SECTION 19.0 NATIVE AMERICAN LAND USE AND SETTLEMENT PATTERNS

Hickory Bluff represented a series of Native American occupations on the middle reaches of the St. Jones River in central Delaware. The primary occupations are associated with the Late Archaic, and Early and Middle Woodland periods, and represent increasing cultural development and social complexity through time (Section 18.0). The St. Jones River drainage can be characterized as a natural and cultural landscape within which the occupants of Hickory Bluff lived. The natural landscape, as traditionally viewed in archaeology (Knapp and Ashmore 1999), provided environmental parameters within which settlement was constant and economic practices were stabilized. The cultural landscape defined social parameters (Buikstra and Charles 1999) for occupation along the St. Jones River.

HICKORY BLUFF OCCUPATIONS

Prior to 4000 years B.P., evidence for occupation at Hickory Bluff was sporadic and likely the consequence of a combination of factors, including unfavorable environments and unstable landscapes. During the last 4,000 years, the record of occupation at Hickory Bluff coincided with some significant changes in macro-environmental processes (Section 4.0). These environmental conditions were dynamic and recorded as alterations in the St. Jones River landscape, changing from fluvial/palustrine to tidal/estuarine with concomitant diversity of forest cover (Section 8.0). While the coarse-grained resolution of the archaeological record of Hickory Bluff does not inform upon the small-scale effects of these major changes, spatial and temporal fluctuations in ecological settings and behavioral responses are anticipated. The general environmental dynamism coincides with the development of a productive ecological settings and more substantial settlement of the St. Jones River landscape, producing the first considerable archaeological record during the end of the Late Archaic.

The Late Archaic occupation at Hickory Bluff coincided with a woodland environment along a meandering river, with abundant natural resources for subsistence and technological needs. Sites of the Late Archaic period increase in number and size, as compared to the relatively infrequent record of earlier occupations. While Late Archaic occupations cannot be clearly delineated due to cultural overprinting and the lack of ceramic technology for use as a diagnostic, several chipped and non-chipped assemblages and features likely connected to this time period appear at Hickory Bluff (e.g., rhyolite knapping cluster in Locus G). Riverine food exploitation is implied and nutmeat (dated to the Late Archaic period) would have been available for procurement during the fall season.

The stone tool catchment area shows broad distribution across the Mid-Atlantic, ranging over the Delmarva Piedmont and Coastal Plain, and in Piedmont zones of the Delaware River Valley, Ridge and Valley of Maryland, and the interior mountains of North Carolina. Procurement of quarried lithic resources of argillite and rhyolite is consistent with previously hypothesized settlement models, which indicates a fixed system of resource use, resulting from either visits to piedmont quarries or exchange networks. This significant geographic finding, which bolsters fixed resource use models, reinforces the notion of regularized behaviors. In the context of geographic range and potential mobility, it is interesting to note the absence of soapstone containers at Hickory Bluff (and other St. Jones River sites). The bulky, heavy nature of the soapstone bowls may have

hindered extensive transport with increasing distance from the soapstone quarries. The relative intensity of occupation on the St. Jones River and use of local and regional resources implies a scheduling of residential moves according to dependable and seasonally available resources. Some degree of consistency in Late Archaic behaviors throughout the Delmarva and resource exploitation along the St. Jones River and other drainages would also imply a certain degree of structure to social organizations between cooperative neighboring groups, and some level of prestige to certain individuals able to negotiate relationships. The nature of the Late Archaic occupation at Hickory Bluff and the Delmarva sets the stage for more intensive and extensive use of resources and social relations that become pronounced during the Early Woodland.

The Early to Middle Woodland occupations at Hickory Bluff coincided with less dynamic macro-environmental changes compared to the earlier history of more dramatic sea level rise. During the early part of the Woodland, the riverine system changed to braided conditions and towards the Middle Woodland, the drainage experienced more tidal influences. This shift led to a settling of valleys, an increase of both soil and vegetative cover, and the development of organic rich environments. A somewhat different pattern of use is indicated in comparison to the Late Archaic behaviors, with a decline in the use of the Delaware Valley argillite and connection with groups in the Midwest. Lithic exploitation appears to be increasingly focused on Coastal Plain gravels, obtainable on-site, along the St. Jones River, and across the Delmarva Peninsula.

The Early Woodland occupation at Hickory Bluff, on the whole, is the most materially abundant period of occupation, based on the frequency of lithic and ceramic assemblages and their distribution across the site. Examination of the distribution of the earliest wares of the Early Woodland period (including Marcey Creek, Wolfe Neck, and Dames Quarter) revealed both discrete and overlapping clusters, suggestive of non-contemporaneous, but cyclical occupation of the landform (Figure 19.1). The ceramic assemblage is the most sensitive indicator of manufacturing and stylistic changes during the course of the Early Woodland and is therefore a good proxy for geographic and social relationships.

The Marcey Creek vessels of Hickory Bluff fall within the range of variation observed in styles identified across the Mid-Atlantic. The identification of Marcey Creek vessels is a clear sign of the rapid and widespread adoption of a new technology (ceramics) and increased communication between social groups. Given that the majority of these vessels are flat-bottomed forms, they appear to mimic earlier soapstone bowls suggesting a degree of social cohesion (Stewart 1998b). While adoption of ceramic technology may imply a more limited mobility (which has its roots in the Late Archaic), the lack of steatite containers at Hickory Bluff (and along the St. Jones River) suggests that ceramic technology is a marker of economic and social change. Significantly, in the analysis of the Marcey Creek vessels, mineralogical analysis of the clay indicated a non-local source, which is supported by the inclusion of piedmont derived steatite tempering agents. This suggests that steatite-tempered vessels are either being transported directly into the Delmarva during seasonal group movements or the vessels are exchanged between groups. In either scenario, the manufacturers of pottery at some distant source, is a clear demarcation of a novel economy. If vessels are being manufactured elsewhere and imported onto the Delmarva, this implies that vessels are not being made individually at the household level, but are the product of specialists (Stewart 1998a, 1998b). If this assumption is accurate, pottery manufacturers would have gained increased social prestige, thereby suggesting incipient social divergence.

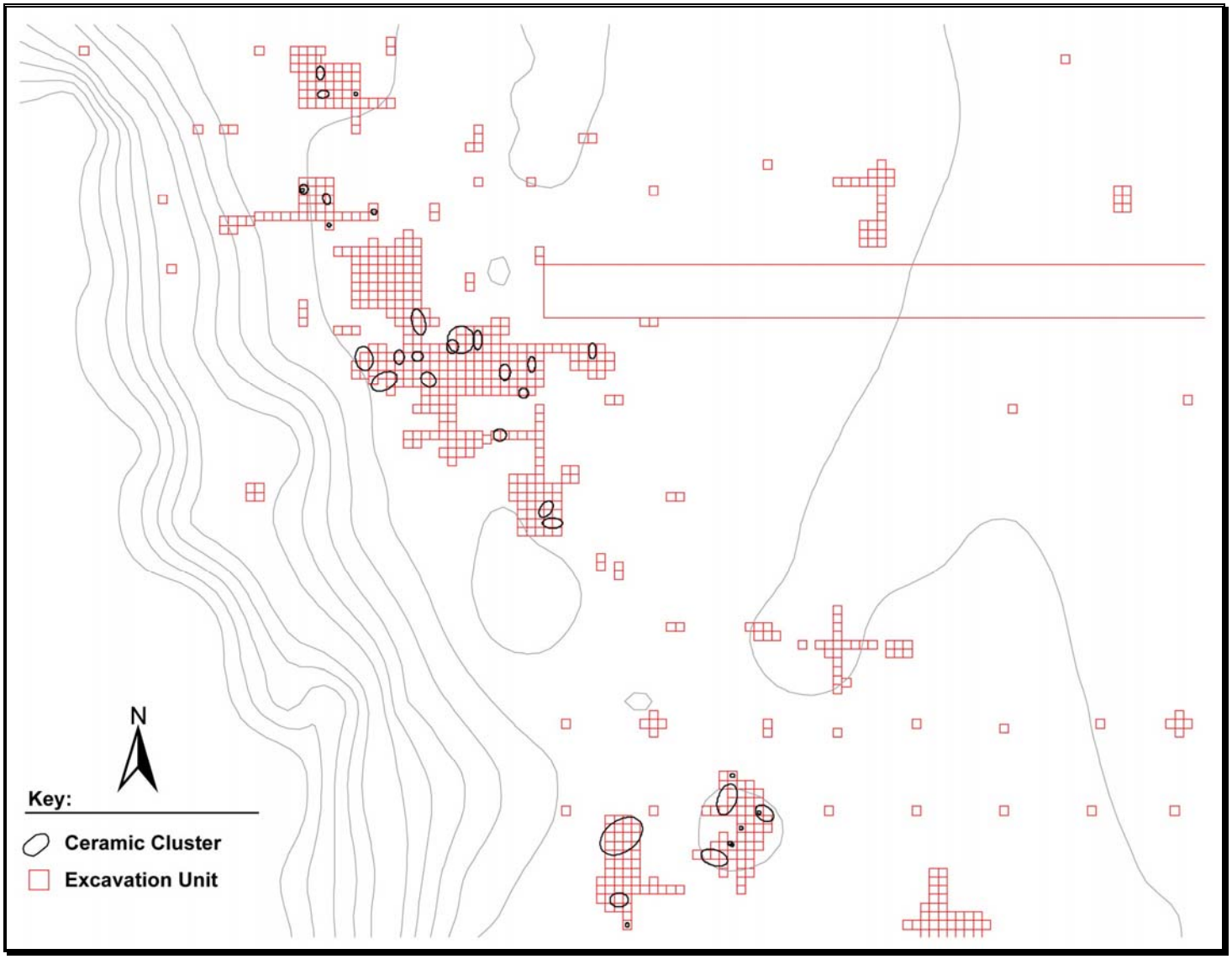

Figure 19.1 Early Woodland Occupations at Hickory Bluff Based on Ceramic Clusters

A division in pottery manufacture appears to be recorded at Hickory Bluff in vessels that are considered to be contemporaneous or slightly younger in age than Marcey Creek. Wares such as the Dames Quarter and Wolfe Neck types, are likely manufactured locally, as suggested by their clay and tempering agents, as well as their more geographically bounded styles. The variability in these Early Woodland ceramic wares indicates some degree of local experimentation and a degree of social autonomy from neighboring groups. This experimentation was especially evident in Vessel Lot MA02, which contained elements of traditional Marcey Creek ware in addition to construction, inclusions, and body form reminiscent of later wares, and was similar to a locally procured clay tile. The local evidence stands in contrast to the regional Marcey Creek spatial evidence and, if pottery was made at the household level for the Dames Quarter and Wolfe Neck wares, it is probable that no special social status would be ascribed to these manufacturers.

Hickory Bluff provided important information on the Adena phase of the Early/Middle Woodland periods, both on a local and regional level. Much attention has been placed on the elaborate mortuary items of the Adena culture, while the Hickory Bluff excavations provided a context to examine a site that preserves the daily behaviors of its occupants as signaled through clusters of Clay Tempered wares. While mortuary sites have shown a broad level of inter-group contact through exchange of exotic materials, there is evidence to suggest some degree of social autonomy between distant groups. The Delmarva Adena is distinct and marked by a settlement and subsistence economy geared towards riverine and estuarine settings and localized material culture (Artusy 1978; Wise 1984; Custer 1989, 1994; Dent 1995).

The archaeological evidence from Hickory Bluff is mainly indicative of an endemic Delmarva economy and social organization. The site-wide distribution of Clay Tempered ceramic clusters demonstrated the intensity of the site use at this time, as compared to other periods (Figure 19.2). Clusters of Clay Tempered ceramics were evident across a wider area of the site and contained greater numbers in both numbers of vessels represented and total sherds. The distribution of clusters is suggestive of segregated activity areas. Although the general commingling of data made isolation of specific activity areas difficult, the emergent pattern was perhaps more reflective of cyclical reuse than long term structured accumulation. The ceramic assemblage supports a local social organization as the Clay Tempered wares were a common feature of the Delmarva (Wise 1974, 1975; Bastian 1975; Artusy 1976, 1978; Griffith 1982; Custer et al. 1983; Custer 1994) and rare in the northern areas of the Mid-Atlantic (Stewart 1998a). However, the Clay Tempered wares do show similarity with forms found in the eastern portions of Maryland and Virginia, and those found in the southeast, particularly in the Coastal Plain drainages of the Chesapeake Bay in Virginia (Croakers Landing) and North Carolina. The production of Clay Tempered wares was probably a sign of local, household manufacture, and mineralogical analysis on Hickory Bluff's assemblage supports this contention. While several Early/Middle Woodland lithic items were related to Ohio sources, it is clear that material transport and exchange from the Midwest was a relatively rare event.

The Middle Woodland of Hickory Bluff was a prominent feature, but there was a decrease in material evidence compared to the Early Woodland. The Middle Woodland ceramic assemblage consisted mainly of Mockley ware (with rarer Popes Creek and Hell Island vessels) and the site-wide distribution of the clusters of these wares confirmed the decrease in frequency. The clusters at the site are fewer in number, are smaller and more dispersed, and do not cover the site to the same extant as the earlier wares (Figure 19.3).

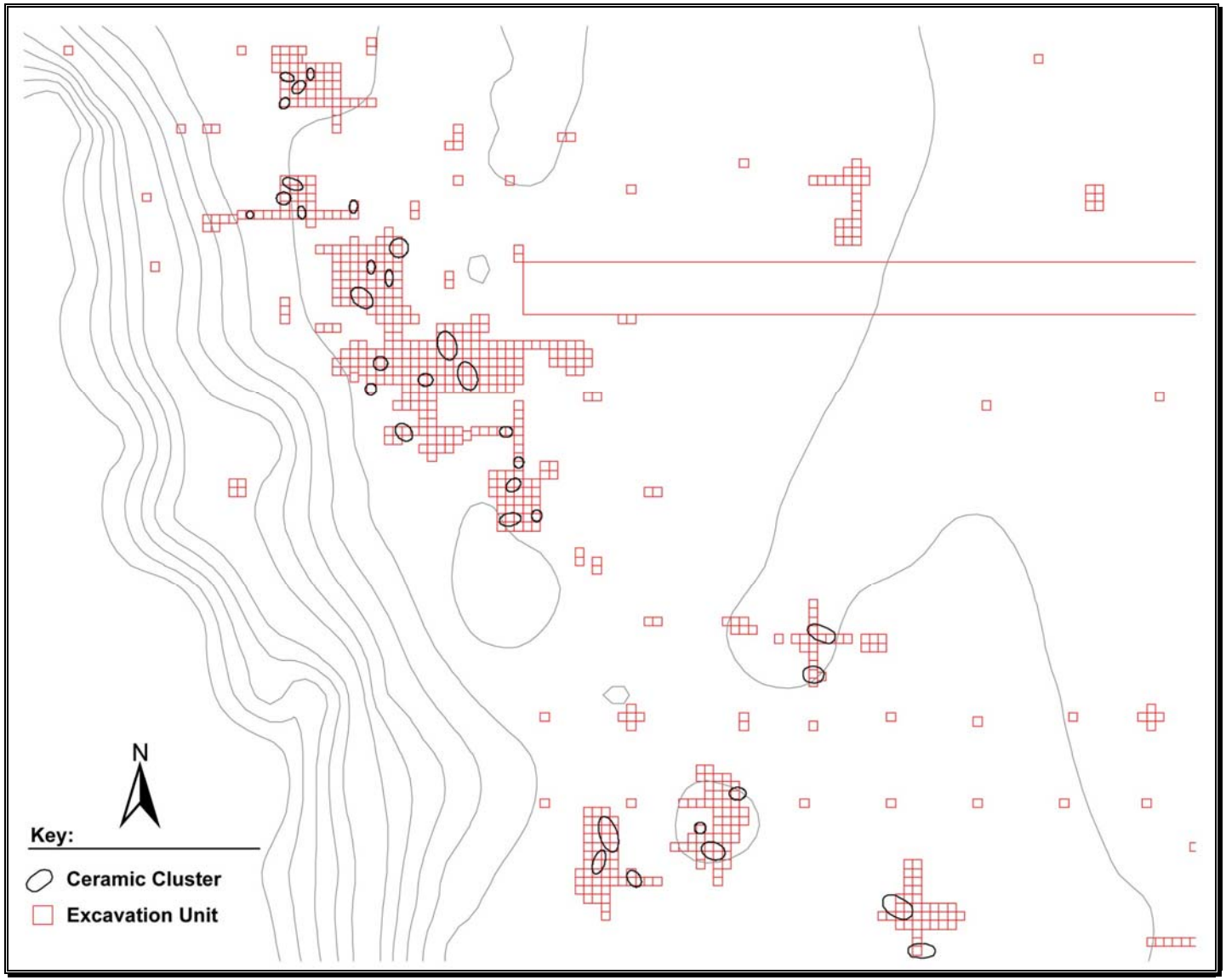

Figure 19.2 Early to Middle Woodland Occupations at Hickory Bluff Based on Clay Tempered Ceramic Clusters

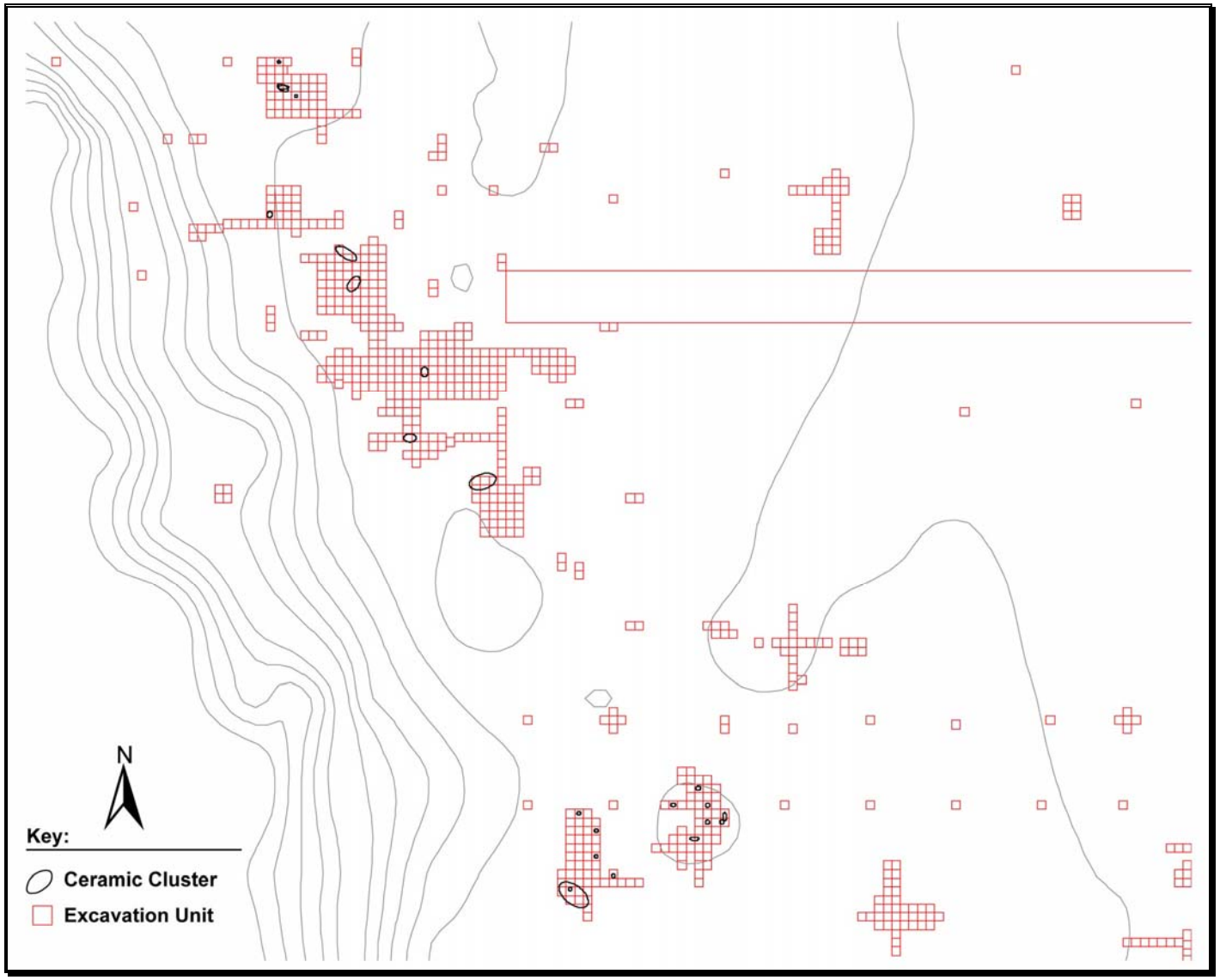

Figure 19.3 Middle Woodland Occupations at Hickory Bluff based on Ceramic Clusters.

The Mockley vessels from Hickory Bluff show similarity to net-impressed, shell tempered wares found throughout the Mid-Atlantic and the Chesapeake Bay region, taken as a sign of social integration (Stewart 1998a). The presence of the geographically ubiquitous Mockley ware (and Fox Creek and Selby Bay points) contrasts with the earlier and more geographically confined Clay Tempered wares. While the presence of Mockley ware may indicate inter-group integration, the Delmarva ceramics vary from those found in the Delaware River Valley and in coastal Virginia (Stewart 1998a). This variation implies some degree of social distance between Middle Woodland groups.

A profound change is indicated at Hickory Bluff and on the St. Jones River landscape with the onset of the Late Woodland period. The most significant macro-environmental change would have been the increased tidal influence of the St. Jones River after A.D. 1000 and the diminished availability of resources such as gravels due to burial and vegetative stabilization. These environmental changes are concurrent with a dramatic fall off in the material record of Hickory Bluff, with few projectile points and ceramics attributable to this period. Hickory Bluff's Late Woodland ceramic assemblage consisted of small numbers of Minguannan and Townsend wares, consistent with wares being used on the Delmarva at this time. The distribution of these wares across the site illustrated their scarcity in number and spatial extent, as they represented the fewest number of vessels and total sherds within the wider assemblage (Figure 19.4). The low density Late Woodland record of Hickory Bluff indicates that groups were conducting temporary forays, likely from more permanent settlements dependent on mixed economies of horticulture, wild plant food processing, and marine exploitation.

THE ST. JONES RIVER OCCUPATIONS

Over 210 Native American sites have been recorded in the St. Jones River watershed providing an excellent source of information on Native American settlement behaviors (Delaware SHPO files) (Figure 19.5). It should be cautioned that observable site patterning is the result of a combination of variables including post-depositional processes, archaeological bias, and cultural selection. Post-depositional processes affecting site patterning include drowned landscapes associated with sea level rise prior to 3000 B.C., flooding and alluvial deposition, and river migration and erosion. Archaeological bias is the result of early work and artifact collecting activities associated with drainages and recent Section 106 (of the National Historic Preservation Act) compliance activities centered in specifically defined project areas. As a result of archaeological bias, not all types of sites are represented because not all topographic zones have received systematic coverage (i.e., lack of systematic survey in uplands and interstream divides). However, keeping the possible biases in mind, some patterns of site locations suggest cultural selection by Native American populations.

Forty sites of the 210 sites in the St. Jones River watershed yielded temporally diagnostic artifacts (i.e., projectile points and ceramics) and/or radiocarbon dates (Figure 19.6). Few Paleoindian (n=3) or Early Archaic (n=4) occupations have been recorded on the St. Jones River. The three sites with possible Paleoindian artifacts (i.e., finely-flaked large projectile point fragments) occur on the upper reaches of the St. Jones River drainage along Fork Branch and Isaac Branch (Figure 19.7).

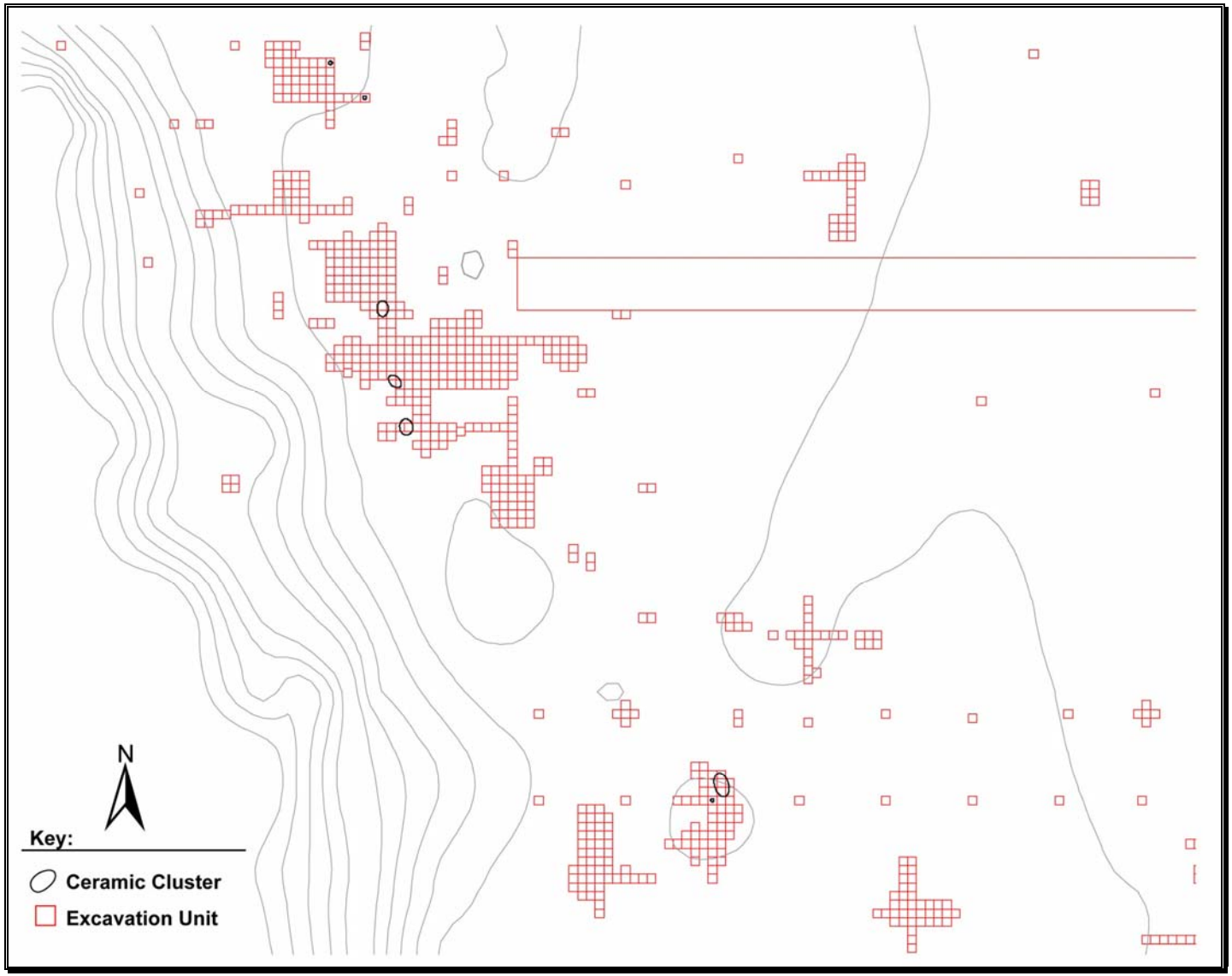

Figure 19.4 Late Woodland Occupations at Hickory Bluff Based on Ceramic Clusters

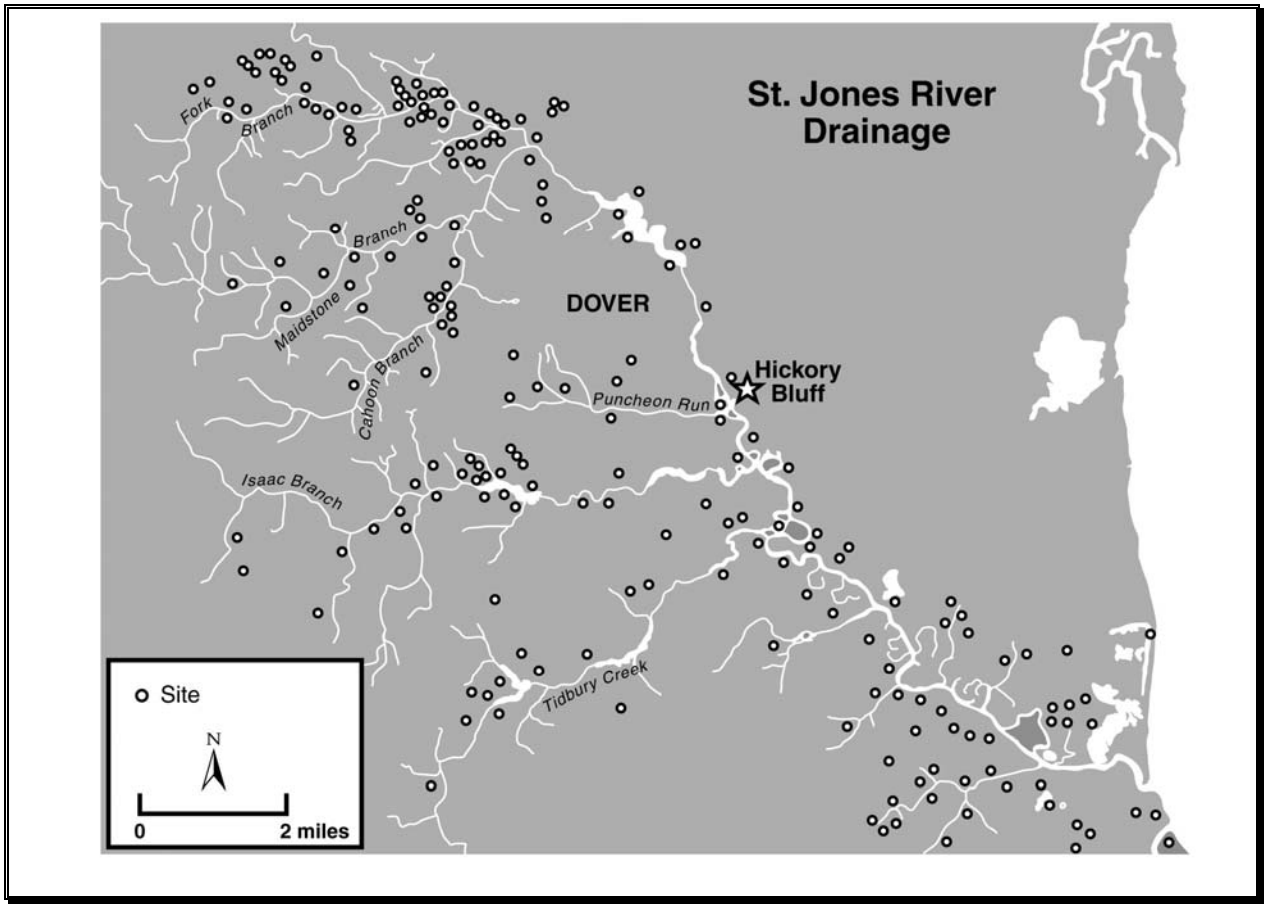

Figure 19.5 Native American Site Locations on the St. Jones River

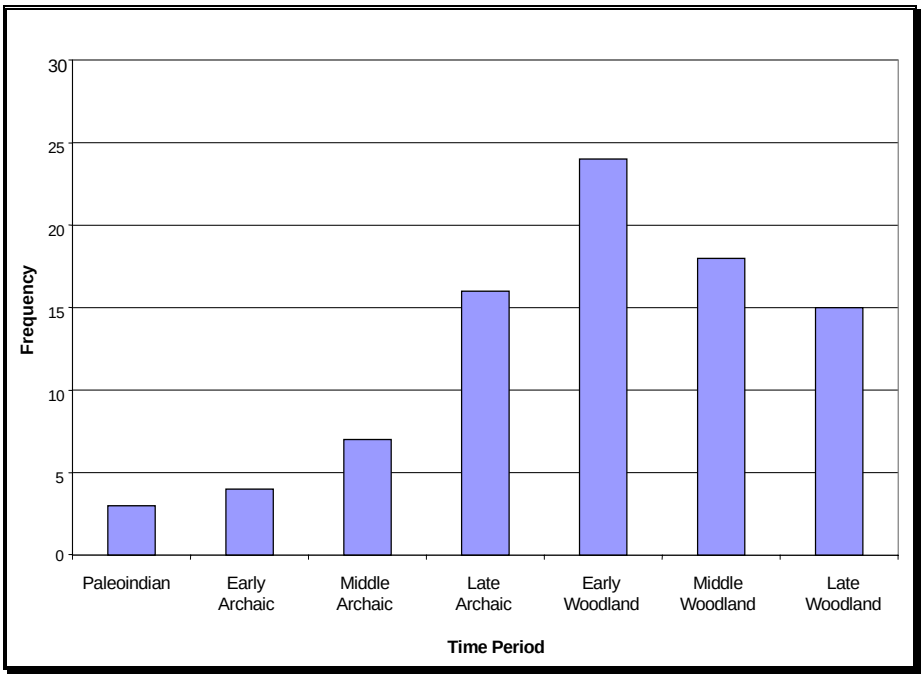

Figure 19.6 Native American Components on the St. Jones River

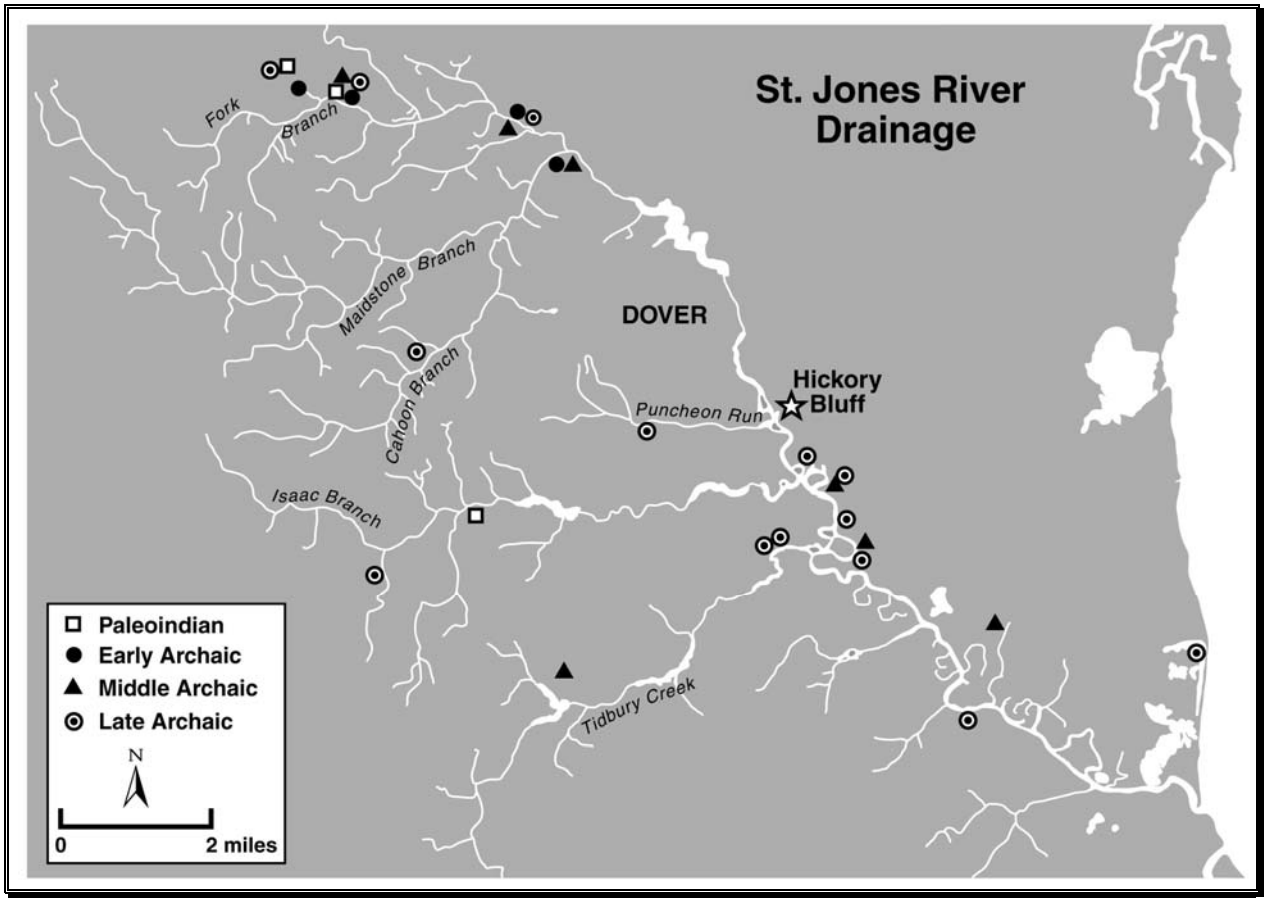

Figure 19.7 Paleoindian and Archaic Components Along the St. Jones River

The four Early Archaic occupations are also situated on Fork Branch in the northern portion of the St. Jones River drainage. Post-depositional processes and differential preservation are both contributors to the scarcity of these early period sites in this watershed. Paleoindian and Archaic floodplain sites on the lower Delaware River and major tributaries have, of course, been lost to rising sea levels after 3000 B.C. At that time, tidal encroachment had the effect of stabilizing the river course of the previously free flowing St. Jones River that had actively meandered. It is highly likely that Paleoindian and Archaic settings analogous to Hickory Bluff and other St. Jones River site locations have been lost to St. Jones River channel transgression or have been buried by colluvial and alluvial sediments.

Middle and Late Archaic occupations increase in number and cover a broader area of the St. Jones River drainage (Figure 19.7). The Middle Archaic occupations occur on Fork Branch, the middle and lower reaches of the St. Jones River, and above Tidbury Creek. The Late Archaic occupations also occur along the St. Jones River, Fork Branch, and on the coast; three sites are associated with smaller tributaries of Isaac Branch, Cahoon Branch, and Puncheon Run. Locations with multiple occupations are few and include Blueberry Hill at the confluence of the St. Jones River with Maidstone Branch (Heite and Blume 1994).

Early, Middle, and Late Woodland occupations illustrate the same broad patterns of site location as suggested in the Middle and Late Archaic; however, these occupations concentrate along

the middle reaches of the St. Jones River with only a few clusters on the confluence with Maidstone Branch and Fork Branch in the northern portion of the watershed (Figure 19.8). Repeated use of site locations throughout the Woodland period increases, particularly along a 4-mile stretch on the middle reaches of the St. Jones River.

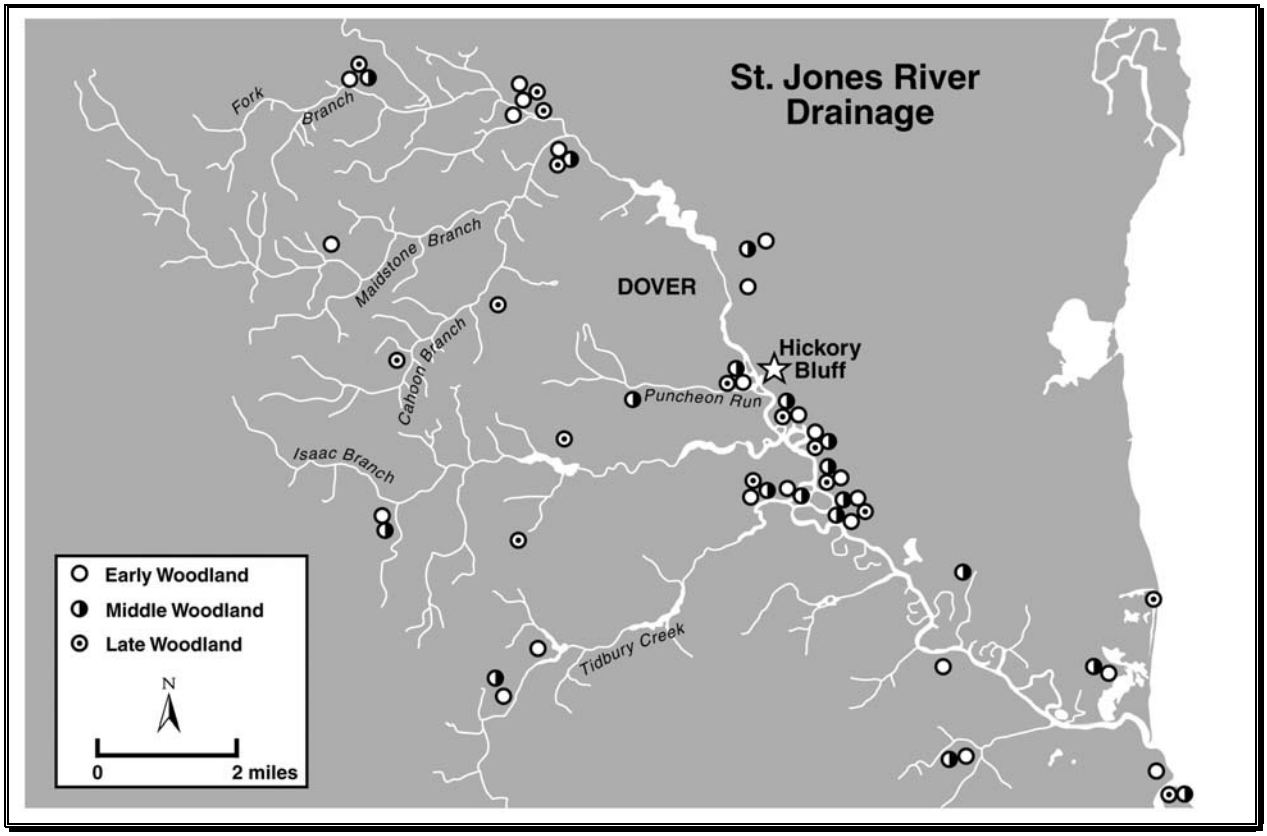

Figure 19.8 Woodland Components Along the St. Jones River

MIDDLE REACHES OF THE ST. JONES RIVER

Ten sites are located within 3 miles of each other on the middle reaches of the St. Jones River (Figure 19.9). In addition to Hickory Bluff, the other Native American sites located in the middle reaches of the St. Jones River include Puncheon Run (7K-C-51), 7K-C-12, Island Farm (7K-C-13), Carey Farm (7K-D-3), 7K-D-26, Wildcat Farm (7K-C-22), Air Base School site (7K-D-2), 7K-D-28, and the St. Jones Adena site (7K-D-1). These sites are located on the bluff above the St. Jones River and the general area encompasses the confluence of the St. Jones River with three tributaries: Puncheon Run, Isaac Branch, and Tidbury Creek. In early times, this area represented an interface between two major resource zones: the estuary environment associated with the embayed confluence and freshwater/ riparian /upland forest zones along the St. Jones River and its tributaries. This patterning of Native American sites along the middle reaches of the St. Jones River is characteristic of the Coastal Plain- major drainage aspect of the Woodland I settlement model (Custer 1994). The accessibility of different resources areas (i.e., tidal estuary and upland forests) and the density of

resources in the estuarine environment created a magnet for Native American populations (Binford 1980).

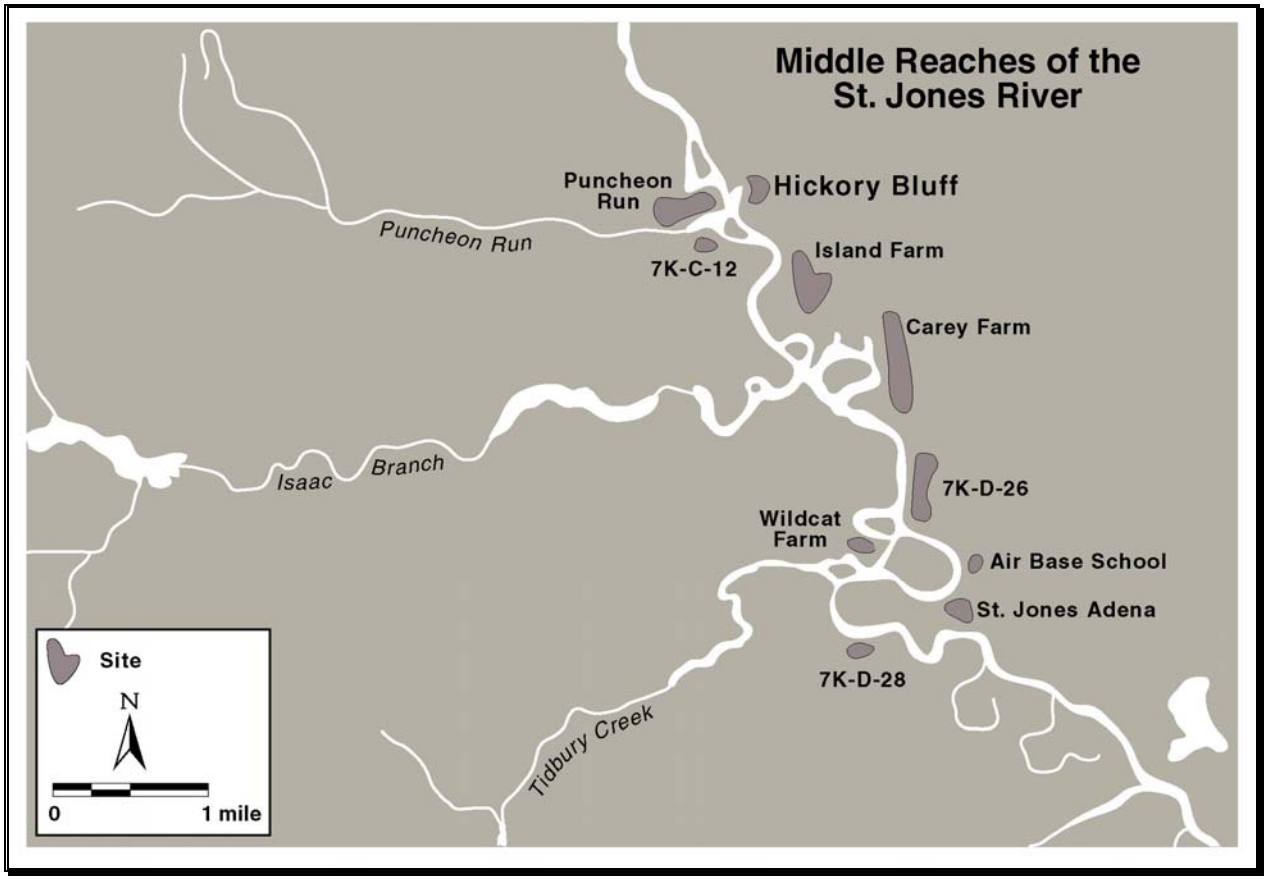

Figure 19.9 Native American Sites Along the Middle Reaches of the St. Jones River

The Sites

The Puncheon Run site (7K-C-51) is located on the northeast terrace above the confluence of the St. Jones River and Puncheon Run, a small swampy drainage. Features included fire-cracked rock (FCR) clusters, cobble clusters, small and large pits and chipping locations (LeeDecker et al. 1998). Over 6,600 artifacts were recovered from Phase I and II investigations including stemmed and corner-notched projectile points; Wolfe Neck, Wilgus, Mockley, Hell Island, Townsend and Killens ceramic sherds; steatite; and debitage of Iron Hill jasper, rhyolite, and argillite (Liebeknecht et al. 1997).

Site 7K-C-12 is located at the confluence of Puncheon Run with the St. Jones River, on the south side of Puncheon Run. Site occupations are listed as Woodland I, Barker's Landing (Marcey Creek and Dames Quarter ceramics), Carey Complex (Mockley ceramics), Webb Complex (Hell Island ceramics), and Woodland II (Townsend and Minguannan ceramics)(Custer 1989).

The Island Farm site (7K-C-13) is located on the terrace northeast of the confluence between the St. Jones River and Isaac Branch. Over 110 features were identified and consisted of 30 large basin-shaped pits, 23 shallow circular pits, 55 circular conical pits, 2 circular flat-bottomed pits, and

6 other features (Custer et al. 1995b). More than 5,300 artifacts were recovered from the Phase III investigations. Projectile point styles recovered at the site include Dalton-Hardaway, stemmed, broadspear, teardrop, side-notched, and triangle. Ceramic types consisted of Seldon Island, Wolfe Neck, Accokeek, Coulbourn, Nassawango, Mockley, Hell Island, and Minguannan (Custer et al. 1995b). Five features were radiocarbon dated with dates ranging from 330 ± 110 years B.P. (A.D. 1400-1660) to 1900 ± 140 years B.P. (A.D. 91-317). Lithic raw material usage at the Island Farm site focused on jasper, chert, quartz, and quartzite. Primary lithic procurement also was conducted in the adjacent cobble and pebble deposits along the St. Jones River (Custer et al. 1995b). A higher proportion of small basin-shaped pits at the Island Farm site suggests that this site was primarily a resource processing location during the Early Woodland period rather than a habitation site like the Carey Farm site. The Island Farm site represents a series of occupations associated with the Early through Late Woodland periods. Floral remains also suggest that the occupations may have occurred in the fall.

The Carey Farm site (7K-D-3) is located on the terrace east of the confluence between the St. Jones River and Isaac Branch. Over 700 features were identified and consisted of 588 large basin-shaped pits, 60 shallow circular pits, 30 circular conical pits, 24 circular flat-bottomed pits and 17 other features including parts of a human burial (Custer et al. 1995b). Over 52,000 artifacts were recovered from the Phase III investigations including a steatite bowl fragment, and an argillite biface cache (57 artifacts). Projectile point styles include Kirk/Palmer, bifurcate, stemmed, side-notched, corner-notched, broadspear, teardrop, Fox Creek, Jack's Reef corner-notched and pentagonal, Snyder's corner-notched and triangle. Ceramic types consisted of Marcey Creek, Wolfe Neck, Accokeek, Coulbourn, Nassawango, Mockley, Hell Island, Townsend, Killens and Minguannan (Custer et al. 1995b). Ten radiocarbon dates were obtained from the south and south central areas of the site with date ranges from 1720 ± 60 years B.P. (A.D. 245-410) to 860 ± 50 years B.P. (A.D. 1165-1245). Lithic raw material usage at the Carey Farm site focused on jasper, chert, quartz, and quartzite; only negligible quantities of rhyolite, argillite, and ironstone were recorded. Based on the percentage of cortex present on the lithic assemblage and the types of materials, primary lithic procurement was conducted using the adjacent cobble and pebble deposits along the St. Jones River (Custer et al. 1995b). The Carey Farm site represents a series of occupations associated with the Early through Late Woodland periods. The presence of floral remains suggests that the occupations may have occurred in the fall.

Site 7K-D-26 is located on the east side of the St. Jones River, north of its confluence with Tidbury Creek. The artifact assemblage consisted of jasper, chert, quartz, quartzite, argillite, and rhyolite debitage; cores, stemmed projectile points, tools, chipped celt, pitted stone, grooved axe, hammerstones, utilized flake tools, late stage bifaces, steatite fragments, drilled pendant; Marcey Creek, Dames Quarter, Wolfe Neck, Coulbourn, Mockley, Hell Island, Townsend and Minguannan sherds; and FCR (Catts et al. 1995; Parsons ES 2000; site form).

The Wildcat Farm site (7K-C-22) is situated on the northwest edge of the confluence of Tidbury Creek and the St. Jones River. Site occupations are listed as Woodland I, Barker's Landing (Marcey Creek and Dames Quarter ceramics), Carey Complex (Mockley ceramics), Late Carey Complex, Webb Complex (Hell Island ceramics), and Woodland II (Townsend and Minguannan ceramics)(Custer 1989). The site form specifically lists the presence of Wolfe Neck net-impressed and cord-marked ceramics, and Hell Island ceramics.

The Air Base School site (7K-D-2) is situated on an oxbow bend in the St. Jones River, north of the St. Jones Adena site. The artifact assemblage from early artifact collections and subsequent cultural resources projects includes projectile points identified as Brewerton Ear, Koens Crispin, Susquehanna, Perkiomen, straight stemmed, expanding stemmed, Bare Island, side-notched, Fox Creek, Rossville, Jack's Reef corner-notched and pentagonal, Madison/Levanna, and Island Field Crude (Parsons ES 2000). Other lithic artifacts consisted of pitted stones, adzes, axes, a celt, hammerstones, manos, pestles, grooved net weights, slate gorget fragments, bifaces, unifaces, drills, utilized flakes, cores, debitage, and FCR. Both steatite bowl and pipe bowl fragments were recovered (site form). Ceramics included Marcey Creek, Coulbourn, Mockley, Hell Island, and Townsend sherds (site form; Thomas and Payne 1996). Some of the chert and chalcedony artifacts are manufactured on material similar to Flint Ridge chalcedony.

Site 7K-D-28 is located on the St. Jones River south of the confluence with Tidbury Creek. Site occupations are listed as Woodland I (presumed Marcey Creek and Dames Quarter ceramics), and Webb Complex (Hell Island ceramics)(Custer 1989).

The Occupations

The resource diversity and density on the middle reaches of the St. Jones River attracted Native American populations and accessibility to those resources would have been available from either bank of the St. Jones River. Six of the 10 sites are located on the east side of the river and four of those are relatively large, in excess of 5 acres (Hickory Bluff, Carey Farm, Island Farm, and 7K-D-26). Proximity to two major embayed oxbow bends in the St. Jones River, that created easier access to estuarine resources, may account for settlement on the east side of the river.

Archaic occupations of the middle reaches of the St. Jones River occurred both at Hickory Bluff and the Puncheon Run site. The earliest occupation, based on radiocarbon dates, was at the Puncheon Run site on the west side of the river (Table 19.1) (LeeDecker 1999). Subsequent Middle Archaic occupations were located on the east side of the river at Hickory Bluff. Middle Archaic occupations, based on temporally diagnostic artifacts, were also identified at Carey Farm (Custer et al. 1995b) and the Air Base School site (Parsons ES 2000).

Table 19.1 Middle Archaic Radiocarbon Dates, Middle Reaches of the St. Jones River

Site	*Provenience/ Material*	*Conventional Radiocarbon Age*	Calibrated Results
Hickory Bluff	Feature 9, Level 4 charcoal	4180 ± 60 years B.P.	2580-2900 B.C.
Hickory Bluff	Stratum B, Level 2 hickory nut	4210 ± 60 years B.P.	2595-2910 B.C.
Hickory Bluff	Feature 9, Level 5 charcoal	4210 ± 50 years B.P.	2610-2905 B.C.
Hickory Bluff	Feature 90, Level 7 hickory nut	4070 ± 40 years B.P.	2810-2855 B.C. or 2480-2690 B.C.
Puncheon Run	Feature 39, Level A-8	4480 ± 60 years B.P.	2925-3360 B.C.

Late Archaic occupations have also been defined at both the Puncheon Run site (LeeDecker 1999) and Hickory Bluff based on radiocarbon dating and artifacts (Table 19.2). Additional Late Archaic diagnostics have been recovered from the Carey Farm site (Custer et al. 1995b), the Island Farm site (Custer et al. 1995b), site 7K-D-26 (Parsons ES 2000) and the Air Base School site (Parsons ES 2000).

Table 19.2 Late Archaic Radiocarbon Dates, Middle Reaches of the St. Jones River

Site	*Provenience/ Material*	*Conventional Radiocarbon Age*	Calibrated Results
Puncheon Run	Feature 94, Level B-2	2960 ± 50 years B.P.	1010-1360 B.C.
Hickory Bluff	Feature 1, Level 5 charcoal	3000 ± 50 years B.P.	1045-1390 B.C.
Puncheon Run	Feature 96, Level B-3	3330 ± 60 years B.P.	1485-1745 B.C.
Puncheon Run	Feature 25, Level A-3	3440 ± 110 years B.P.	1490-2015 B.C.
Puncheon Run	Feature 64, Level A-2	3600 ± 50 years B.P.	1780-2120 B.C.
Puncheon Run	Feature 97, Level B-3	3820 ± 70 years B.P.	2035-2470 B.C.

These ten sites located on the middle reaches of the St. Jones River represent a continuity of occupations from the Early Woodland through the Late Woodland. Early Woodland ceramics (i.e., Marcey Creek, Seldon Island, Dames Quarter, Wolfe Neck and Accokeek) occur in various combinations at nine of the ten sites (the exception being the St. Jones Adena site) (Figure 19.10).

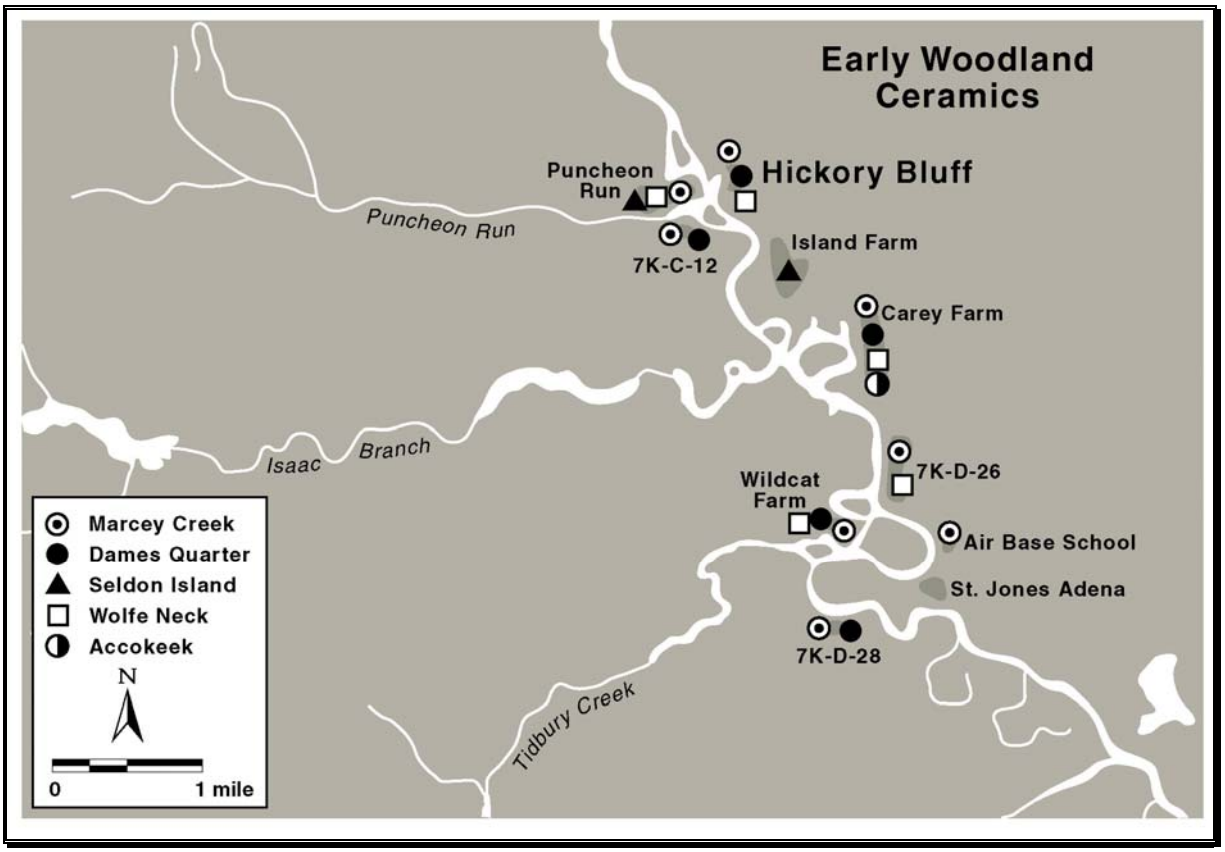

Figure 19.10 Early Woodland Ceramics Distributions on the Middle Reaches of the St. Jones River

Marcey Creek ceramics were present on eight sites. Seldon Island ceramics were identified at the Island Farm site and Puncheon Run site, and Accokeek ceramics occurred only at the Carey Farm site. Radiocarbon dates from Hickory Bluff and the Puncheon Run site (LeeDecker 1999) demonstrate a continuity of Native American occupation at these locations during the Early

Woodland period (Table 19.3). Early Woodland occupations occurred on both sides of the St. Jones River.

Table 19.3 Early Woodland Radiocarbon Dates, Middle Reaches of the St. Jones River

Site	*Provenience/ Material*	*Conventional Radiocarbon Age*	Calibrated Results
St. Jones Adena	Locus E	2330 + 80 years B.P.	370-530 B.C.
Puncheon Run	Feature 51, Level A-3	2440 + 50 years B.P.	395-780 B.C.
Puncheon Run	Feature 41, Level C-7	2460 + 50 years B.P.	400-785 B.C.
Hickory Bluff	Feature 1 charcoal	2480 + 60 years B.P.	400-795 B.C.
Puncheon Run	Feature 51, Level A-2	2530 + 50 years B.P.	425-805 B.C.
Hickory Bluff	Feature 3 charcoal	2600 + 60 years B.P.	755-835 B.C.
Hickory Bluff	Feature 98, Level 1 hickory nut	2660 + 40 years B.P.	790-885 B.C.
Hickory Bluff	Feature 3, charcoal	2790 + 60 years B.P.	815-1065 B.C.
Puncheon Run	Unit 250, Level C-3	2830 + 70 years B.P.	825-1205 B.C.
Hickory Bluff	Feature 2, Level 6 charcoal	2790 + 40 years B.P.	830-1015 B.C.
Puncheon Run	Feature 64, Level A-3	2830 + 50 years B.P.	845-1120 B.C.

Clay Tempered ceramics such as Coulbourn, Nassawango and Wilgus, were identified at the Puncheon Run site on the west side of the St. Jones River and at the five sites on the east side of the river (Hickory Bluff, Island Farm, Carey Farm, 7K-D-26, and Air Base School) (Figure 19.11). The pattern of Clay Tempered ceramics primarily on the east side of the St. Jones River may be the result of social parameters. Social parameters for site selection on the east side of the St. Jones River may have included maximizing viewshed of the river and the adjacent tributaries (i.e., Puncheon Run, Isaac Branch and Tidbury Branch) for control of transportation routes along the river or for defensive purposes. The St. Jones River may also have served as a territorial boundary between groups.

Radiocarbon dates from the Middle Woodland period were obtained for most of the large sites on the middle reaches of the St. Jones River (Table 19.4). Site 7K-D-28 contained only Hell Island sherds; both Hickory Bluff and the Puncheon Run site exhibited Popes Creek ceramics. Eight sites yielded both Mockley and Hell Island ceramics, demonstrating a continuity in Middle Woodland occupation on both sides of the St. Jones River (Figure 19.12).

The St. Jones River shows the continuation of an intensified occupation after the Early Woodland, including substantial occupation at sites such as Carey Farm and Island Farm (Custer et al. 1995b). The large implied size of some Mockley vessels, including large vessels in storage features at Carey Farm, may indicate sharing of meals by groups (or specialized social or ceremonial use). Large Middle Woodland vessels are often connected with productive wetland and riverine environments (Stewart 1998a, 1998b), thus their presence along the St. Jones River are a sign that peoples are either more permanent in their mobility or they are caching pots in anticipation of coalescence during seasonal rounds. Intensified occupation and the continuation of exchange of certain resources indicate some level in the maintenance of social prestige and controls. At Hickory Bluff, this

authority of power is not expressed in accumulation of material wealth, but is expressed as social and ideological integrations.

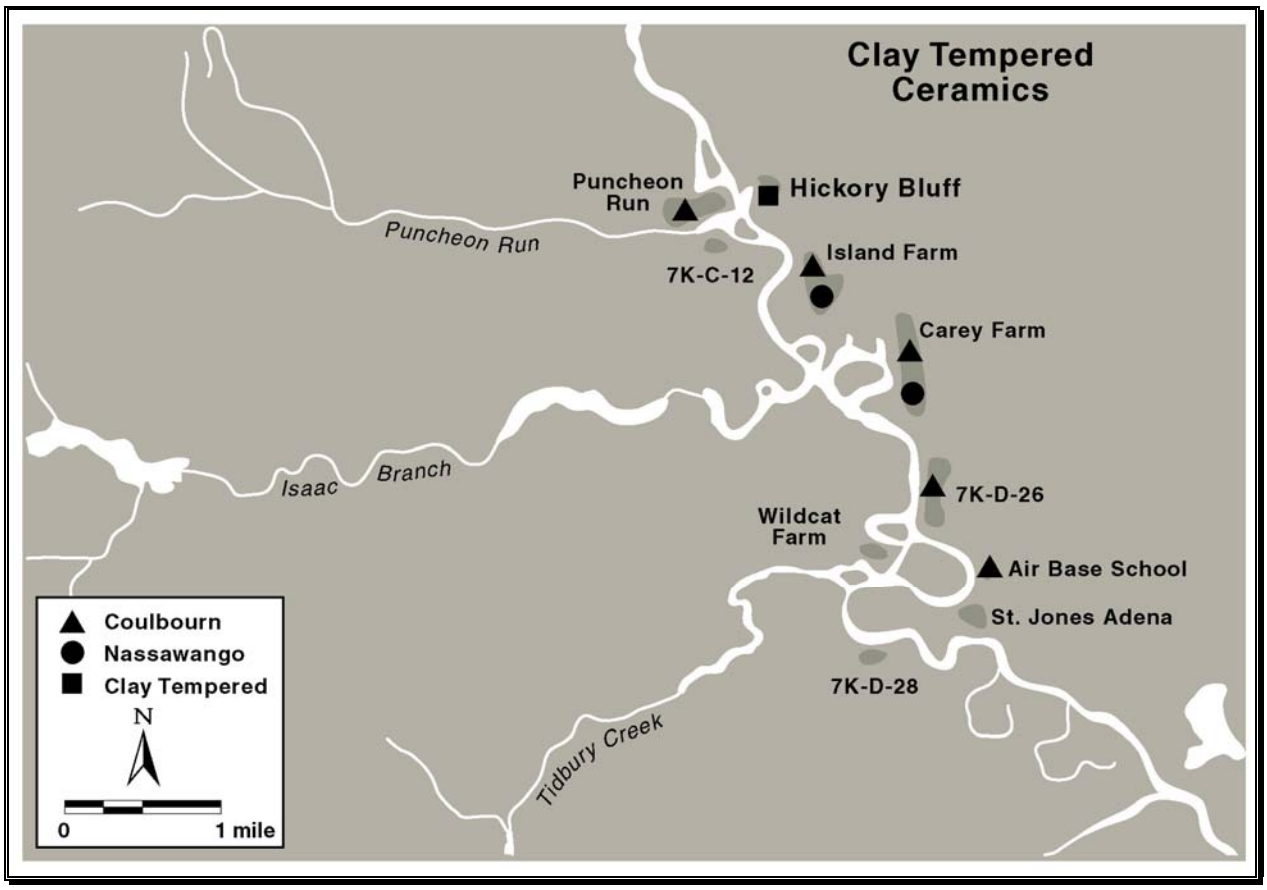

Figure 19.11 Clay Tempered Ceramics Distributions on the Middle Reaches of the St. Jones River

Late Woodland occupations, exemplified by the presence of Townsend, Killens, and Minguannan ceramics, suggested a slightly different pattern with the majority of the sites containing Townsend ceramics (Figure 19.13). Minguannan sherds occurred on only four sites (Hickory Bluff, Island Farm, Carey Farm, and 7K-D-26). The occupations defined by the presence of Minguannan ceramics are clearly associated with the east side of the St. Jones River. Only one other site in the St. Jones River drainage (site 7K-C-312) contains Minguannan ceramics and it is also located on the east side of the St. Jones River at Fork Branch. The number of sites in the St. Jones River drainage with Minguannan occupations is extremely small (n=5) suggesting very limited and geographically restricted occupations in this portion of Delmarva. It is possible that the St. Jones River represented a territorial boundary between two populations; one which the Minguannan ceramic makers did not cross. The presence of Minguannan occupations along east bluffs of the St. Jones River may also represent cultural selection based on viewshed associated with control of transportation routes or defensive posture.

Table 19.4 Middle Woodland Radiocarbon Dates, Middle Reaches of the St. Jones River

Site	*Provenience/ Material*	*Conventional Radiocarbon Age*	Calibrated Results
Island Farm	Feature 5	1100 ± 100 years B.P.	A.D. 779-1019
Carey Farm South Central	Feature 371	1240 ± 60 years B.P.	A.D. 695-880
Carey Farm	Feature 686	1260 ± 70 years B.P.	A.D. 680-875
Carey Farm South Central	Feature 465	1300 ± 60 years B.P.	A.D. 665-785
Puncheon Run	Feature 38, Level A-1	1300 ± 80 years B.P.	A.D. 615-895
Island Farm	Feature I210	1390 ± 100 years B.P.	A.D. 560-759
Carey Farm South Central	Feature 427	1680 ± 60 years B.P.	A.D. 535-635
Carey Farm South Central	Feature 358	1560 ± 50 years B.P.	A.D. 435-575
Hickory Bluff	Feature 4, Levels 4-5	1540 ± 50 years B.P.	A.D. 420-635
Hickory Bluff	Feature 87, Level 1	1550 ± 40 years B.P.	A.D. 420-610
Carey Farm South Central	Feature 608	1660 ± 50 years B.P.	A.D. 370-435
Carey Farm South Central	Feature 623	1640 ± 70 years B.P.	A.D. 370-530
Hickory Bluff	Feature 38	1650 ± 40 years B.P.	A.D. 340-530
Island Farm	Feature I34	1610 ± 120 years B.P.	A.D. 260-570
Carey Farm South Central	Feature 440	1720 ± 60 years B.P.	A.D. 245-410
Puncheon Run	Feature 66, Level A-4	1730 ± 90 years B.P.	A.D. 225-415
Puncheon Run	Feature 7a, Level A-8	1700 ± 80 years B.P.	A.D. 135-540
Puncheon Run	Feature 1b, Level A-1-3	1730 ± 90 years B.P.	A.D. 130-560
Island Farm	Feature I12	1900 ± 140 years B.P.	A.D. 91-317
Puncheon Run	Feature 3, Level B-10	1820 ± 80 years B.P.	A.D. 45-410
Puncheon Run	Feature 3, Level A-2	1820 ± 80 years B.P.	A.D. 45-410
Puncheon Run	Feature 66, Level A-2	1850 ± 60 years B.P.	A.D. 45-330
Hickory Bluff	Feature 78, Level 2 ceramic sherd residue	1850 ± 60 years B.P.	A.D. 45-330
Puncheon Run	Feature 46, Level C-1	1850 ± 70 years B.P.	A.D. 20-350
Puncheon Run	Feature 7a, Level A-5	1850 ± 70 years B.P.	A.D. 20-350
Hickory Bluff	N366 E648, Stratum B-2 ceramic sherd residue	1930 ± 40 years B.P.	5 B.C.- A.D. 140
Puncheon Run	Feature 46, Level A-2	1930 ± 40 years B.P.	5 B.C.- A.D. 140
Puncheon Run	Feature 3, Level A-6	1870 ± 100 years B.P.	50 B.C.-A.D. 405
Hickory Bluff	Context 107 ceramic sherd residue	1980 ± 40 years B.P.	55 B.C.- A.D. 95
Puncheon Run	Feature 6, Level C-6	1980 ± 60 years B.P.	75 B.C.- A.D. 160
Hickory Bluff	N405 E618, Stratum C, Level 1	2070 ± 50 years B.P.	190 B.C.- A.D. 55
Hickory Bluff	N370 E633, Stratum A, Level 2 ceramic sherd residue	2160 ± 50 years B.P.	55-375 B.C.

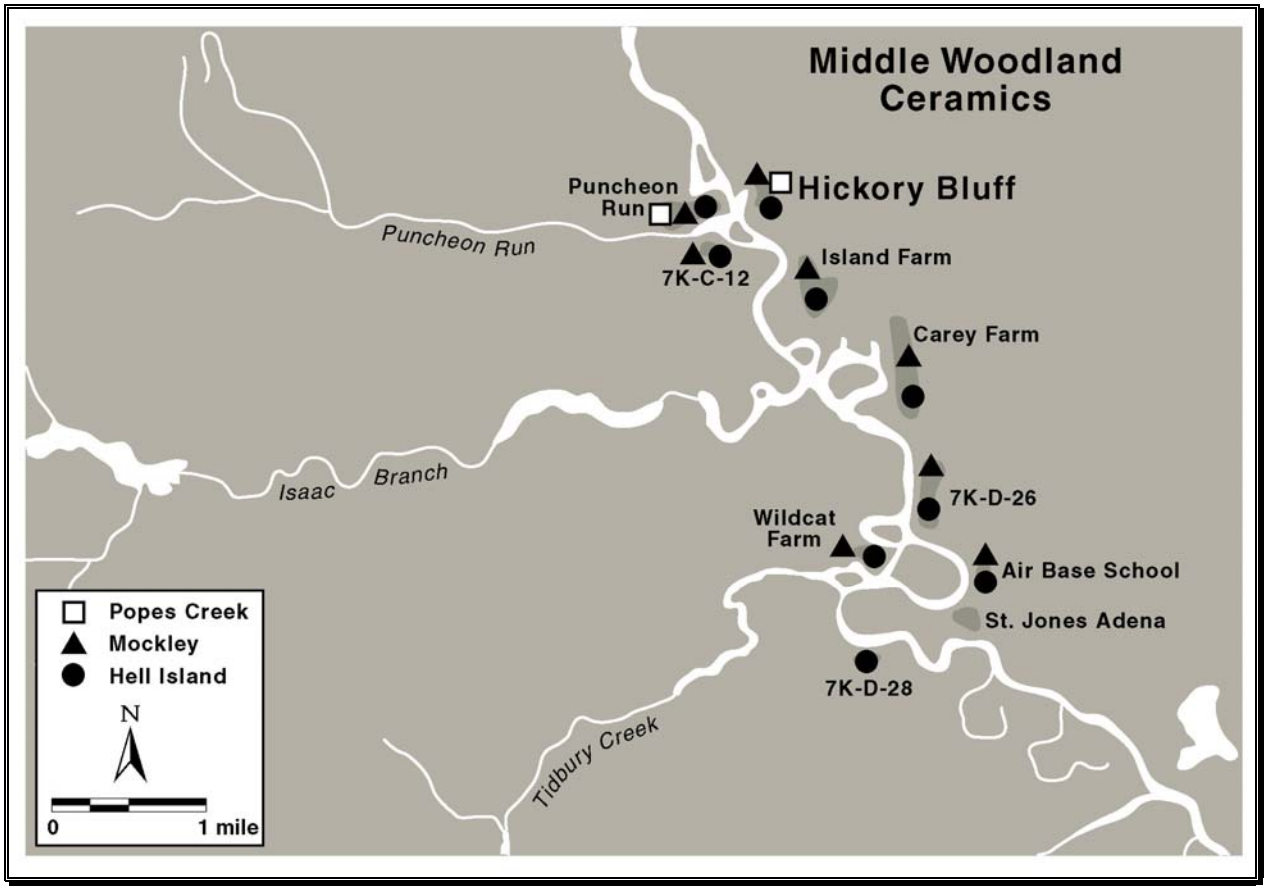

Figure 19.12 Middle Woodland Ceramics Distributions on the Middle Reaches of the St. Jones River

Radiocarbon dates from the Late Woodland period were obtained for most of the large sites on the middle reaches of the St. Jones River (Table 19.5).Earlier occupations were identified for the southern portions of the Carey Farm site; later occupations occurred at Island Farm and Puncheon Run. Occupations at Hickory Bluff were consistent through time and included the Late Woodland period, based on the radiocarbon dates. The archaeological record, in general, of the St. Jones River decreases dramatically for the Late Woodland period, likely as a consequence of changes in social and economic organization and the establishment of semi-permanent settlements towards the coastal zone.

These ten sites on the middle reaches of the St. Jones River demonstrate persistent site selection by Native American populations through time (Figure 19.14). The freshwater-brackish water transition zone of Mid-Atlantic Coastal Plain rivers is widely recognized to have been a highly productive environment for hunting and gathering peoples. In this zone, a wide range of resources co-occurred or can be found in close proximity. In that regard, a striking aspect of the St. Jones River and adjacent Delaware River systems is their compact nature. While the fresh-brackish transition of the St. Jones River estuary comprises a rich and productive environment, the nearby upper and lower reaches of the river have a completely different physiographic character and ecological make-up.

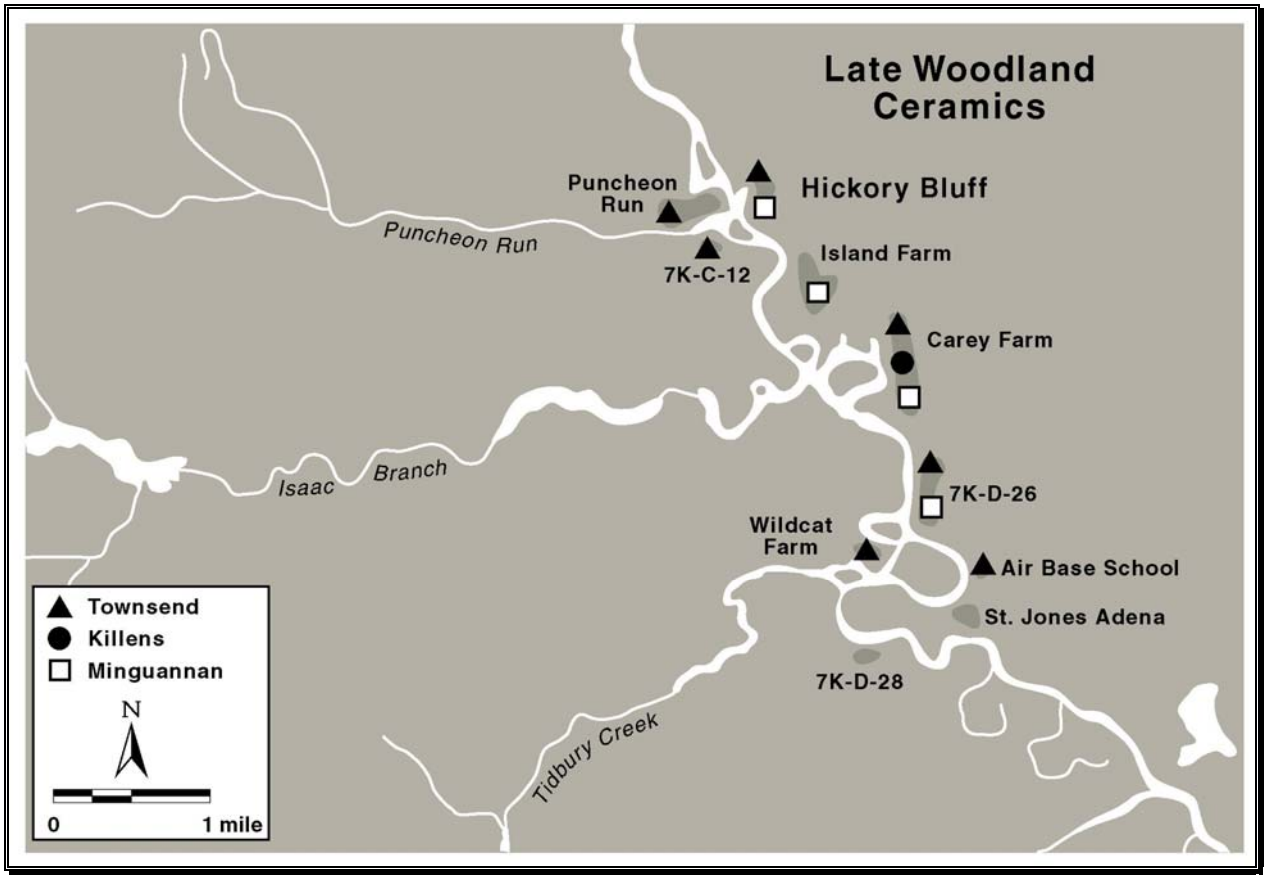

Figure 19.13 Late Woodland Ceramics Distributions on the Middle Reaches of the St. Jones River

Table 19.5 Late Woodland Radiocarbon Dates, Middle Reaches of the St. Jones River

Site	*Provenience/ Material*	*Conventional Radiocarbon Age*	Calibrated Results
Puncheon Run	Feature 30, Level A-3	310 ± 50 years B.P.	A.D. 1500-1650
Hickory Bluff	Feature 37 charcoal	320 ± 50 years B.P.	A.D. 1455-1665
Island Farm	Feature 1128	330 ± 110 years B.P.	A.D. 1440-1660
Hickory Bluff	Feature 296 hickory nut	570 ± 40 years B.P.	A.D. 1300-1425
Hickory Bluff	Feature 176 hickory nut	610 ± 40 years B.P.	A.D. 1290-1415
Carey Farm South Central	Feature 1059	860 ± 50 years B.P.	A.D. 1165-1245
Hickory Bluff	Feature 46, Level 1 white oak charcoal	850 ± 40 years B.P.	A.D. 1050-1095 and A.D. 1140-1265
Hickory Bluff	Feature 120, Level 1 hickory charcoal	920 ± 50 years B.P.	A.D. 1010-1225
Carey Farm South	Feature 2031	1010 ± 60 years B.P.	A.D. 990-1040

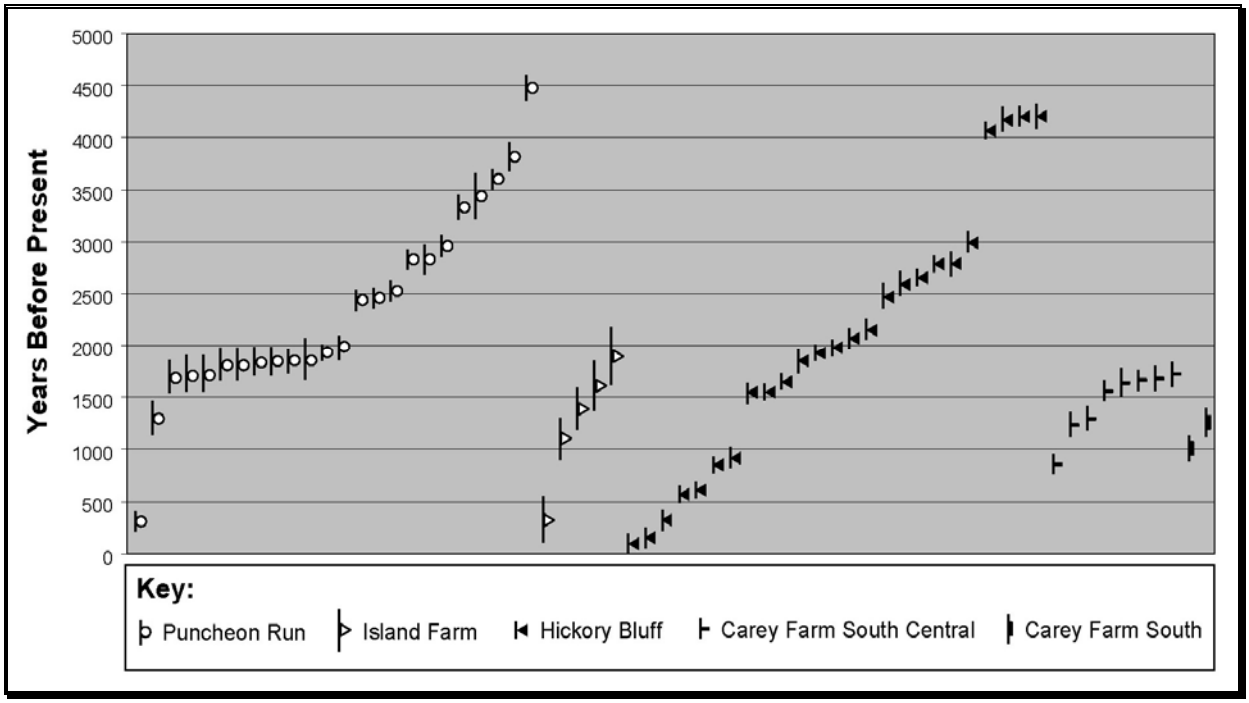

Figure 19.14 Radiocarbon Dates for the Middle Reaches of the St. Jones River

Areas along the mouth of the St. Jones River and the Delaware Bay shoreline, situated just a few miles downstream, are characterized by expansive salt marshes. By contrast, prior to historic land clearing, areas west of present-day Dover would have been covered in mixed deciduous forests drained by spring-fed low order steams. These divergent settings would have hosted distinctly different plant communities and game species populations. The proximity of three very different and productive environmental zones; 1) salt marsh/ bay shore, 2) freshwater-brackish tidal estuary, and 3) interior forests/fresh water streams, would have provided seasonal diversity and subsistence stability for Native American groups in the area. Assuming a catchment area or foraging radii of 5 km for small Woodland I populations (Custer 1994), these three environmental zones would be present in the catchment areas for all of the sites. Because of the close proximity of the ten sites, individual catchment areas greatly overlap (Figure 19.15).

The occupations of these ten sites may reflect seasonal or annual reoccupation, contemporaneous occupation or a combination of both. Occupations may reflect individual nuclear family micro-band camps or larger, aggregated group macro-band camps (Custer 1994). Seasonal or annual reoccupation by individual nuclear families would create sequential use of the associated catchment areas, providing less intensive depletion of the subsistence resources within the foraging radius. Contemporaneous occupations, suggesting larger population aggregates (i.e., more than one individual nuclear family), would indicate more intense resource utilization in the catchment area. Contemporaneous occupations may include shared subsistence activities as well as shared social and ritual functions.

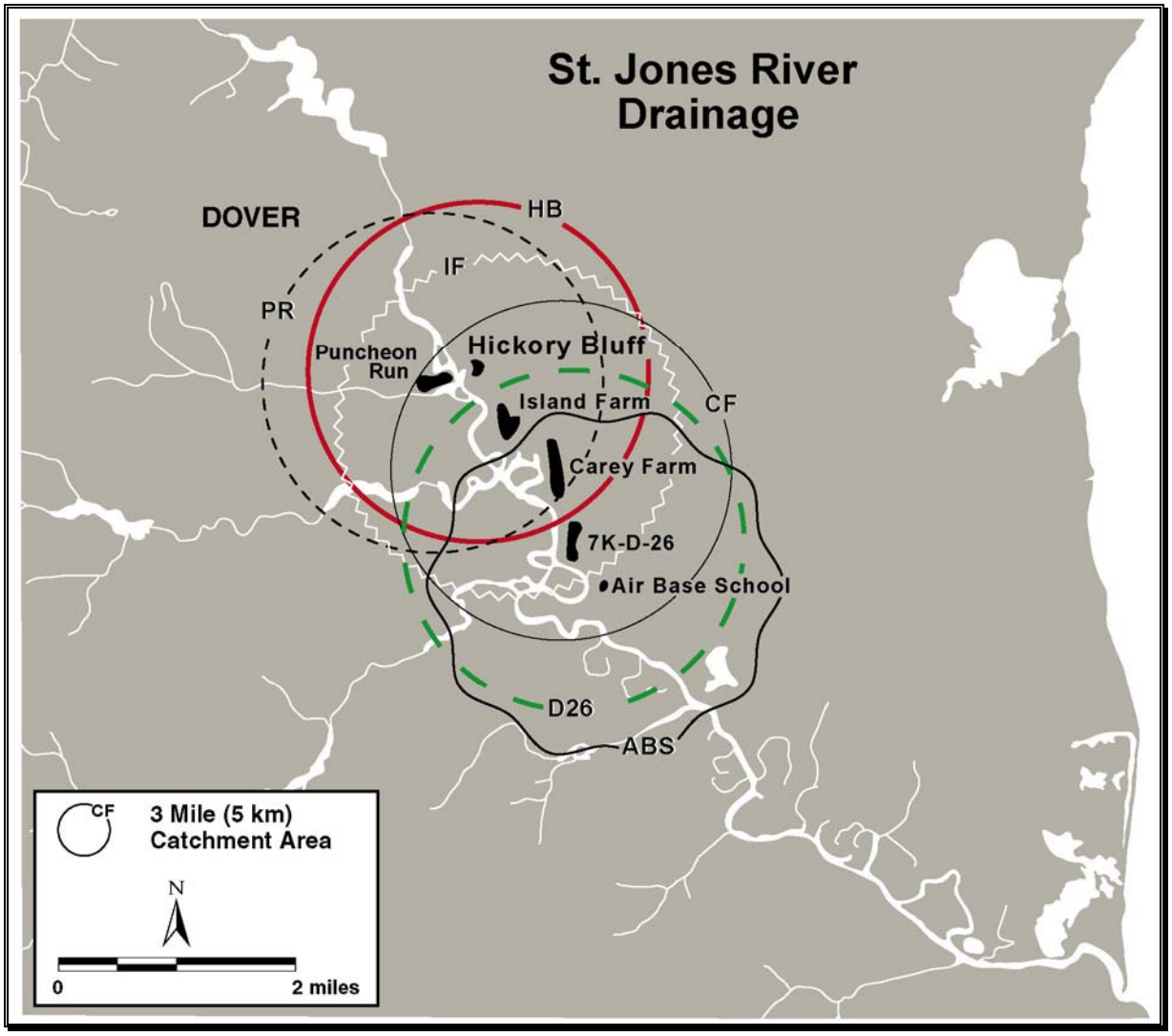

Figure 19.15 Proposed Individual Catchment Areas for Sites on the Middle Reaches of the St. Jones River

Contemporaneous occupations are difficult to ascertain given the broad time frames characterized by temporally diagnostic artifacts, such as projectile points and ceramics, and the parameters of the radiocarbon dating system. However, based on the data available for the sites on the middle reaches of the St. Jones River, some contemporaneous occupations may be suggested. Several radiocarbon date clusters are apparent for the Early and Middle Woodland periods (Figure 19.16). Contemporaneous occupations may have occurred at Hickory Bluff and Puncheon Run between 400-795 B.C.; Hickory Bluff and Puncheon Run between 5 B.C.- A.D. 140; Hickory Bluff and Puncheon Run between A.D. 45-410; Hickory Bluff and Carey Farm between A.D. 340-530; and Carey Farm and Puncheon Run between A.D. 615-895. If, in fact, contemporaneous occupations occurred along the St. Jones River, the settlement pattern may represent a dispersed occupation as documented in ethnohistorical times (Section 5.0) where individual nuclear families or small groups were located along the river banks for several miles (i.e., ceramic clustering in Figure 19.1, Figure 19.2, Figure 19.3 and Figure 19.4). The archaeological constraints of defining site

boundaries in conjunction with specific construction projects may not reflect Native American settlement patterning in this case.

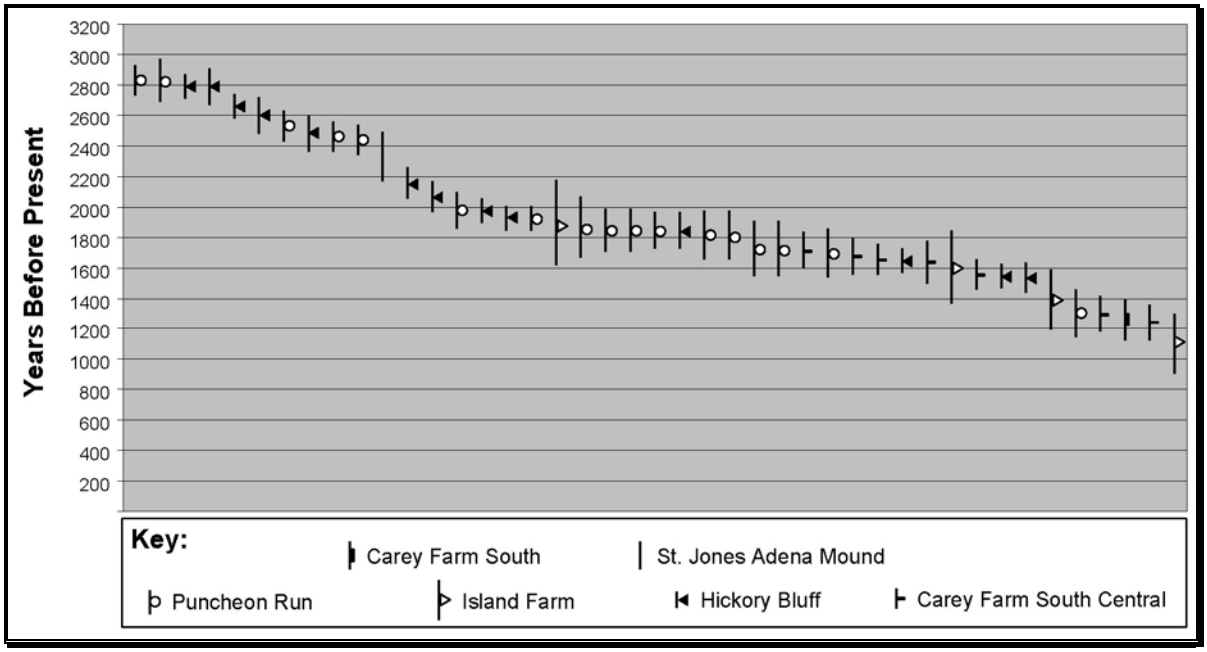

Figure 19.16 Early to Middle Woodland Radiocarbon Dates from Sites on the Middle Reaches of the St. Jones River

THE DELMARVA ADENA ON THE ST. JONES RIVER

The Delmarva Adena Complex is defined by the presence of elaborate and exotic grave goods associated with multiple burials from the Early Woodland period. Burial types include some primary interments, but are mostly secondary bundle burials and cremations. Associated artifacts include large ovate and stemmed bifaces manufactured from cryptocrystalline lithic materials with sources in Ohio (including Flint Ridge chalcedony), copper beads and pendants most likely from sources in the Great Lakes, blocked and tubular pipes, drilled animal teeth ornaments, shell beads, slate gorgets, paint cups, and red ochre (Ford 1976; Thomas 1976; Custer 1989). The mortuary sites in the Delmarva consist of the Killens Pond site (7K-E-3), the Frederica site (7K-F-2), the Sandy Hill Adena site (18DO30), the Nassawango Adena site (18WO23), and the St. Jones Adena site (7K-D-1) (Figure 19.17). Non-mortuary habitation sites were identified by the presence of Adena notched points, usually made from high-quality Flint Ridge chert/chalcedony from central Ohio; isolated exotic artifacts identical to those associated with mortuary locations, such as pendants, gorgets, and pipes; and Clay Tempered ceramics, such as Coulbourn, Nassawango, and Wilgus (Custer 1989: 173; Dent 1995). The Delmarva Adena Complex generally dates from about 500 B.C.-A.D. 100 based on radiocarbon dates from mortuary sites (Dent 1995: 233) and sites containing Clay Tempered ceramics (Custer 1989: 173). The Adena manifestation in the Midwest dates from 1000 B.C. to A.D. 200 (Dragoo 1976).

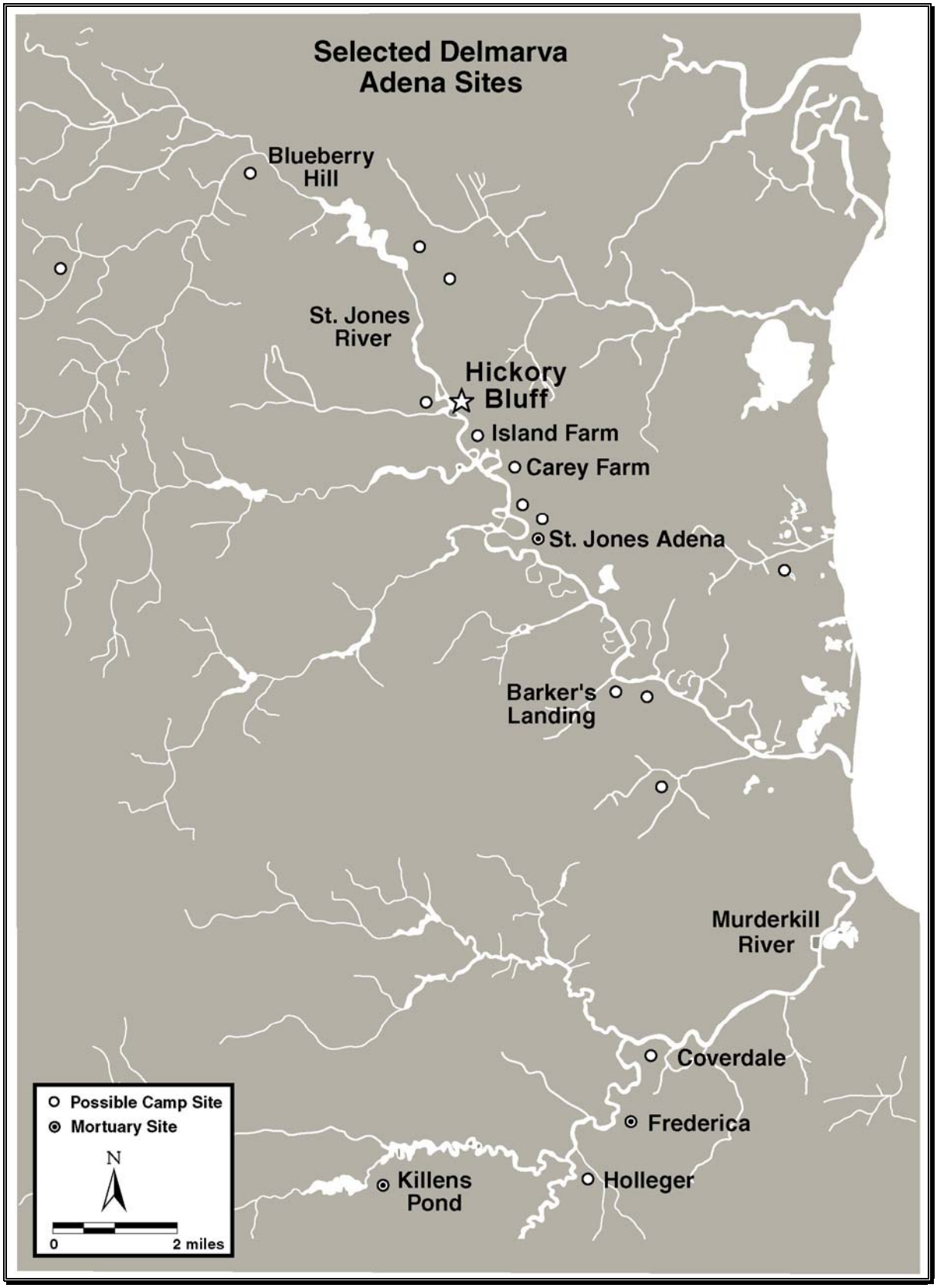

Figure 19.17 Selected Delmarva Adena Sites on the St. Jones and Murderkill Rivers

The St. Jones Adena site (7K-D-1) is located on the east side of the St. Jones River, north of the confluence with Cypress Branch. This site consisted of the remains of at least 50 individuals (both adults and sub-adults) in eight discrete locations and represented dry bone cremations and secondary burials indicated by unburned disarticulated bone (Thomas 1976; Custer 1989; Dent 1995). Associated grave goods included bifacial blades and stemmed points of local and non-local lithic materials, tubular pipes, copper and shell beads, stone and copper gorgets, drilled animal teeth, stone paint cups, faceted hematite and mica (Thomas 1976; Custer 1989; Dent 1995). Large bifaces of local and nonlocal materials were associated with three females and two males interred at Locus E. Some of these bifaces may have been ritually broken. A radiocarbon date of 2330 ± 80 years B.P. was obtained from Locus E that contained a wider variety of exotic lithic materials and relatively fewer copper artifacts (Thomas 1976). Two caches of grave goods were associated with two loci (Loci G and H) whereas artifacts associated with other burials were few. The largest frequency of artifacts was associated with Locus G, a location with 10 distinct clusters of human remains. Red ochre covered many artifacts (Custer 1989) and a cache of 170 bifaces, mostly made of Flint Ridge chalcedony, was also associated (Thomas 1976; Custer 1989). Social status was inferred by the presence of substantially more artifacts associated with secondary burials whereas fewer artifacts were co-located with cremations. Age or gender did not necessarily define social status because both females and sub-adults were interred in secondary burials with numerous artifacts (Custer 1989). This patterning of cremations and secondary burials is similar to patterning identified in Adena Mounds in Kentucky (Clay 1986).

Artifact assemblages from the Native American sites north of the St. Jones Adena site suggest specific occupations associated with the Delmarva Adena Complex. Flint Ridge chert/chalcedony artifacts recovered from these sites included debitage at the Air Base School site (Thomas and Payne 1996), a Snyder's corner-notched point from the South Central Area at Carey Farm (Custer et al. 1995b), and debitage (Liebeknecht et al. 1997) and four projectile point fragments from Hickory Bluff. Seven Adena projectile points were also recovered from Hickory Bluff. The presence of the slate ulu, two broken slate gorgets, and mica fragments at Hickory Bluff are also suggestive of the Adena manifestation although direct association with dated features was not established. Mica was also recorded at site 7K-D-2 (Thomas and Payne 1996). All of the habitation sites on the east side of the St. Jones River contained Clay Tempered ceramics (Hickory Bluff, Island Farm, Carey Farm, 7K-D-26, and Air Base School). Preliminary analysis of the Puncheon Run artifact assemblage indicates the presence of Coulbourn ceramics on the west side of the St. Jones River (Wise and Wall 2001). Nassawango ceramics were identified at both Island Farm and Carey Farm (Custer et al. 1995b).

Radiocarbon dates from Hickory Bluff, Carey Farm, Island Farm, and the St. Jones Adena site bracket a series of probable Adena occupations on the St. Jones River (Table 19.5). The residues from two Clay Tempered ceramic sherds at Hickory Bluff have yielded radiocarbon dates of 1930 + 40 years B.P. and 1980 + 40 years B.P.; both dates securely within the Adena time frame. A date of 1650 + 40 years B.P. was obtained from Feature 38 at Hickory Bluff, which contained Clay Tempered ceramics; this date is later than expected for the Delmarva Adena Complex. Two of the three radiocarbon dates from Carey Farm were associated with features containing both Coulbourn and Mockley ceramics. The quantities of Coulbourn and Mockley sherds from the two features was sufficient to identify individual vessels and indicated simultaneous use of two ceramic types (Custer et al. 1995b: 129). The third Carey Farm date from a feature containing Coulbourn ceramics was

also later than expected. The Island Farm radiocarbon date for Feature I210, which contained Nassawango sherds, was considered inaccurate because it is a later time frame than is usually associated with these ceramics (Custer et al. 1995b:243).

Table 19.6 Adena Radiocarbon Dates in the Middle Reaches of the St. Jones River

Site	*Sample Material*	*Conventional Radiocarbon Age*	Calibrated Results
Hickory Bluff	Feature 38/ Clay Tempered ceramics	1650 ± 40 years B.P.	A.D. 340-530
	Clay Tempered sherd - ceramic residue	1930 ± 40 years B.P.	5 B.C. - A.D. 140
	Clay Tempered sherd – ceramic residue	1980 ± 40 years B.P.	55 B.C. – A.D. 95
Island Farm	Feature I210/ Nassawango sherds	1390 ± 100 years B.P.	A.D. 560-759
Carey Farm	Feature 686/ Coulbourn sherds	1260 ± 70 years B.P.	A.D. 680-875
	Feature 358/ Coulbourn / Mockley sherds	1560 ± 50 years B.P.	A.D. 435-575
	Feature 427/ Coulbourn/ Mockley sherds	1630 ± 60 years B.P.	A.D. 535-635
St. Jones Adena	Locus E	2330 ± 80 years B.P.	530-370 B.C.

Based on the single radiocarbon date from the St. Jones Adena site, the placement and use of the mortuary site occurred around 2330 + 80 years B.P.; however, the radiocarbon dates associated with Clay Tempered ceramics from the other Native American sites suggest a later occupation along the St. Jones River. The single date from the St. Jones Adena site may not represent the duration ofuse at the site however. A radiocarbon date of 1615 ± 45 years B.P. (A.D. 335) was obtained for the Frederica mortuary site on the Murderkill River south of the St. Jones River drainage (Figure 19.13) indicating a later Delmarva Adena occupation in the vicinity.

In examining the Delmarva Adena, Hickory Bluff is one of several key sites along the St. Jones River as indicated by the distribution of diagnostic artifacts and radiocarbon dates. Archaeological distributions along the St Jones River point to intensification of settlement, local resource use, and localized expression of cultural traits, indicative of an interconnected social and ceremonial conditioned landscape. Together with a cluster of other key sites, Hickory Bluff occurs upstream from the St. Jones Adena site, a symbolic mortuary site. Although contemporaneity of occupation is difficult to ascertain, Adena occupation was spatially extensive and likely consisted of groups of extended families, as well as occasional movement and coalescence along the river. These groups would likely have been frequently interacting along pedestrian trails and through canoe navigation. Given the operation of some level of social and ceremonial organization to the St. Jones River landscape, it is likely that there were certain protocols, and thus some level of distinction between members of society.

If material assemblages from sites like Hickory Bluff are an indication of the normal level of external influence and control, it would follow that hierarchical authority by individuals and other groups was not highly structured. There is little evidence from Hickory Bluff to suggest individuals had power that was continually controlled and exercised through accumulation of material wealth.

Hickory Bluff and the St. Jones Adena site therefore would have functioned within a culture that placed increased, albeit rare, attention on expression through prestige goods, with specific meanings in Adena value systems. While ultimate hierarchical control systems are likely in place, they are not embedded controls in movement of material goods, but rather, these are likely mostly ideological, with rare exchanges of exotic materials, and often only in specialized, ceremonial contexts. While material accumulations were rare, some prestige and influence of individuals would likely be present given the intensification of occupation along the St. Jones River, occasional linkages with Midwestern groups, more common connections with groups to the west and southwest, and the organization of cooperative effort of peoples to construct and maintain mortuary centers. Local prestige would have been more commonly manifest through ideology and ceremonial behaviors.