

# ARCHEOLOGICAL INVESTIGATIONS AT THE ARROWHEAD FARM SITE COMPLEX, KENT COUNTY, MARYLAND

Jay F. Custer, Patricia A. Jehle, H. Henry Ward,  
Scott C. Watson, and Claire Mensack

## ABSTRACT

Archeological survey of the Arrowhead Farm property near Still Pond, Kent County, Maryland, recorded 9 new prehistoric archeological sites and confirmed the location of 5 previously-reported sites. Testing at 18KE287 and 18KE288 revealed the presence of a buried, intact shell midden; however, no diagnostic artifacts were recovered from the site to establish a date. Intensive test excavations at 18KE29 showed the presence of a very large terminal Late Woodland Minguannan Complex base camp. No intact pits or other sub-surface features indicative of a village site were found. The presence of two Indian-made gunflints, a sherd of North Devon gravel-tempered pottery, scraps of brass, and roulette-decorated pipes in the plowzone suggests a possible Contact Period occupation.

## INTRODUCTION

During the spring and summer of 1983, survey and intensive test excavations were undertaken at the Arrowhead Farm site complex near Still Pond, Kent County, Maryland (Figure 1), by the University of Delaware Center for Archeological Research. The research was funded by a National Park Service Survey and Planning grant administered by the Maryland Historical Trust, and was a part of the local research activities of the now defunct Upper Delmarva Regional Preservation Center.

Research at the Arrowhead Farm complex was initially undertaken because the largest site in the complex, 18KE29, has assumed legendary proportions in the oral traditions of Maryland archeology. When the senior author first began to do fieldwork on the Upper Eastern Shore of Maryland, he was directed to the Arrowhead Farm site by several people, who all knew

much about Maryland archeology, because the site had the following attributes (the following comments are close to verbatim quotes from the senior author's research notes and field books):

1. 18KE29 was a "Potomac Creek stockaded village, which showed evidence of a militaristic expansion of Potomac Creek people onto the Eastern Shore";
2. 18KE29 was the site of a historic Tockwogh town visited by Captain John Smith;
3. the site had "beaucoup artifacts".

Needless to say, 18KE29 seemed like an interesting place to work.

Early research at 18KE29 had been undertaken by Steve Wilke and Gail Thompson (1977a; 1977b; 1979), who carried out a controlled surface collection of the site using a 2-meter grid, and indeed they did recover "beaucoup artifacts". Little comprehensive cataloging of the materials was undertaken, although a computer-generated artifact distribution map of the site was produced and published (Wilke and Thompson 1979:Figure 19). The Wilke-Thompson collection from the site was recatalogued in early 1982 as part of a general review of all of their collections from the Upper Delmarva region (Custer and Doms 1982). Wilke and Thompson (1977a: Figure B8) did identify some of the ceramics from the site as Potomac Creek and Moyaone ceramics; however, reanalysis showed that these identifications were in error. All of the ceramics from the site in the Wilke-Thompson collection fell within the Minguannan type, which is a Late Woodland ceramic ware found throughout the northern Delmarva Peninsula and in southeastern Pennsylvania (Custer 1984: 149-154; Griffith and Custer n.d.). Although the body sherds of Minguannan, Moyaone, and Potomac Creek are very similar, and although the rim decorations of

ARROWHEAD FARM SITE

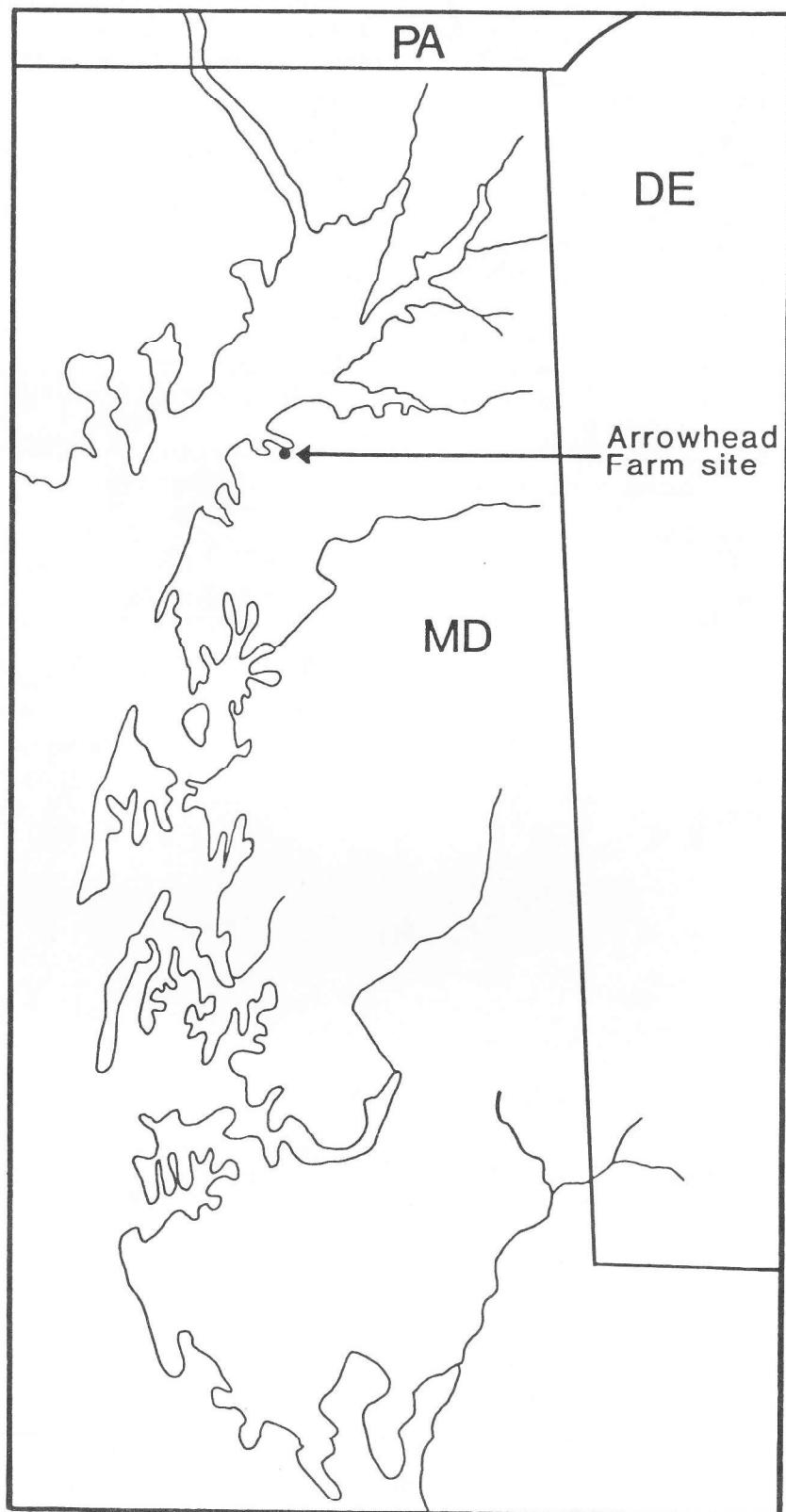


Figure 1. Site Location: Arrowhead Farm, 18KE29

Minguannan and Moyaone ceramics can be confused, there is absolutely no doubt that the ceramics from Arrowhead Farm would fall within the Minguannan type. Thus, there is no basis in fact for the legendary connections of the site with the Potomac Creek complex of the western Chesapeake.

In spite of the fact that the Arrowhead Farm site did not fall within the Potomac Creek complex, it still represented a site which had a great potential for increasing our knowledge of the Late Woodland period in the Upper Delmarva region. The Wilke-Thompson artifact

distribution maps showed a very large site almost a hectare in size and there were literally thousands of artifacts recovered from the site (Table 1). As such, it was the biggest Late Woodland site in the Upper Delmarva region. Current models of regional Late Woodland settlement (Stewart, Hummer, and Custer n.d.; Custer 1984:155-157) suggest that Late Woodland groups living in this area were non-agricultural hunters and gathers who lived in periodically revisited base camps rather than planned, semi-permanent villages. With its large size and abundant artifacts, the Arrowhead Farm site represented a possible contradiction to these models.

**Table 1: Wilke-Thompson Surface Collection - 18KE29  
Summary Catalogue of Lithic Artifacts**

| ARTIFACT TYPE                   | RAW MATERIALS |        |       |     |     |     |      |       |       |
|---------------------------------|---------------|--------|-------|-----|-----|-----|------|-------|-------|
|                                 | QTZ           | QTZITE | CHERT | JAS | RHY | ARG | IRON | OTHER | TOTAL |
| FLAKE                           | 2221          | 38     | 1552  | 52  | 1   | 5   | 119  | 1     | 3989  |
| FLAKE TOOL                      | 12            |        | 21    | 7   |     |     | 2    |       | 42    |
| PEBBLE TOOL                     |               |        | 1     |     |     |     |      |       | 1     |
| EARLY STAGE<br>BIFACE REJECT    | 25            | 1      | 11    | 3   |     |     | 2    |       | 42    |
| LATE STAGE<br>BIFACE REJECT     | 3             |        | 1     | 2   |     |     |      |       | 6     |
| LATE STAGE<br>BIFACE DISCARD    | 1             |        | 2     |     |     |     |      |       | 3     |
| LATE ARCHAIC-<br>MID. WOOD. PT. |               |        | 2     |     |     |     |      |       | 2     |
| LATE WOOD.<br>POINTS            |               |        | 1     | 1   |     |     |      |       | 2     |
| CORES                           | 35            | 2      | 14    | 4   |     |     |      |       | 55    |
| TOTAL                           | 2297          | 41     | 1605  | 69  | 1   | 5   | 123  | 1     | 4142  |

## ARROWHEAD FARM SITE

Therefore, archeological investigations were undertaken to determine the site's role in local and regional settlement patterns.

### ENVIRONMENTAL SETTING

The Arrowhead Farm site complex is located in the High Coastal Plain physiographic province of Maryland's Upper Eastern Shore (Custer 1983). More specifically, the site is located on Kinnaird Point south of Still Pond, an estuarine tributary of the Chesapeake Bay. Wilke and Thompson (1977a:10-15) have published a series of hypothetical paleoenvironmental reconstructions which indicate that the immediate area was characterized by a mixed deciduous gallery forest which would have fringed Still Pond for the past 7-8,000 years. These reconstructions are fairly consistent with local pollen spectra (see Custer 1984:34). As such, the mixed deciduous woodlands and the brackish marshes of Still Pond would have represented an attractive environmental setting for the past 5-7,000 years.

### RESEARCH DESIGN AND METHODS

Archeological field research at the Arrowhead Farm consisted of two components: survey and intensive test excavations. Survey consisted of surface collection of the entire Arrowhead Farm property. Surface exposure ranged from good to excellent at the time of the survey. Only diagnostic artifacts were collected and all clusters of debitage were mapped. At two sites, 18KE287 and 18KE288, limited sub-surface testing, in the form of shovel test pits, was carried out in order to see if intact midden deposits were present.

Intensive test excavations at 18KE29 were designed to see if sub-surface features were present and to try to understand the structure of artifact distributions at the site. The existing surface collection for the site provided an initial guide to the structure of artifact distributions and to site limits. Analysis of the Wilke-Thompson surface

collection (Vidal and Binder 1983) indicated that no distinct activity areas could be discerned; therefore, a stratified sampling design was not used. Rather, an aligned systematic random sampling scheme (Flannery 1976:60) was used. In this design a series of 1-meter squares were excavated at 10-meter intervals across the site. In addition, a series of 1-meter squares were excavated at random locations along each 10-meter transect line across the site. The regularized intervals ensured adequate coverage of all sub-areas of the site and the random placement of some of the units ensured that the sample was not biased.

The sampling fraction was determined such that an accurate estimate of the number of features, or at least an estimate of their presence or absence, could be developed. Optimum sample size can be determined statistically if one can estimate, or project, the frequency of occurrence of the item of interest, the desired degree of certainty, and an expected level of error (see Arkin 1974 for a general discussion and Winter 1976 for an archeological example). In our case, the event of interest was the occurrence of archeological features, and their frequency of occurrence could be estimated, to a certain degree, by comparing the expected results from Arrowhead Farm with other Late Woodland sites. However, this comparison requires a more detailed discussion of the specific questions to be addressed by the field research.

Existing models of Late Woodland settlement for the northern Delmarva region (Custer 1984:54-57; Stewart, Hummer, and Custer n.d.) suggest that planned village communities were not present. Rather, base camps and/or small "hamlets" are the main site types. A large site like 18KE29 may have been produced by multiple small, ephemeral occupations, or it may have been produced by a single semi-permanent occupation. If a large semi-permanent village was present, features such as storage pits, refuse pits, sheet middens, and/or postmolds should be present, based on comparisons to

other Late Woodland sites (see discussions in Custer n.d.a). Other excavated Late Woodland sites of the Middle Atlantic region provide a series of examples of feature distributions of varied intensity. Table 2 shows a sample of Late Woodland sites with a categorization of their community organization and an estimate of the percentage of the total site area which contained either house or pit features. As can be seen, village sites have features over 10% to 38% of their surface area while smaller hamlet/base camp sites tend to have features over 6% to 8% of their surface area. If this range of percentages is used as a range of estimates for the frequency of occurrence of features at Arrowhead Farm, and if a 90% confidence level and 4-5% precision level are assumed to be adequate, a sample of 110 elements, or sample units, will be adequate to estimate the number of features at the site (Arkin 1974). A total of 119 1-meter squares were dug at 18KE29 and these units represented a 2% sample of the site's surface area. The plow zones of all squares were screened through 1/4"

mesh and the subsoil surface was carefully examined for features.

## RESULTS AND INTERPRETATIONS

### Surface Survey

Surface survey confirmed the location of 5 previously recorded sites and resulted in the discovery of 9 new sites. Table 3 summarizes the attributes of each site. Most of the sites are small surface lithic scatters which do not contain datable diagnostic artifacts. All of the lithic scatters consisted of fewer than 30 flakes (usually quartz), and early and late stage biface reduction fragments. These sites are similar to other small sites recorded in the Delmarva area (Kavanagh 1979; Custer and Galasso 1983; Wise 1983; Custer and Wallace 1982) and they are thought to represent ephemerally used tool manufacturing, tool maintenance, and procurement sites. Although the incidence of diagnostic artifacts is low, it is most likely that these sites date to the Late Archaic - Late Woodland time period (Custer 1983).

Table 2: Comparative Late Woodland Feature Densities

| SITE             | CULTURE        | COMMUNITY PATTERN | FEATURE % | REFERENCE                |
|------------------|----------------|-------------------|-----------|--------------------------|
| Strickler        | Susquehannock  | village           | 17        | Kent 1984                |
| Murry            | Shenks Ferry   | village           | 10        | Kensey and Graybill 1971 |
| Schultz          | Susquehannock  | village           | 38        | Casselberry 1971         |
| Faucett          | Upper Delaware | base camp         | 2         | Kinsey 1975              |
| Peters-Albrecht  | Upper Delaware | base camp         | 5         | ibid.                    |
| Camp Ministerium | Upper Delaware | base camp         | 8         | ibid.                    |
| Lee's Terrace    | Upper Delaware | base camp         | 6         | ibid.                    |
| Kutay            | Upper Delaware | base camp         | 5         | ibid.                    |

ARROWHEAD FARM SITE

**Table 3: Surface Survey Sites - Arrowhead Farm Complex**

| Site Number | Site Type      | Topographic Setting                 | Time Period              |
|-------------|----------------|-------------------------------------|--------------------------|
| 18KE29*     | base camp      | saddle                              | Late Woodland            |
| 18KE59*     | lithic scatter | headland                            | --                       |
| 18KE60*     | lithic scatter | knoll                               | --                       |
| 18KE61*     | lithic scatter | ephemeral stream<br>floodplain      | Early/Middle<br>Woodland |
| 18KE62*     | lithic scatter | upland slope                        | --                       |
| 18KE282     | lithic scatter | upland slope at<br>ephemeral stream | --                       |
| 18KE283     | lithic scatter | upland slope                        | --                       |
| 18KE284     | lithic scatter | upland slope                        | --                       |
| 18KE285     | lithic scatter | upland slope at<br>ephemeral stream | --                       |
| 18KE286     | lithic scatter | upland slope                        | --                       |
| 18KE287     | shell midden   | headland                            | --                       |
| 18KE288     | shell midden   | headland                            | --                       |
| 18KE289     | lithic scatter | upland slope                        | --                       |
| 18KE290     | lithic scatter | headland                            | --                       |

\* - previously recorded sites

Two sites, 18KE287 and 18KE288, had large surface exposures of oyster shells and were subjected to limited subsurface testing using shovel test pits. In both instances, flakes and fire-cracked rocks were found on the surface indicating that the shell was a prehistoric trash midden. Shovel test pits indicated that intact midden deposits were present below the plowzone. A small sample of oyster shells was recovered from the shovel test pits and analyzed for their season of death and for environmental considerations. The shells were all small, less than 6 cm in height, and had been collected from shallow, low-salinity tidal flats where they were exposed to sunlight for portions of the day. All shells were collected between late fall and early spring (Kent, in press).

Intensive Test Excavations (18KE29)

Table 4 shows a summary catalogue of the lithic artifacts recovered from the 119 plowzone test units at 18KE29 and Table 5 summarizes the total ceramic data. Table 6 shows the combined surface collection and excavation data. The data in Table 4-6 show that the bulk of the arti-

facts are derived from a Late Woodland occupation of the site. The presence of a few stemmed points and early ceramics (Marcey Creek, Dames Quarter, Wolfe Neck) indicate the presence of a small Late Archaic-Middle Woodland occupation.

The presence of a variety of tool types, biface reduction debitage, rejected and discarded bifaces from different production stages, and abundant ceramics would seem to indicate the presence of a habitation, or base camp, site. However, the extensive test excavations revealed only two sub-surface features. One was a shallow, eroded pit feature which contained only a few flakes. The second was a larger area of burned organic soil which was badly disturbed by a rodent burrow. The density of the features is, therefore, quite low and does not suggest the presence of a village.

The total artifact data noted in Tables 5 and 6 were used to generate contour maps of different densities of artifacts of various classes. Figure 2 shows the distribution of flakes, Figure 3 shows the distribution of flakes with cortex, and Figure 4 shows the distribu-

**Table 4: Excavated Squares - 18KE29  
Summary Catalogue of Lithic Artifacts**

| ARTIFACT TYPE                   | RAW MATERIALS |        |       |     |     |     |      |       | TOTAL |
|---------------------------------|---------------|--------|-------|-----|-----|-----|------|-------|-------|
|                                 | QTZ           | QTZITE | CHERT | JAS | RHY | ARG | IRON | OTHER |       |
| FLAKE                           | 1490          | 57     | 1192  | 531 | 8   | 8   | 70   | 13    | 3369  |
| FLAKE TOOL                      | 5             |        | 9     | 1   |     |     |      |       | 15    |
| PEBBLE TOOL                     | 3             |        |       | 2   |     |     |      |       | 5     |
| EARLY STAGE<br>BIFACE REJECT    | 5             |        | 8     | 4   |     |     | 3    |       | 20    |
| LATE STAGE<br>BIFACE REJECT     | 6             | 1      | 8     | 3   |     |     | 1    |       | 19    |
| LATE STAGE<br>BIFACE DISCARD    | 2             | 1      | 6     | 2   |     |     |      |       | 11    |
| LATE ARCHAIC-<br>MID. WOOD. PT. | 4             |        | 1     | 1   | 2   |     | 1    |       | 9     |
| LATE WOODLAND<br>POINTS         | 2             |        | 14    | 7   |     |     |      |       | 23    |
| CORES                           | 5             | 1      | 5     | 3   |     |     |      |       | 14    |
| TOTAL                           | 1522          | 60     | 1243  | 554 | 10  | 8   | 75   | 13    | 3485  |

**Table 5: 18KE29 Ceramic Summary Catalogue**

| Type          | Surface Collection | Excavation |
|---------------|--------------------|------------|
| Minguannan    |                    |            |
| body          | 3430               | 1354       |
| rim           | 301                | 210        |
| Marcey Creek  | ---                | 1          |
| Dames Quarter | ---                | 1          |
| Wolfe Neck    | ---                | 1          |

## ARROWHEAD FARM SITE

Table 6: Total Data - 18KE29  
Summary Catalogue of Lithic Artifacts

| ARTIFACT TYPE               | RAW MATERIALS |        |       |     |     |     |      |       |      | TOTAL |
|-----------------------------|---------------|--------|-------|-----|-----|-----|------|-------|------|-------|
|                             | QTZ           | QTZITE | CHERT | JAS | RHY | ARG | IRON | OTHER |      |       |
| FLAKE                       | 3711          | 95     | 2744  | 583 | 9   | 13  | 189  | 14    | 7358 |       |
| FLAKE TOOL                  | 7             |        | 30    | 8   |     |     | 2    |       | 57   |       |
| PEBBLE TOOL                 | 3             |        | 1     | 2   |     |     |      |       | 6    |       |
| EARLY STAGE BIFACE REJECT   | 30            | 1      | 19    | 7   |     |     | 5    |       | 62   |       |
| LATE STAGE BIFACE REJECT    | 9             | 1      | 9     | 5   |     |     | 1    |       | 25   |       |
| LATE STAGE BIFACE DISCARD   | 3             | 1      | 8     | 2   |     |     |      |       | 14   |       |
| LATE ARCHAIC-MID. WOOD. PT. | 4             |        | 3     | 1   | 2   |     | 1    |       | 11   |       |
| LATE WOOD. POINTS           | 2             |        | 15    | 8   |     |     |      |       | 25   |       |
| CORES                       | 5             | 3      | 19    | 7   |     |     |      |       | 69   |       |
| TOTAL                       | 3815          | 101    | 2848  | 623 | 11  | 13  | 198  | 14    | 7627 |       |

tion of ceramics. These classes of artifacts were mapped because they can be correlated with varied activity areas. For example, flakes and cortex flakes, which comprise approximately 60% of the debitage, can be associated with tool production areas while ceramics are more likely to be associated with habitation areas. Examination of Figures 2-4 shows that there are no clearly defined activity areas. The absence of clearly defined patterns in the surface distribution data would indicate that the site probably represents a series of overlapping small occupations rather than a single village.

The more than 500 Minguannan rim sherd s from the site were examined to

determine the timing of the multiple occupations of the site within the Late Woodland period. Table 7 lists the various design types found at the site and a wide variety are present. Applying the projected design seriation for Minguannan ceramics and other related ceramic types (Griffith and Custer n.d.), it can be noted that occupation of the site took place throughout the Late Woodland period. However, the bulk of the ceramics probably date to the later portions of the Late Woodland period, probably post-dating A.D. 1350. It is interesting to note that one Shanks Ferry Lancaster/Funk Incised (Heisey 1971) rim sherd was found from the site. The Shanks Ferry complex represents the indigenous Late Woodland culture of

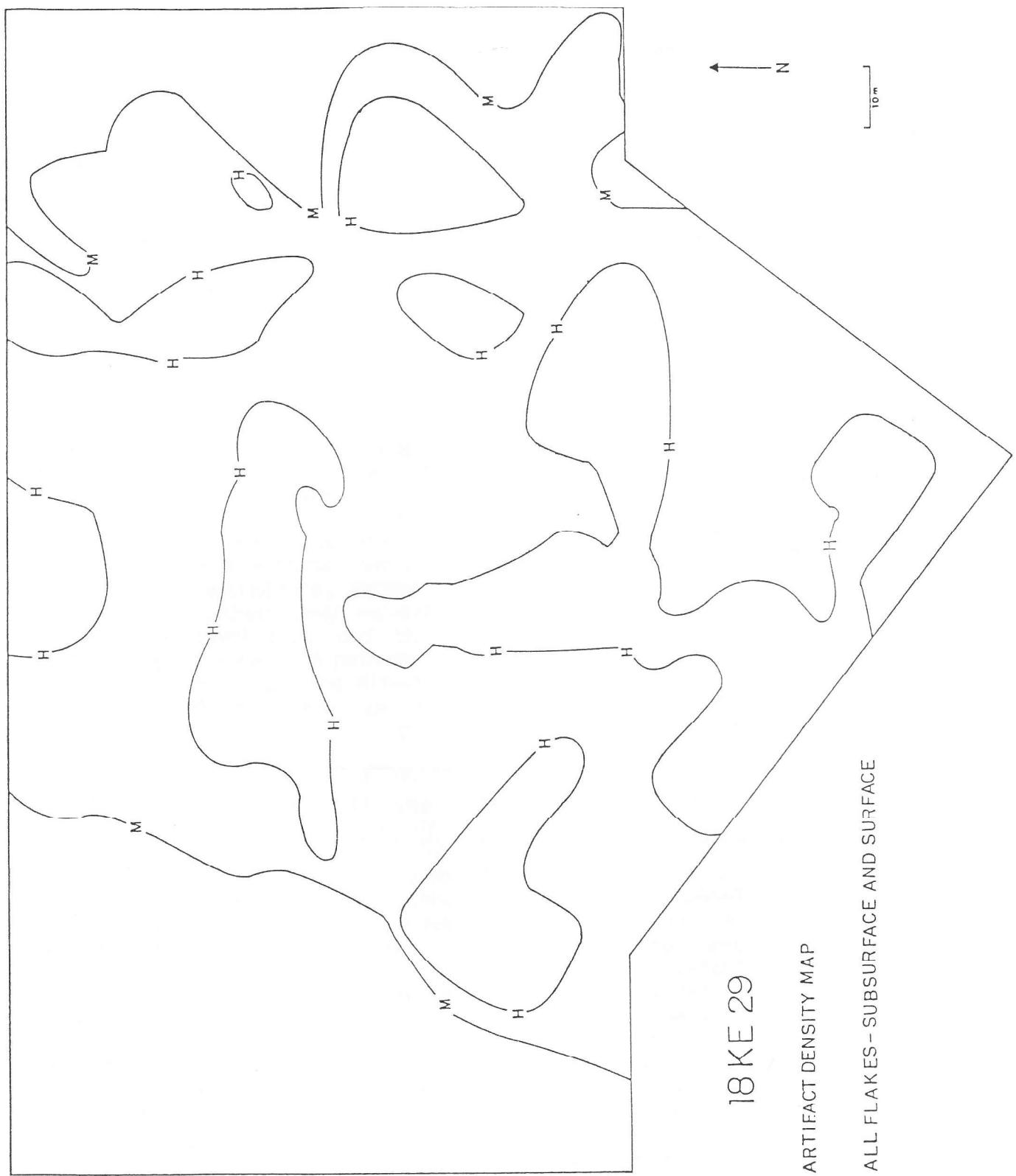


Figure 2. 18KE29 Flake Distribution Map

ARROWHEAD FARM SITE

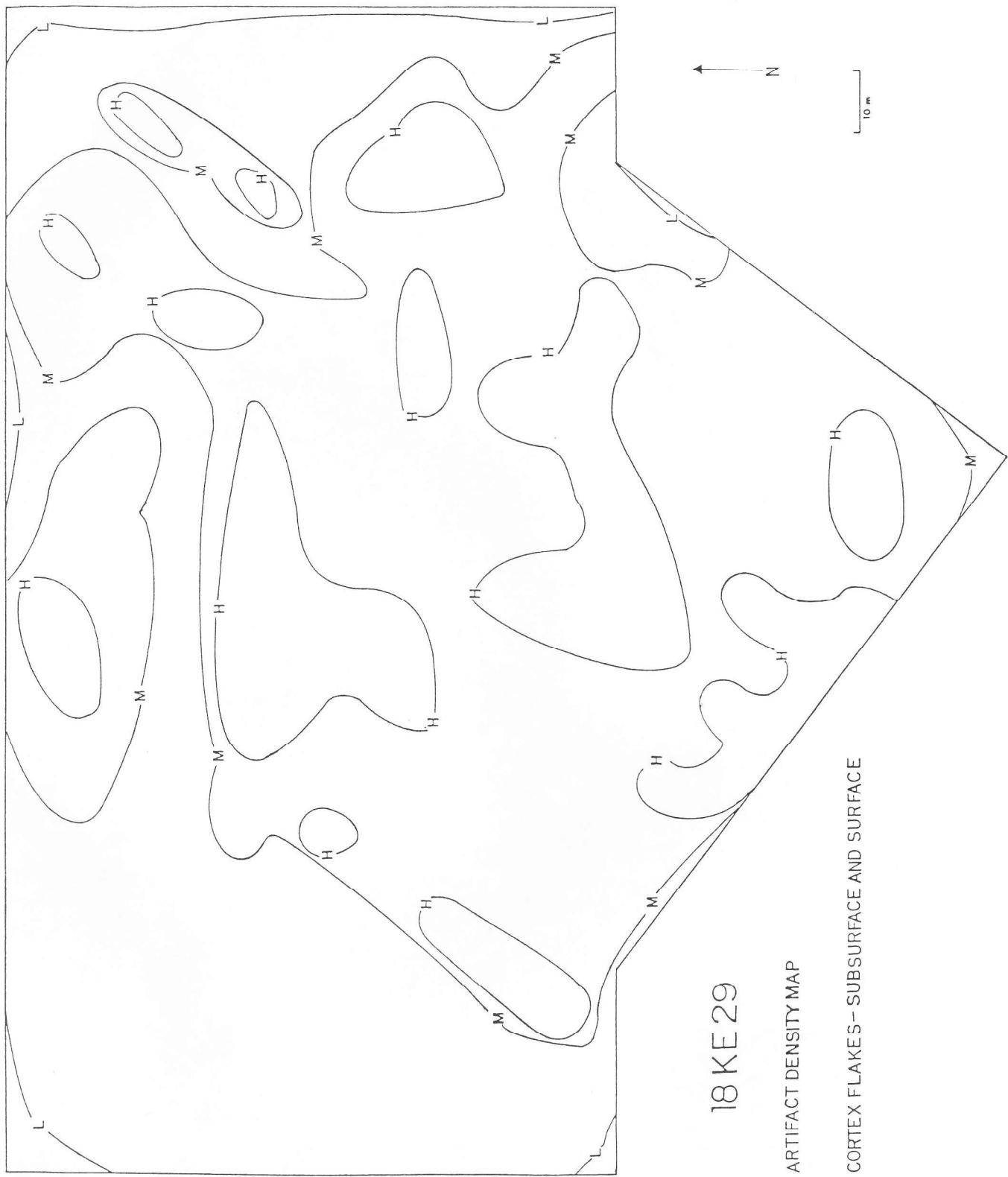


Figure 3. 18KE29 Cortex Flake Density Map

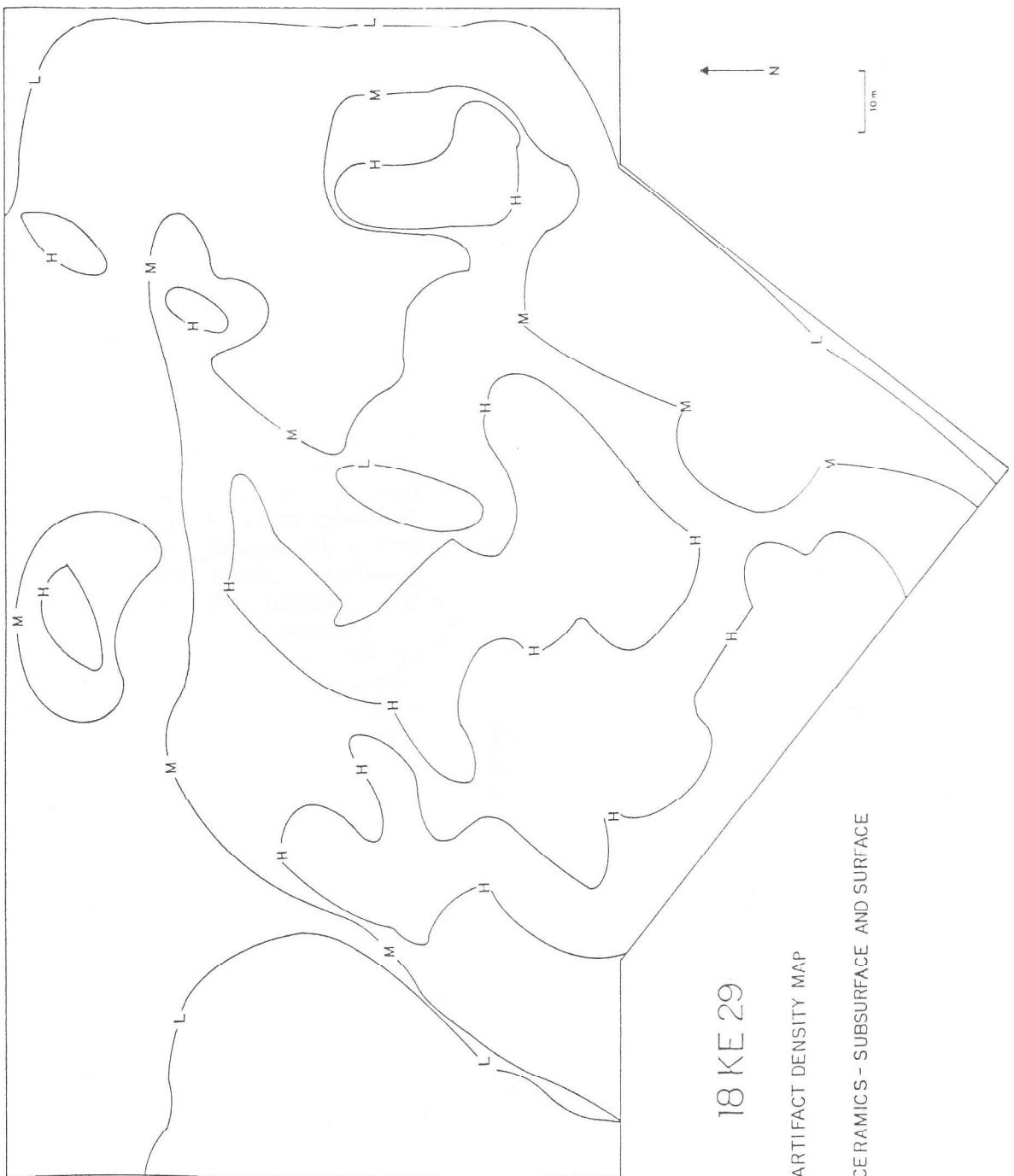


Figure 4. 18KE29 Ceramic Density Map

## ARROWHEAD FARM SITE

Table 7: Minguannan Design Motifs from 18KE29

| <u>Variety</u>                | <u>Sherd Count</u> |
|-------------------------------|--------------------|
| Minguannan Plain              | 35                 |
| Minguannan Compound Decorated | 32                 |
| Minguannan Incised (Total)    | 30                 |
| MI1                           | 0                  |
| MI2                           | 11                 |
| MI3                           | 9                  |
| MI4                           | 0                  |
| MI5                           | 5                  |
| MI6                           | 5                  |
| Minguannan Corded (Total)     | 63                 |
| MC1                           | 18                 |
| MC2                           | 32                 |
| MC3                           | 7                  |
| MC4                           | 6                  |
| MC5                           | 0                  |

Minguannan ceramic varieties described in Custer (1984:152-153, Figure 17)

the Lower and Middle Susquehanna Valley (Kinsey and Graybill 1971; Custer n.d.a) and the presence of a Shenks Ferry sherd shows some interaction between Minguannan and Shenks Ferry groups during terminal Late Woodland times.

A few historic artifacts were present in the surface collection and excavated plowzone. Most represented 19<sup>th</sup> and 20<sup>th</sup> century field scatter; however, a few deserve special mention. A sherd of North Devon gravel tempered pottery was recovered and this historic ceramic type dates to the late 17<sup>th</sup> century (Noel Hume 1976). Also, two "pillow-shaped" gunflints were found. These gunflints were made from local pebble cherts and are quite different from typical European gunflints. Most European gunflints are manufactured by using a blade technology which produces the typical prismatic form of gunflints (Witthoft 1966). In contrast, the "pillow-shaped" gunflints are small bifaces and are thought to be of aboriginal manufacture. These gunflints have been found in mid- to late-17<sup>th</sup> century contexts at Susquehannock sites (Kent 1984:248-254). A related artifact type found at Arrowhead

Farm includes roulette-decorated pipes. These pipes are clearly of aboriginal origin and have been found in Contact Period contexts (Kent 1984:145-151; Custer 1982). All of these artifacts date to the Contact period (ca. 1620-1730) and may indicate a Contact period occupation of the Arrowhead Farm site. However, these artifacts are a very small portion of the site's artifact assemblage and their context in the disturbed plowzone is problematic. Nonetheless, they may still be viewed as a tantalizing hint of a Contact period occupation of 18KE29.

## DISCUSSION

The results of the survey and excavation of sites at the Arrowhead Farm complex show human use of the Still Pond area for at least the 5,000 year period prior to European Contact. Up to ca. A.D. 1000 the human use of the project area seems to be somewhat ephemeral with most of the sites being procurement sites. However, the two shell midden sites (18KE287 and 18KE288) indicate the presence of some kind of base camp site, although the date of their use is uncer-

tain. In general, the pre-Late Woodland site distribution for the Arrowhead Farm complex fits with models of local site distributions (Custer 1983).

The Late Woodland habitation of the Arrowhead Farm complex is much more intensive, especially at 18KE29. Although there are extensive remains over a wide area, the Late Woodland remains seem to be the result of numerous small encampments over a long period of time. 18KE29 is not a village site. Probably the best description of its function would be a periodically revisited base camp. As such, the site is similar to other large Minguannan Complex base camp sites of the Upper Delmarva/southeastern Pennsylvania area such as the Webb site (Custer n.d.b) and the Minguannan site (Wilkins 1978) in Chester County, Pennsylvania, the Grear site (Custer 1983:Table 12), the Hollingsworth site (Thomas 1982), and the Conowingo site (McNamara 1983) in Cecil County, Maryland, and the Mitchell site (Custer and DeSantis n.d.) and the Clyde Farm site (Custer 1982) in northern New Castle County, Delaware. The absence of features at these sites supports the contention that Minguannan groups were mobile hunters and gatherers, not semi-sedentary agriculturalists, as were many of their neighbors to the north and west (see Stewart, Hummer, and Custer n.d. and Custer n.d.a).

In sum, the Arrowhead Farm site did not quite live up to its reputation in that it is neither a Potomac Creek site, nor a village site. However, it is an important Minguannan Complex base camp site. Before closing, a comment on the possible Contact artifacts can be made. The poor context of the possible Contact period artifacts makes it dangerous to note a definite Contact period occupation. However, the post-1350 date of the Late Woodland occupation and the possible Contact period artifacts make it reasonable to say that the Arrowhead Farm site (18KE29) can be identified as a protohistoric Tockwogh site. Figure 5 shows a detail of the 1608 John Smith map of the area and the proximity of the Arrowhead

Farm site location to Smith's designation of Tockwogh can be noted. If 18KE29 is indeed a Tockwogh site, its similarity to other northern Minguannan Complex sites, which are associated with the ethnohistoric Lenape, is interesting because it suggests that the material culture and settlement pattern differences between protohistoric Lenape and Tockwogh groups were minimal. Ceramic design similarities also suggest frequent interactions among these groups.

Acknowledgements. We thank the following people and organizations who helped with the research project. Wayne Clark and Richard Hughes of the Maryland Historical Trust, the Kent County Chapter of the Archaeological Society of Delaware, the Schuylkill Valley Chapter (No. 21) of the Society for Pennsylvania Archaeology, members of the University of Delaware summer field schools in archeology and artifact analysis classes, Joe McNamara of the Maryland Geological Survey, Division of Archeology, and Kevin Cunningham of the Delaware Department of Transportation. We especially thank James and Anne Long for their patience, cooperation, and hospitality during our work on their property.

JAY F. CUSTER  
PATRICIA A. JEHLE  
H. HENRY WARD  
SCOTT C. WATSON  
CLAIRE MENSACK

Center for Archaeological Research  
Department of Anthropology  
University of Delaware  
Newark, DE 19716

#### REFERENCES CITED

- Arkin, H.  
1974 *Handbook of Sampling for Auditing and Accounting.* McGraw-Hill, New York.
- Casselberry, S.  
1971 *The Schultz-Funck Site (36LA7): Its Role in the Culture History of the Susquehannock and Shenks Ferry Indians.* Ph.D. dissertation, Pennsylvania State

## Detail from John Smith Map

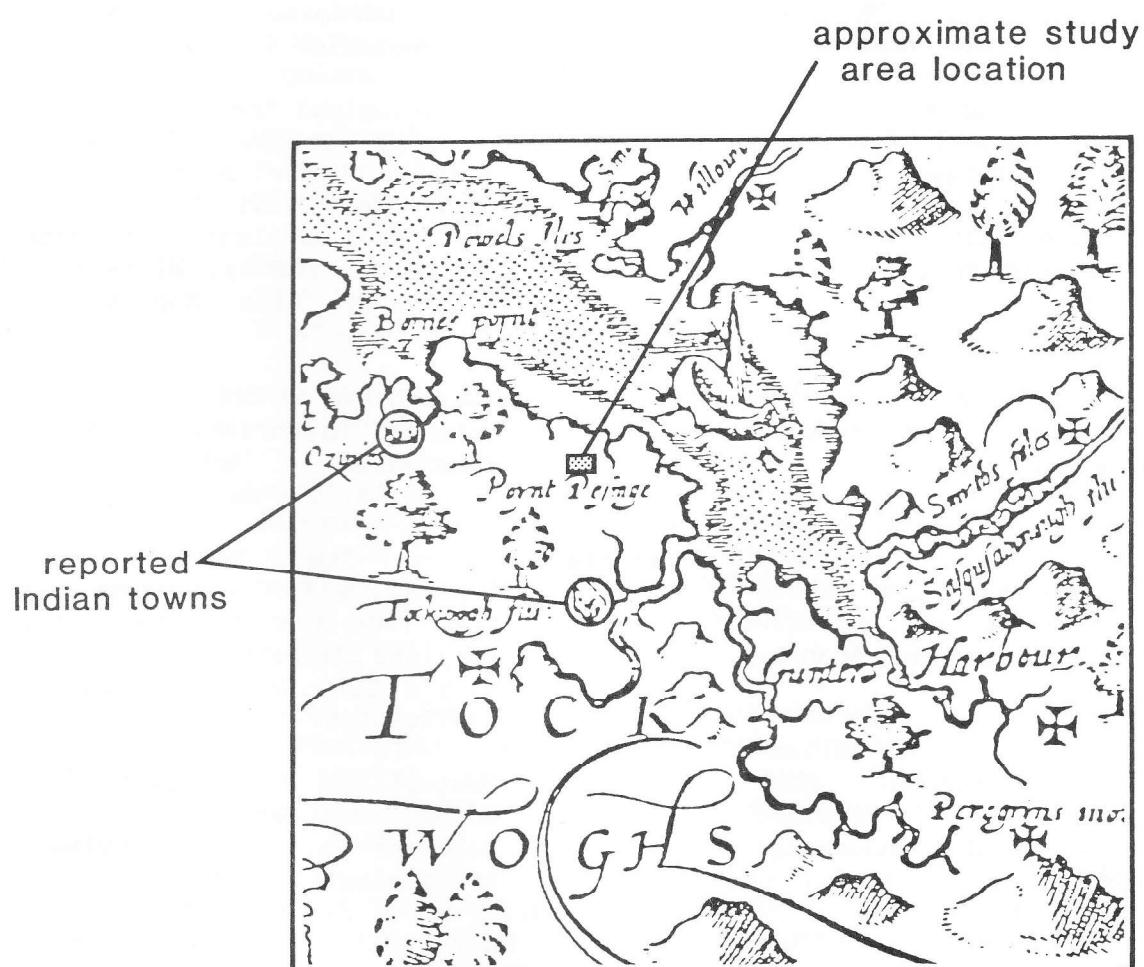


Figure 5. Detail of John Smith Map and Location of 18KE29

- University. University Micro-films, Ann Arbor.
- Custer, J.F.
- 1982 The Archaeology of the Churchmans Marsh Vicinity. **Bulletin of the Archaeological Society of Delaware** 13:1-41.
- 1983 A Management Plan for the Archaeological Resources of the Upper Delmarva Region of Maryland, Cecil, Kent, Talbot, Queen Annes, Caroline, and Dorchester Counties. **Maryland Historical Trust Manuscript Series** No. 31. Annapolis.
- 1984 **Delaware Prehistoric Archaeology: An Ecological Approach.** University of Delaware Press, Newark.
- n.d.a **Late Woodland Cultures of the Middle Atlantic Region.** University of Delaware Press, Newark.
- n.d.b Test Excavations at the Webb Site (36CH51), Chester County, Pennsylvania. **Pennsylvania Archaeologist**, in press.
- Custer, J.F., and C. DeSantis
- n.d. Preliminary Archaeological Investigations at the Mitchell Farm Site (7NC-A-2), New Castle County, Delaware. Ms. submitted to **Pennsylvania Archaeologist**.
- Custer, J.F., and K.R. Doms
- 1983 A Reanalysis of the Wilke-Thompson Collections, Kent County, Maryland. **Maryland Historical Trust Manuscript Series** No. 30. Annapolis.
- Custer, J.F., and G.J. Galasso
- 1983 An Archaeological Survey of the St. Jones and Murderkill Drainages, Kent County, Delaware. **Bulletin of the Archaeological Society of Delaware** 14:1-18.
- Custer, J.F., and E. B. Wallace
- 1982 Patterns of Resource Distribution and Archaeological Settlement Patterns in the Piedmont Uplands of the Middle Atlantic Region. **North American Archaeologist** 3:139-172.
- Flannery, K.V.
- 1976 **The Early Mesoamerican Village.** Academic Press, New York.
- Griffith, D.R., and J.F. Custer
- n.d. Late Woodland Ceramics of Delaware: Implications for the Late Prehistoric Archaeology of Northeastern North America. **Pennsylvania Archaeologist**, in press.
- Heisey, H.
- 1971 An Interpretation of Shanks Ferry Ceramics. **Pennsylvania Archaeologist** 41(4):44-70.
- Kavanagh, M.
- 1979 Archeological Reconnaissance of Proposed Channel Improvement in the Upper Chester Watershed, Kent and Queen Annes Counties, Maryland. **Maryland Geological Survey, Division of Archeology File Report** 147. Baltimore.
- Kent, B.C.
- 1984 Susquehanna's Indians. **Pennsylvania Historical and Museum Commission Anthropological Series** No. 6. Harrisburg.
- Kent, B.W.
- in press Making Dead Oysters Talk: Techniques for Analyzing Oysters from Archeological Sites. Maryland Historical Trust, St. Mary's City Commission Special Publication. Annapolis.
- Kinsey, W.F.
- 1975 Faucett and Byram Sites: Chronology and Settlement in the Delaware Valley. **Pennsylvania Archaeologist** 45(1-2):1-103.
- Kinsey, W.F., and J.R. Graybill
- 1971 Murry Site and its Role in Lancaster and Funk Phases of Shanks Ferry Culture. **Pennsylvania Archaeologist** 41(4):7-43.
- McNamara, J.M.
- 1983 Summary of the 1982 Excavations at the Conowingo Site (18CE14). **Maryland Geological Survey, Division of Archeology File Report** No. 136. Baltimore.

ARROWHEAD FARM SITE

- |   |  |                      |  |
|---|--|----------------------|--|
| Noel Hume, I.                                     |  | 1977b                | <b>Prehistoric Archaeological Resources in the Maryland Coastal Zone: A Management Overview.</b> Maryland Division of Natural Resources, Annapolis.                |
| 1976  | <b>A Guide to the Artifacts of Colonial America.</b> Alfred A. Knopf, New York.  |                      |  |
| Stewart, R.M., C. Hummer, and J.F. Custer<br>n.d. | Late Woodland Cultures of the Upper Delmarva Peninsula and the Lower and Middle Delaware River Valley. In <b>Late Woodland Cultures of the Middle Atlantic Region</b> , edited by J.F. Custer. University of Delaware Press, Newark, in press. | 1979                 | <b>Kent County Prehistoric Land Use Study Artifact Density Maps.</b> Maryland Historical Trust, Annapolis.   |
| Thomas, R.A.<br>1982                              | Intensive Archaeological Excavations at the Hollingsworth Farm Site, Elkton, Maryland. <b>Maryland Archaeology</b> 18(1):9-28.   | Wilkins, E.<br>1978  | <b>A Selden Island Vessel from the Minguannan Site (36CH3). Bulletin of the Archaeological Society of Delaware</b> 11:17-22.                                       |
| Vidal, T., and K. Binder<br>1983                  | Analysis of Surface Collections from 18KE29. Ms. on file, University of Delaware Center for Archaeological Research, Newark.   | Winter, M.<br>1976   | Excavating a Shallow Community by Random Sampling Quadrats. In <b>The Early Mesoamerican Village</b> , edited by K. Flannery, pp. 62-67. Academic Press, New York. |
| Wilke, S., and G. Thompson<br>1977a               | Prehistoric Resources of Portions of Coastal Kent County, Maryland. <b>Maryland Geological Survey, Division of Archeology File Report No. 139.</b> Baltimore.  | Wise, C.L.<br>1983   | <b>Development of a Cultural Resources Management Plan for Lums Pond State Park.</b> Delaware Division of Parks and Recreation, Dover.                             |
|   |  | Witthoft, J.<br>1966 | A History of Gunflints. <b>Pennsylvania Archaeologist</b> 36(1-2): 12-49.  |