

Cotton Among The Hohokam: Comparisons Between The Core and The Northern Periphery

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Introduction

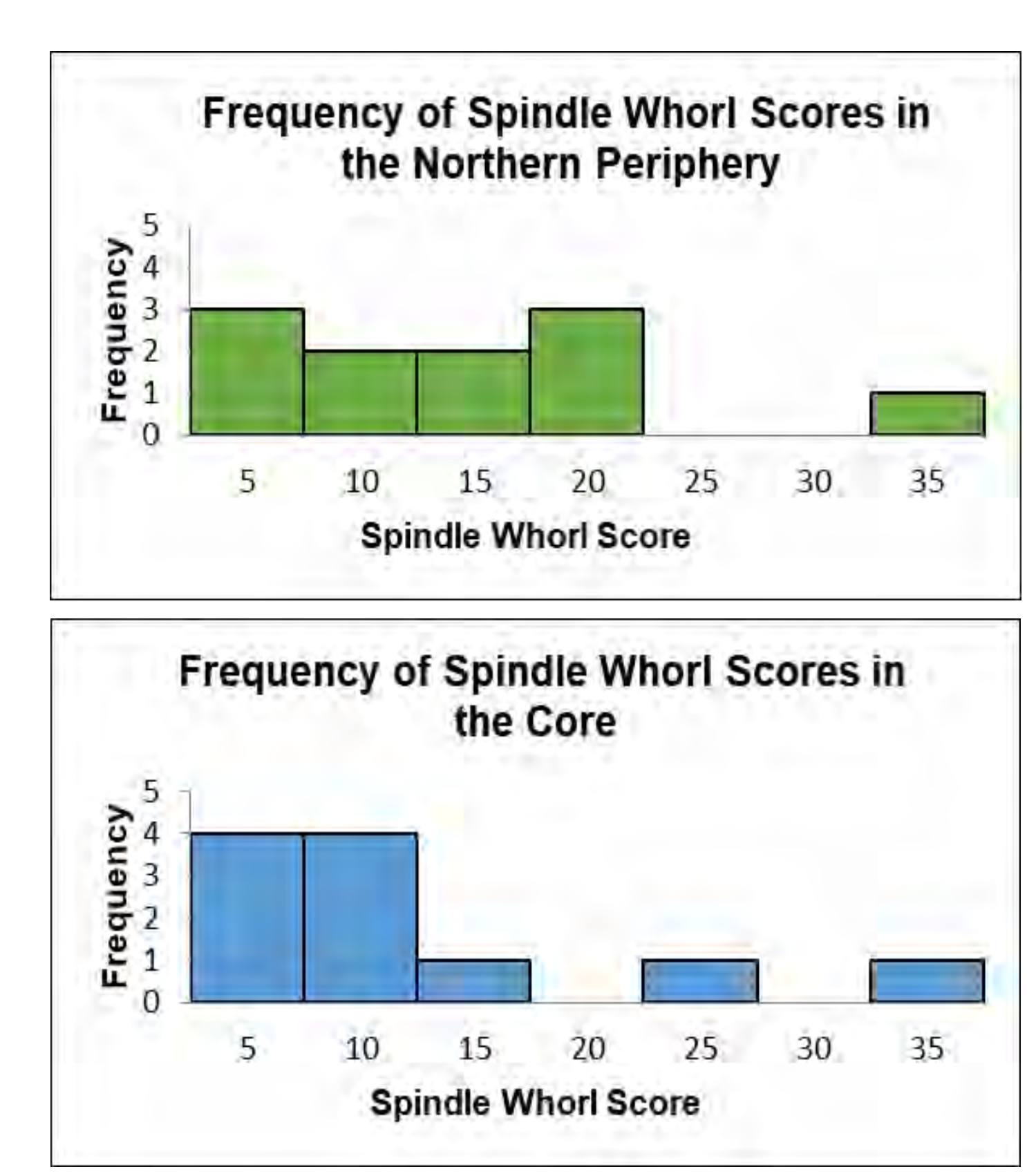
Manufacturing cotton textiles requires the processing of fibers, an activity which can be represented in the archaeological record. The focus of this research design is to use similar indicators of cotton processing to address the relationship between Hohokam populations in the Core area and those neighboring in the Northern Periphery. It is hypothesized that the Core will have more evidence of cotton processing than the Northern Periphery. Various concepts were considered in the research design:

- Cotton textiles were a desirable trade good among prehistoric people living in the Phoenix basin.
- Surplus cotton became a valuable commodity for communities situated on heavily irrigated river valleys.
- Dry farming techniques in the Northern Periphery are less capable of producing significant amounts of cotton.
- Spindle whorls are interpreted as evidence for textile manufacturing.
- Cotton production is inferred through the presence of macrobotanical cotton remains.

Assumptions:

- Cotton requires an adequate water supply to be grown.
- Spindle whorls were used in the processing of cotton fiber.
- Exchange networks connected the two groups.

Discussion



When considering spatial trends, the map of archaeological sites illustrates the spindle whorl scores dispersed between regions. One observation drawn from the figure is the variety of spindle whorl scores in each drainage basin. The inconsistent spatial pattern indicates that the amount of cotton processing in the Northern Periphery is not determined by the distance from the Core area.

Generally in the Preclassic and Classic periods, the processing of cotton appears to increase while the evidence of cultivation slightly decreases. While cotton remains are not substantial in the Northern Periphery, there is a significant outlier in the Classic period. This suggests that the processing of cotton and manufacturing of textiles in the Core and Northern Periphery would have been valued socially and economically during the Preclassic and Classic.

The histograms present the overall distribution of spindle whorl scores for both regions, displaying a comparable pattern with slight variations. A similar spindle whorl score between the Core and Northern Periphery suggests both regions were processing cotton to a comparable degree.

→ There is no appreciable difference in cotton processing evidence to indicate one region was manufacturing more or less textiles than the other.

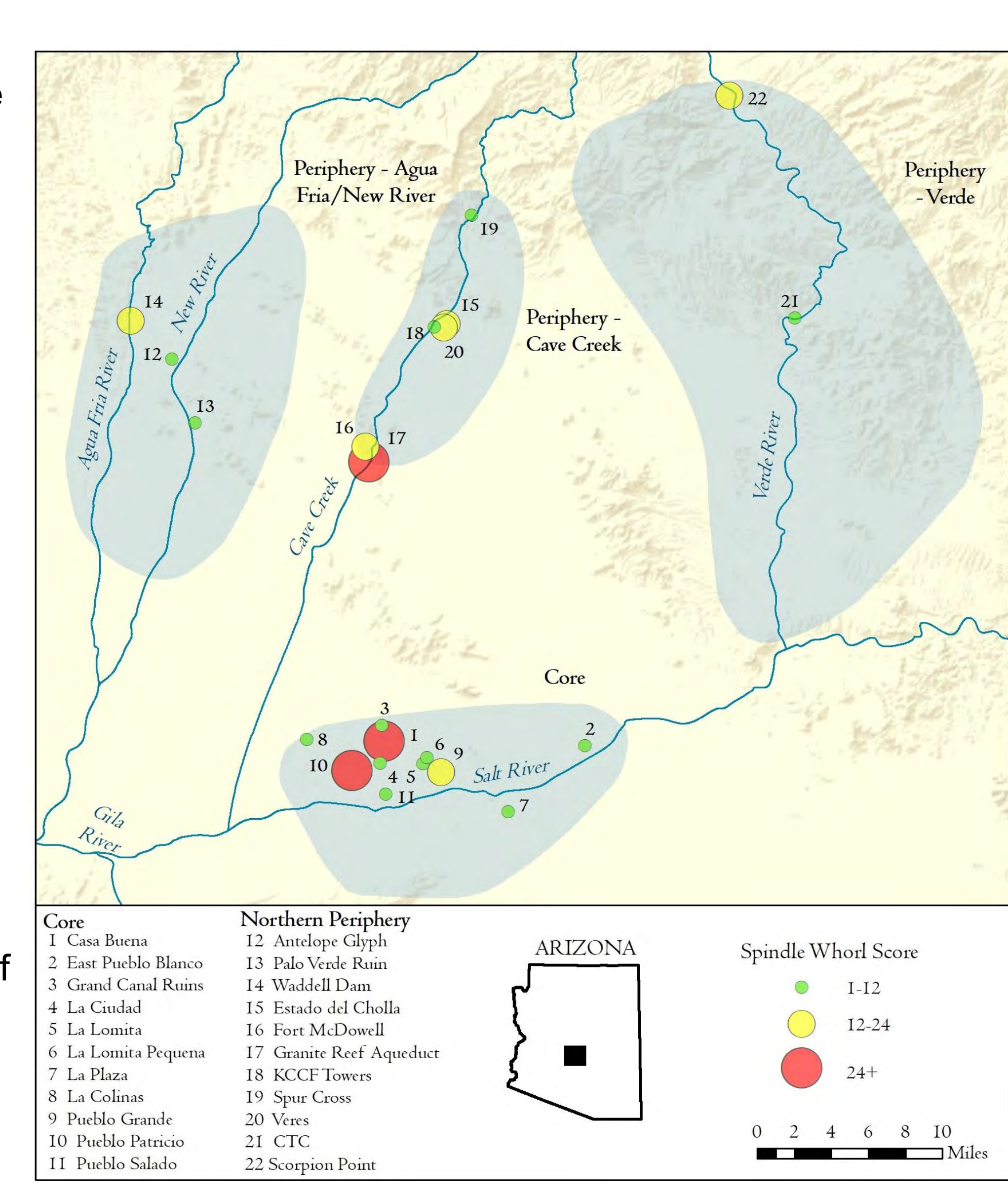
The Northern Periphery could have focused exclusively on subsistence agriculture, but this research proposes that cotton was not simply something to trade for. Cotton had significant value and the people living in the Northern Periphery wanted the resource beyond its acquisition though exchange with the Core.

Data and Methods

The relationship between the lower Salt River valley and the upland areas north of Phoenix is addressed by dividing the area into two groups. The Core is represented by eleven sites on the lower Salt River and the Northern Periphery is comprised of eleven sites in various river drainages.

(11) Salt River
(3) Agua Fria & New River
(6) Cave Creek
(2) Verde River

Macrobotanical data on cotton ubiquity and standardized spindle whorl measurements provide data for identifying changes in cotton processing. Flotation data is used to evaluate the presence value of cotton. A standard measurement of spindle whorls is derived to account for the varying sizes of archaeological sites.



To evaluate the relative quantity of spindle whorls at each site, a standardization is produced by calculating the ratio of 1 spindle whorl to 10,000 sherds (referred to as spindle whorl score).

Five pieces of data were used to control the analysis:

- Location
- Time period
- Spindle whorl count
- Total ceramic count
- Macrobotanical cotton %

Each site is plotted on the map using its corresponding spindle whorl score to examine spatial trends between the two regions. In addition to the geographic element, the data is distinguished temporally to examine changes in Hohokam society from the Preclassic (Pre AD 1150) to the Classic (AD 1150 to 1400).

Future Research

While the availability of fertile soil in the Northern Periphery is lower in comparison to the Core, studies on the prehistoric land productivity could clarify whether sufficient resources were available to non-food crops. This research brings up further questions concerning the relationship between both groups.

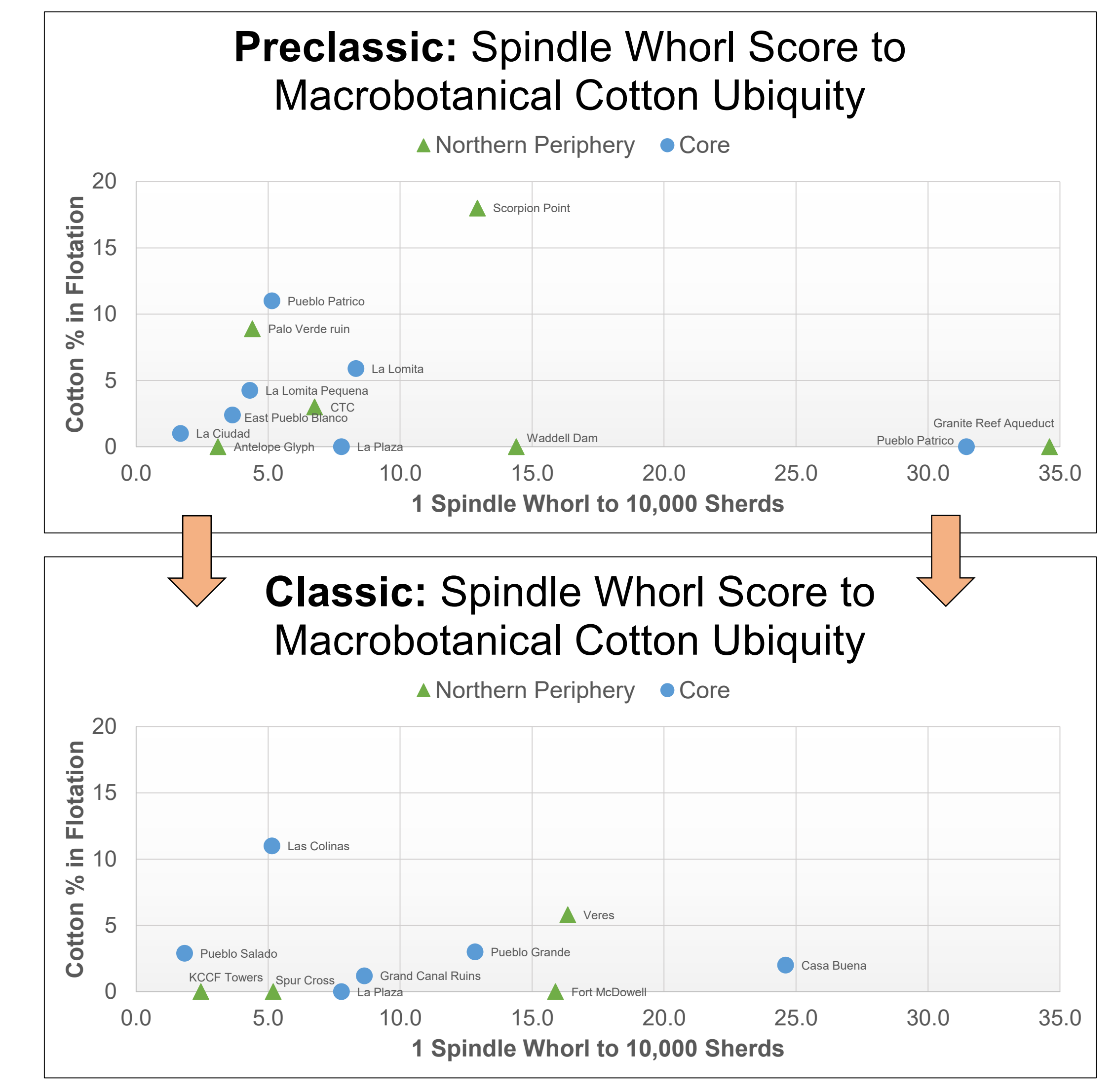
Continuing research:

- What does the location of cotton processing imply for the people responsible for producing textiles?
- Was cotton valued equally by both groups and what amount of labor is needed to produce adequate amounts of cotton?
- How did the exchange of other nonlocal resources change from the Preclassic to Classic?
- Does the Northern Periphery share enough cultural traits to consider them as Hohokam?

Results

Spatial and temporal trends are considered in the comparison of the Core and Northern Periphery. Measurements on spindle whorl score and cotton ubiquity data are plotted to examine trends in Preclassic and Classic periods. The following results are drawn from the data:

- Cotton processing in the Cave Creek area is greatest near the core and decreases with distance.
- The highest amount of cotton processing on the Salt River can be found near the terminus of irrigation canals.
- The scatter plot does not indicate a clear relationship between spindle whorl count and cotton ubiquity.
- The Preclassic period is defined by the small cluster of both groups with similar values.
- The Classic period shifts with more dispersed scores and a decrease in the presence of cotton (Northern Periphery outlier now shown).



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