Our original explanation for the small diameter was that plowing removed the top portions of the postmolds.

Figure 3: Unit 8, top of stratum 2 (level 3) showing circular stains

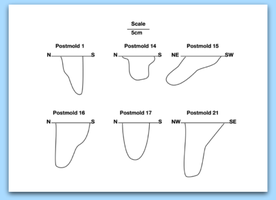


Figure 4: Profiles of typical shapes of excavated circular stains. Because of the wedge and conical shapes, we interpreted them as postmolds.

During the 2014 field season, KPW excavated and measured the remaining stains in Block A. In total, there were 211 stains uncovered. He measured the following characteristics for each stain (Figure 5):

1. Diameter of longest axis
2. Diameter of axis perpendicular to the first
3. Depth
4. Direction of tilt (360 degree compass measurement)
5. Angle of wall 1 from horizontal
6. Angle of wall 2 from horizontal

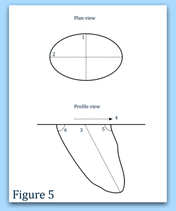


Figure 5

From this work, 200 stains were interpreted as postmolds based on a depth of greater than 3cm and a wedge or regular-sided conical shape. Excavations in Block C identified an additional 89 postmolds through the same methodology. Locations are shown in the total site map in Figure 6 below.

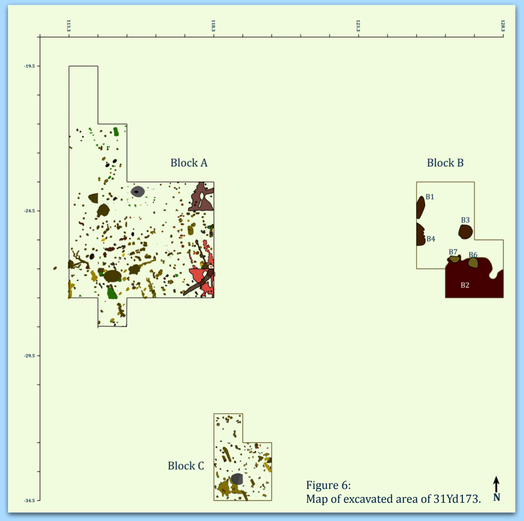


Figure 6:
Map of excavated area of 31Yd173.

Spatial Analysis
We digitized postmold data into iDraw then ArcGIS. To create the GIS map, we georeferenced 12 points using GPS coordinates from shovel test pits relocated during excavation and from unit corners. We then created a single postmold shapefile with an associated data table. Based on observations made in the field, we targeted the following postmold characteristics to identify activities/function:

- Opposite angled postmolds to look for possible bent-pole structures
- Vertical posts (angle between 80 and 100 degrees) for vertical wall posts
- Postmolds greater than 8cm in depth for possible load-bearing posts
- Postmolds greater than 5cm in both diameters for possible load-bearing posts

Artifact Analysis
We collected basic counts and weights of artifact types from the plowzone in Block A to infer possible activities associated with the postmold patterns. Artifact types from all excavated features were examined to characterize the diversity of remains within these two pits.

Results

If there was a bent-pole structure, we expected postmolds with opposite angles to form mirror image arcs. Highlighting opposite angled postmolds did not return any patterns (Figure 7). Similarly, vertical posts did not show any patterns suggesting clusters, lines, or arcs of postmolds (Figure 8). The characteristics with the most recognizable patterns were those with diameters greater than 5cm *and* depth greater than 9cm (Figure 9). Posts with these characteristics cluster in four groups in a rectangular pattern. The corner clusters are approximately 2.5m from the nearest corner cluster. The eastern postmolds could also be interpeted as an arc.

Figure 7: location of opposite angled (SE and NW) posts.

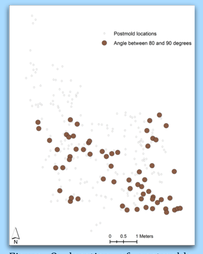


Figure 8: location of postmolds angled between 80 and 100 degrees.

Figure 9: location of postmolds 9cm or greater in depth and 5cm or greater in diameter.

When we compared postmold clusters to artifacts recovered from the plowzone, several patterns emerge, as seen in Figures 10–15.

Figure 10

Figure 11

Figure 12

Figure 13

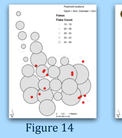


Figure 14

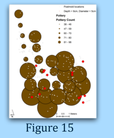


Figure 15

Finally, Table 1 shows the artifacts found in the excavated features in Block B. There is considerable diversity between pits and within individual pits found in Block B.

Feature	Flakes	Projectile Pt.	Pottery	Fired clay	FCR	Deer bone	Turkey bone	Turtle bone	Small mammal bone	Shell	Seeds	Nutshells	Burned bone	Charcoal
A15			x	x					x				x	
A16			x									x		
A20	x		x		x								x	x
B1			x	x							x			x
B2	x		x	x	x	x				x			x	
B3	x		x	x	x	x							x	x
B4			x		x						x			
B5						x							x	x
B6	x	x	x		x	x	x	x		x			x	x
B7	x		x		x			x		x				x

Table 1: Presence or absence of artifacts in excavated pit features.

Discussion and Conclusions

The diversity of artifact types across and within features appears to show they had variable functions. Although more detailed work is needed, this result suggests this site was occupied for longer durations (Gallivan 2002; Kintigh 1989). In Block A, the concentration of bone, projectile points, and pottery with the postmold clusters suggest a possible meat processing station. The concentration of FCR around the arc of posts could be an associated cooking pit or area for smoking. From these patterns, we have developed two current models for settlement layout (Figure 16):

Model 1: The larger postmolds in Block C are a domestic structure. Block A is a meat processing area. Block B was an activity area/midden.
Model 2: Feature B2 is a housefloor. Features B1, B3-7 are associated activity pits. Block A is an activity area associated with this structure. Block C is an activity area, similar to that in Block A, associated with a yet-to-be uncovered structure.

Both arrangements look similar to other sites in the UYRV with more isolated structures with adjacent activity areas. This suggests similar cultural standards for community layout throughout the valley.

These results are very preliminary. The following work will be done in upcoming field seasons:

1. Detailed analyses of the diversity of artifacts between and within pit features to determine the degree of sedentism
2. Excavations of features in Block A to fully characterize the activities that took place there
3. Expand excavations in Block C to explore postmold patterns
4. Expose feature B2 to identify if it is a housefloor or activity area

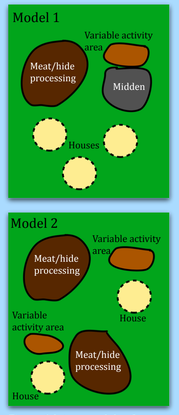


Figure 16: two models of internal settlement patterns at the Redtail site.