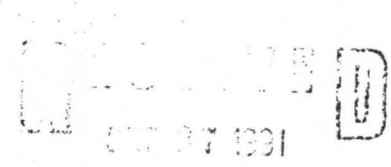


United States Department of the Interior  
National Park Service

# National Register of Historic Places Multiple Property Documentation Form



NATIONAL  
REGISTER

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

**A. Name of Multiple Property Listing**

Prehistoric Human Adaptation to the Coastal Plain Environment of Anne Arundel County, Maryland

**B. Associated Historic Contexts**

The PaleoIndian Stage in Anne Arundel County

The Archaic Stage in Anne Arundel County

The Woodland Stage in Anne Arundel County

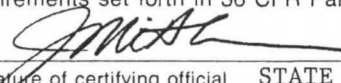
**C. Geographical Data**

Boundaries of Anne Arundel County, Maryland

See continuation sheet

**D. Certification**

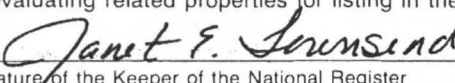
As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

  
Signature of certifying official STATE HISTORIC PRESERVATION OFFICER

9/26/91  
Date

State or Federal agency and bureau

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

  
for Signature of the Keeper of the National Register

11-8-91  
Date

---

**E. Statement of Historic Contexts**

---

Discuss each historic context listed in Section B.

See Continuation Sheet No. 1

See continuation sheet No. 1

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   1  

OUTLINE OF HISTORIC CONTEXT

- A. INTRODUCTION
- B. PALEOINDIAN STAGE
- C. ARCHAIC STAGE
- D. WOODLAND STAGE

INTRODUCTION

Anne Arundel County lies within the Coastal Plain Province of the Western Shore of Maryland. The County is bounded on the North by the Patapsco River, and Baltimore and Howard Counties, Maryland; on the west by the Patuxent River drainage and Prince George's County, Maryland; on the south by Calvert County, Maryland and on the east by the Chesapeake Bay. The State of Maryland is located within the larger Middle Atlantic culture area. This culture area is traditionally defined as extending from the Dismal Swamp on the Virginia/North Carolina border north to the Hudson estuary in New York, and from the Appalachian mountains east to the Atlantic Ocean (Willey 1966:248, figure 5-1). (See figure 1).

Discussion of Native American prehistoric cultural contexts within Anne Arundel county will include descriptions of sites, time periods, and cultural artifacts located within the county and in areas outside the county, both in the State of Maryland and in the Eastern United States. The following discussion of Anne Arundel County cultural contexts includes such a diffuse area because these contexts are not unique to the county but are linked to similar ones both within the State of Maryland and throughout the eastern United States.

Presentation of cultural context information within this text will employ several terms used by archaeologists to define historical and developmental concepts. These terms will be defined here.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   2  

Basic archaeological units are the component and the phase (Willey and Phillips 1958:21-24). A component is the discrete cultural element[s] comprising a phase (McKern 1939:308, Willey and Phillips 1958:21, Willey and Sabloff 1980:106). For example, artifacts making up the assemblage of the Selby Bay phase would comprise a component of a site, while those of the Little Round Bay phase would comprise another component of a site. A site may be either a single component site or a multi-component site. An archaeological phase is a unit, whose components (or traits) distinguish it from all other units preceding or following it, whether these units occur within the same culture or other cultures. Phases are limited chronologically, generally to a brief episode of time, and spatially, to a region or an area. A phase may be manifested at a site as a short term occupation restricted to one level. Or, the phase may appear on a number of sites within a region as either long or short term occupations (Kidder, Jennings, and Shook 1946:6, Willey and Phillips 1958:22, Willey and Sabloff 1980:106-107). Phases generally refer to an interval of cultural development in which distinctive behavioral characteristics or artifact styles occur. For example, although pottery is manufactured during both the Accokeek phase and the Popes Creek phase in the Middle Atlantic Region, the types of pottery manufactured are different from one another. The pottery types are the distinctive traits or temporal markers of each phase.

Willey and Phillips (1958:29-31) define traditions as integrative archaeological units because they are the most effective means for synthesizing phases spread over a broad geographical area. Traditions integrate similar elements or styles over a wide geographic area. However, a tradition deals with styles which persist in a region over a long period of time. Several phases may be incorporated within a tradition. (Willey 1945:55, Willey and Phillips 1958:34-38, Willey and Sabloff 1980:174-175). For example, the Bifurcate Tradition of the Middle Atlantic Region is defined by the presence of bifurcate projectile points. Three different types of projectile points which are bifurcated (or notched on the base) appear during three phases of the Early Archaic Period (Early Archaic III, IV, and V). This projectile style persists over 6,000 years. However, because of changes in behavioral patterns as well as changes in other aspects of the artifact assemblage, the span of 6,000 years is broken down into three separate phases despite the similarity in projectile point style throughout the continuum.

See Continuation Sheet No. 3

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   3  

The term stage denotes a developmental sequence within a maximum archaeological unit. Maximum units are either cultures or civilizations (Willey and Phillips 1958:47-48). Within the northeastern United States three developmental stages are generally recognized. These stages include the PaleoIndian Stage (Willey and Sabloff 1980:212), the Archaic Stage, and the Woodland Stage. In addition, the Archaic and Woodland developmental stages of the northeast have been further subdivided into periods (Schmitt 1952). The Archaic Stage includes the Early, Middle, and Late (or Terminal) Archaic Periods. And the Woodland Stage includes the Early, Middle, and Late Woodland Periods. Table 1 presents the chronology of the Middle Atlantic Region.

THE PALEOINDIAN STAGE CA. 13,000-7500 B.C.

The PaleoIndian Stage is poorly represented in Anne Arundel County and the State of Maryland. Only one site within the state is known to have subsurface remains of PaleoIndian Components. This is the Higgins Site in northern Anne Arundel County. All other known occurrences of PaleoIndian components within the county consist of fluted points, found out of context, on the surface of multi-component sites (Brown 1979). The scarcity of PaleoIndian sites within Anne Arundel county, as well as in the entire Coastal Plain Province, is the result of environmental changes which occurred in the Chesapeake Bay region during the retreat of the Wisconsin ice sheet. Retreat of this ice sheet resulted in global sea level rise and eventual formation of the Chesapeake Bay through the drowning of the ancient bed of the Susquehanna River and the lower reaches of her tributaries. PaleoIndian sites located along the Susquehanna River, below the present mouth, were inundated during this process, as were sites located along the river's tributaries (Kraft 1971).

Environment

The PaleoIndian Stage in the Middle Atlantic occurred during an era of major climatic changes. Between 14,000 and 9,000 B.C. (the terminal Wisconsin glacial episode) there was rapid rise in sea level associated with glacial retreat. The lower Susquehanna River, which occupied the present deep channel of the Chesapeake Bay, began to be inundated with tidal salt waters (Kraft 1971).

See Continuation Sheet No. 4

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number     E     Page     4    

Prior to 10,700 B.C., the Wisconsin glacial episode was characterized by a cold to cool wet climate (Carbone 1976:104), which supported open boreal forests of spruce and pine (Whitehead 1972:307-308). The beginning of the Late Wisconsin glacial episode, around 10,700 B.C. was signaled by a warming trend which continued until 8,500 B.C. (Carbone 1976:105-106 and 120). Boreal forests persisted through the episode (Edwards and Merrill 1977:figure 16), mixed deciduous forests were located along river bottoms, while inland areas supported a mixture of grassland and deciduous forest (Carbone 1976:185). The mixed vegetation supported Pleistocene megafauna such as the mammoth, Mastodon, and ground sloth. Other species in the Middle Atlantic included bison, muskoxen, horse, peccaries, moose, giant beaver, grizzly and other species of bear, as well as white-tailed deer (Guilday 1982:23).

After ca. 8500 B.C. climate conditions again changed. While the previous Late Wisconsin episode had been cool and wet, the succeeding Preboreal/Boreal climatic episode (8500-6500 B.C.) was cooler and drier (Carbone 1976:121). Continued rise of sea level during this episode resulted in the complete inundation of the Susquehanna River to its modern mouth by 7000 B.C., an estuary formed in the present Chesapeake Bay area, extending from the lower Bay to the area near present day Kent Island/Annapolis (Steponaitis 1980:5). Vegetation in the region was probably deciduous forest with hemlock and pine inclusions (Harrison et. al. 1965:220, Whitehead 1972:308, Edwards and Merrill 1977:figure 17, Steponaitis 1983:39). During this episode Pleistocene megafauna began to be replaced by modern temperate climate fauna. This shift was completed by 7200 B.C. (Guilday 1967:232).

PaleoIndian Stage Chronology and Technology

The PaleoIndian Stage is divided into three phases based on the typology of projectile points recovered from PaleoIndian sites. Gardner (1974), based on his work at the Flint Run Complex in Virginia, divides the PaleoIndian Stage into three phases: Fluted, Corner-Notched, and Side-Notched. The Fluted phase is further subdivided into three sub-phases: Clovis, Middle-Paleo, and Hardaway-Dalton. Gardner considers the similarity of the lithic assemblages and manufacturing technology associated with the three point types, and continued emphasis on hunting, as indicative of long term cultural continuity through all three phases.

See Continuation Sheet No. 5

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   5  

Steponaitis (1982:12) argues that the Corner-Notched and Side-Notched phases, as defined by Gardner, should be included as phases within the Early Archaic Period of the Middle Atlantic region. Steponaitis notes changes in the environment, settlement patterns, population size, and the tool kit as justification for this assignment. In Steponaitis's model, Gardner's three sub-phases (Clovis, Middle-Paleo, and Hardaway-Dalton) are recognized as phases within the PaleoIndian Stage. The Steponaitis model will be utilized here as much of her research includes sites within Anne Arundel County (see table 1).

The Clovis phase is marked by the presence of the Eastern Clovis projectile point, a narrow, fluted, lanceolate biface with a concave base, partial edge grinding, lateral pressure retouch, and fluting scars (Ritchie 1961:21, Steponaitis 1980:12, Hughes 1980:32). Gardner (1974) suggests that this phase occurred prior to 9000 B.C. McNett has reported four radiocarbon dates for the Shawnee-Minisink Site in New Jersey associated with Clovis components. Three of these dates: 9100±1000 B.C., 8640±600 B.C., 8880 ± 600 B.C. correlate reasonably well with Gardner's pre-9000 B.C. estimate for this phase. The fourth date 7360 ± 1000 B.C. is possibly too late for the phase (McNett, et. al. 1977:284).

The Middle-Paleo phase is marked by a fluted point which is "...smaller, thinner, and more markedly fluted than the clovis" (Gardner 1974:15). This point probably dates to the period 9000 through 8000 B.C. It occurs stratigraphically above the Clovis component at the Thunderbird Site in Virginia. Recent surface collections at Paw Paw Cove in Talbot County, Maryland have recovered numerous small fluted points which are similar to Middle-Paleo points. However, Lowery (1989:161) notes that because there are few large cryptocrystalline cobbles in the area, fluted points manufactured from local materials tend to be smaller than the Clovis fluted points. Lowery cautions that points previously attributed to the Middle-Paleo phase, based on their smaller size, may actually be contemporaneous with Clovis phase fluted points.

The Hardaway-Dalton phase is marked by a roughly triangular point, similar to the Dalton point, with a deeply concave base and prominent ears. Fluting on this point is very reduced in comparison to earlier fluted points (Coe 1964:64, Gardner 1974:15). Gardner (1974) estimates the time period for this phase as between 8000 and 7000 B.C. This estimate is based on correlation of data

See Continuation Sheet No. 6

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number     E     Page     6    

from the Flint Run Complex in Virginia with radiocarbon dates from Graham Cave in Missouri (7750 ± 500 B.C., 7520 ± 400 B.C., 7340 ± 300 B.C., and 6880 ± 500 B.C.) and from Modoc Rock Shelter in Illinois (7922 ± 390 B.C.). (Crane 1956:665-667, Crane and Griffin 1968:84-88).

The tool kit of the PaleoIndian was adapted primarily to a hunting economy. Besides the fluted points discussed above, the kit included scrapers, graters, denticulates, bruins, hammerstones, utilized flakes, and knives all associated with the processing of faunal resources (Ritchie 1969:3, Kinsey 1972:327-330, Funk 1972:17-21, Gardner 1974:5, Custer 1984a). However, some of these tools could also have been used to process floral material and fish.

Subsistence-Settlement

Human occupation of Anne Arundel County began possibly as early as 13,000 B.C. (Steponaitis 1980:12). Funk (1978:16) argues that prior to circa 12,000 B.C. occupation of areas north of the Middle Atlantic region was impossible due to the presence of glacial ice, although PaleoIndian hunters were probably established south of the ice sheet.

Traditionally PaleoIndian subsistence was believed to have depended primarily on the hunting of Pleistocene megafauna (Willey 1966, Griffin 1977). Recent evidence suggests that south of central Pennsylvania/New Jersey, in the Middle Atlantic region, Paleo populations probably focused on hunting white tailed deer (Gardner 1980:19-20). Ritchie (1957:7) suggests that subsistence strategies possibly included foraging for plants and hunting for small mammals also, although evidence for this practice is meager.

Climatic changes during the Preboreal/Boreal climatic episode (8500-6500 B.C.) directly affected the subsistence strategies of the Middle-Paleo (9000-8000 B.C.) and Hardaway-Dalton phases (8000-7000 B.C.). Subsistence strategies tended to be more diverse during these two phases. The climate of the Preboreal/Boreal episode was cooler and drier than the previous climatic episode (Carbone 1976:121). Continued sea level rise during the Middle-Paleo and Hardaway-Dalton phases formed estuarine areas in formerly riverine areas of the Susquehanna River (Steponaitis 1980:5). By 7200 B.C. Pleistocene Megafauna had been completely replaced by

See Continuation Sheet No. 7

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   7  

modern temperate species (Guilday 1967:232). Excavation at Shawnee-Minisink in New Jersey has yielded evidence of fishing and plant gathering. Fish bones and the remains of hawthorne plum pits, hackberry, blackberry, grape, Chenopodium, Acalypha, Amaranth, Physalis, ragweed, and sedge were recovered in direct association with a hearth radiocarbon dated to 8640 ± 300 B.C. (Kaufman and Dent 1978:5).

Settlement patterns of Paleo populations within Anne Arundel County are unknown at present. Evidence from sites within the Middle Atlantic region offer analogies as to what types of settlement patterns may have been utilized in the county. Because PaleoIndian populations lacked the ability to store food stuffs over long periods of time, groups of hunters changed location at various times throughout the year in order to utilize available resources. The movements of these groups would have coincided with the seasonal availability of resources. Important to successful utilization of resources was the availability of cryptocrystalline lithic material from which tools were manufactured. Gardner (1977:258) suggests that the location of lithic resources provided fixed points around which the rest of the seasonal round revolved.

Gardner has identified six possible types of sites associated with PaleoIndian populations at the Flint Run Complex in Virginia (Gardner 1974:19-23, 42-44, 1977, 1979). The largest of these sites are base camps, the main locus of habitation. Base camps are identified by the variety within the artifact assemblage present at the site. Non-random lithic distribution occurs indicating discrete activity areas. Pits and post molds are some times present indicating that the site was occupied for an extended period of time. Base camps may have been occupied seasonally by aggregates of several bands. Gardner found that the largest base camps were quarry base camps. Extensive tool manufacture in the form of late-stage lithic reduction occurred at these sites. Examples of base camps include the Thunderbird site of the Flint Run Complex, Virginia and the Shoop site in Pennsylvania (Gardner 1974, Witthoft 1952). Smaller PaleoIndian sites may represent special purpose sites occupied by smaller groups for shorter periods of time. At Flint Run, Gardner (1974:42-44, 1977, 1978:8-9) identified quarry sites and quarry reduction stations, base camp maintenance stations, and outlying hunting sites as special purpose sites within the settlement pattern. Quarry sites are close to cryptocrystalline rock sources, large amounts of lithic debris are present but there is an absence of finished tools on

See Continuation Sheet No. 8

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   8  

these sites. Distance to water was generally not a determining factor in the location of these sites.

Unlike many quarry stations, quarry reduction stations were located near water. Artifacts recovered from these sites generally include waste flakes and rejected bifaces. The debris indicates that large cores or bifaces collected at the quarry were worked into tools at quarry reduction sites. Base camp maintenance stations were located 10 to 15 kilometer from the base camp. Game was brought to the site and processed there. The artifact assemblage recovered includes flake tools and other cutting tools. Outlying hunting sites have artifact assemblages similar to the base camp maintenance sites, but there are fewer of these artifacts present. Outlying hunting stations were located close to bogs, swamps and other poorly drained areas within 40 kilometers of the base camp (Gardner 1974, 1977, and 1979; Custer 1984a:52-53).

Custer (1984a) postulates a cyclical seasonal subsistence round for the Delmarva Peninsula. This model began at the Delaware Chalcedony Complex where lithic materials were procured from quarry sites. Bands of PaleoIndians then moved inland and south down the peninsula exploiting resources of the inland swamps and other areas until they were depleted. As the need to replenish their tool kits arose, the bands would return to the quarry areas. It is possible that bands in Anne Arundel County followed a seasonal round similar to that suggested by Custer. A possible source of lithic material utilized by populations following the seasonal round was the Magothy Quartzite Quarry Site (18AN760) located in northern Anne Arundel County near the headwaters of the Magothy River. Bands could have procured lithic material at this site and then either exploited the riverine resources located close by or migrated toward the coast of the Chesapeake Bay to the east, the estuarine zone of the Magothy to the south, or the inland/Piedmont area to the west.

Demographics, Political Organization, and Religion

Information regarding population size during the PaleoIndian Stage is not available for Anne Arundel County or for other areas of the eastern United States. However, future excavation may reveal information regarding the overall population density within the county as well as information concerning health and mortality.

See Continuation Sheet No. 9

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   9  

---

As there is no information regarding population size during the PaleoIndian Stage, little can be said about political organization or religious beliefs. However, the use of ethnographic analogy (that is comparing modern hunter and gatherer population to hypothetical PaleoIndian populations) allows us to suggest what types of organization may have been present. Studies of modern hunter and gatherer populations suggest that PaleoIndians may have lived in small bands consisting of a nuclear family group. Periodically during the year groups of related bands comprising an extended family group would gather together at the larger base camps. During this period of group fusion perhaps marriages were arranged or ceremonial rites were performed. The importance of the gathering was to maintain kinship ties and reciprocal exchange networks which could be tapped into during times of unavailable resources. During the rest of the year the group fissioned into smaller bands (probably not exceeding 25 people) which migrated from one area to another in order to utilize seasonally available resources. The political character of these groups was probably egalitarian in nature, no one person controlled the affairs of the band. Leading figures within the group commanded respect because of their knowledge of rituals necessary to survival or because of their skill in hunting. (Steward 1955, Service 1966, Lee and DeVore 1968).

Our lack of understanding of ritual behavior does not imply that there were no religious beliefs. It is possible that the items associated with ritual practices have not been preserved. Or, it may mean that we have been unable to identify ritual items because of our lack of understanding as to what constituted ritual behavior. In order to understand the political structure and religious beliefs of populations living in the eastern United States during the PaleoIndian Stage, research of sites containing PaleoIndian components needs to continue.

ARCHAIC STAGE 7500-1000 B.C.

The Archaic Stage of development in the Middle Atlantic region represents a shift in subsistence/settlement patterns from a seasonal round based primarily on the exploitation of Pleistocene megafauna or migratory deer populations, to a seasonal round based on the procurement of plant resources as well as animal resources.

See Continuation Sheet No. 10

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   10  

Toward the end of the Stage shell fish and other estuarine resources began to be more intensively used (Custer 1988). The first evidences of broad based trade networks appear by the end of this Stage (Stewart 1989).

The Archaic Stage is divided into three periods, the Early Archaic (7500-6000 B.C.), the Middle Archaic (6000-4000 B.C.) and the Late Archaic (4000-1000 B.C.). The end of the Archaic Stage coincidences with the beginning of the Sub-Atlantic climatic episode, which marks the start of modern climatic conditions.

Early Archaic Period 7500-6000 B.C.

Sites with in situ, or undisturbed, Early Archaic Period remains are rare in the Middle Atlantic Region. In Anne Arundel County, few sites with in situ Early Archaic components have been located. The scarcity of sites associated with this period is probably the result of continued sea level rise, due to retreating glacial ice, throughout the period (Steponaitis 1980:5, 22).

Environment

The Early Archaic Period occurred during the terminal Boreal climatic episode and the transition into the Atlantic climatic episode. Cool and dry climatic conditions similar to those of the late PaleoIndian stage continued through most of the Early Archaic Period (Carbone 1976:121). Gradual changes in the flora and fauna, begun during the PaleoIndian Stage were continued through the Early Archaic Period, resulting in modern temperate flora and fauna populations through most of the Middle Atlantic region (Guilday 1967:232). By 6000 B.C. (the end of the Early Archaic Period) northern Boreal forests had been replaced by oak-hickory forests (Whitehead 1972:308-310). The climate began to gradually change toward the end of the period becoming warmer with increased precipitation. These changes, at ca. 6500 B.C., marked the end of the Boreal climatic episode and the beginning of the Atlantic climatic episode. The Atlantic episode was characterized by the expansion of mesic forests which had an increased occurrence of hemlock and oak species (Carbone 1976:121, 181).

See Continuation Sheet No. 11

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   11  Early Archaic Period Chronology and Technology

Two traditions occur during the Early Archaic Period. These traditions are based on the style of the projectile points produced during the period. The first tradition, the Corner-Notched Tradition, refers to a method of projectile point manufacture in which the corners of the blade of the point were notched. This tradition was wide spread through the southeastern United States and southern portions of the Middle Atlantic region (Coe 1964, Gardner 1974, Chapman 1975). Components of this tradition also appear in West Virginia (Broyles 1971). The second tradition is the Bifurcate Tradition. Projectile points of this tradition exhibit deep notches in the base of the point. Components of this tradition have been found in the southeastern United States, the Middle Atlantic region, and West Virginia (Coe 1964, Broyles 1971, Gardner 1974, Chapman 1975).

The Corner-Notched Tradition marks a change in projectile point style from fluted points to corner-notched points. This tradition spans two phases of the Early Archaic Period: Early Archaic I phase (7500-7200 B.C.) and Early Archaic II phase (7200-6900 B.C.). (Steponaitis 1980:13).

Early Archaic I phase is marked by the presence of the Palmer corner-notched point, "A small corner-notched blade with a straight, ground base, and pronounced serrations" (Coe 1964:67). Coe (1964:81) suggests that the Palmer component was a direct development out of the Hardaway component in North Carolina. Steponaitis (1980:13) dates this phase to 7500-7200 B.C. based on the  $7250 \pm 300$  B.C. radiocarbon date from the Fifty Site, Virginia. This radiocarbon date comes from the fragipan between the Palmer corner-notched point levels and the later Kirk Corner-Notched point levels (Gardner 1974).

The Kirk Corner-Notched point is the marker for the Early Archaic II phase. The Kirk Corner-Notched has "A large triangular blade with a straight base, corner notches, and serrated edges" (Coe 1964:69). The Kirk Stemmed point, a long blade with serrations and a broad stem (Coe 1964:70), also occurs within this phase. However, Kirk stemmed points, unlike Kirk Corner-Notched points, are not good temporal markers for the Early Archaic II phase. Kirk stemmed points have been recovered in Pennsylvania and Maryland in contexts dating into the Middle Archaic Period (Michels

See Continuation Sheet No. 12

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number     E     Page   12  

and Smith 1967:571-572, Clark and Miller 1975:35-36). Steponaitis (1980:13) places the Early Archaic II phase in the temporal span 7200-6900 B.C. based on radiocarbon dates from the St. Albans Site in West Virginia ( $6850 \pm 320$  B.C.,  $6900 \pm 320$  B.C., and  $6980 \pm 160$  B.C. (Broyles 1971:47)) and the Rose Island Site in Tennessee ( $7160 \pm 145$  B.C. (Chapman 1975:table 26)).

The artifact assemblage for both phases within this tradition is probably similar to the assemblages of the PaleoIndian Stage. While there is no direct evidence for the types of tools present in assemblages (other than projectile points) within Anne Arundel County, evidence from the Flint Run Complex in Virginia supports a continuation of the Paleo tool kit into the Corner-Notched tradition (Gardner 1974). Tool kits may have included scrapers, graters, denticulates, drills, bruins, hammerstones, utilized flakes, and knives (Coe 1964:73, Broyles 1971:25, 31, 37, Kinsey 1972:327-330, Funk 1972:17-21, Gardner 1974:5). Broyles (1971:39) recovered chipped hoes or grubbing tools in the Kirk zones of the St. Albans site, West Virginia, which indicates the increased importance of plant resources during the Early Archaic Period. Kavanagh (1982:46) notes an increased use of rhyolite as a lithic source within Maryland during this tradition. While Kavanagh's study area (the Monocacy River Drainage) was close to the source of rhyolite in the Blue Ridge, Steponaitis (1980) notes the same trend in the lower Patuxent River Drainage of Anne Arundel and Prince George's Counties, Maryland, which is at a greater geographic distance from the source of rhyolite. This increase in rhyolite usage may indicate the beginnings of trade between the Coastal Plain and the Piedmont provinces of the Middle Atlantic Regions.

The Bifurcate Tradition developed out of the Early Archaic I and II phases (Steponaitis 1980:21). Projectile points of this tradition differ from the points of the corner-notched tradition stylistically. Bifurcate points have deeply notched bases as opposed to ground bases. The sides of the points tend to be notched instead of the corners of the points. Three phases of the Early Archaic Period (Early Archaic III, IV and V) are within the Bifurcate Tradition (see table 1).

See Continuation Sheet No. 13

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   13  

Early Archaic III is marked by the St. Albans Side-Notched point. This point is small with serrated sides and a bifurcate base (Broyles 1971:73). Stratigraphic evidence from the St. Albans Site, West Virginia indicates that this phase should be tentatively dated between 6900-6600 B.C. (Steponaitis 1980:13). Early Archaic IV is marked by LeCroy Bifurcate points, triangular points with deeply notched bases and flared stems (Broyles 1971:69). Steponaitis assigns a temporal range of 6600 to 6300 B.C. to this phase based on a radiocarbon date of  $6300 \pm 100$  B.C. from zone 8 of the St. Albans Site. The final phase within the Bifurcate Tradition, Early Archaic V, is marked by the Kanawha Stemmed point, a narrow, triangular blade. Most of the points have serrated sides, an expanding stem, and a notched base (Broyles 1971:59). A temporal range of 6300 to 6600 B.C. is assigned to this phase based on a St. Albans radiocarbon date of  $6210 \pm 100$  B.C. associated with Kanawha Stemmed points (Steponaitis 1980:13).

Tool kits used during the Bifurcate Tradition probably included knives, scrapers, hammerstones, and drills, as well as the projectile points already discussed (Broyles 1971: 23, 25, 31). In addition hoes were recovered at the St. Albans Site, West Virginia indicating a reliance on plant resources as well as animal resources (Broyles 1971:23, 39). The use of rhyolite as a primary lithic material along with quartz and quartzite continues throughout this tradition in the Gwynns Falls Valley (Baltimore County, Maryland), the lower Patuxent River drainage (Anne Arundel and Prince George's Counties, Maryland) and the Monocacy River drainage (Frederick county, Maryland). (Clark 1976:100, Steponaitis 1980:21, Kavanagh 1982:49).

Settlement and Subsistence

Settlement/subsistence patterns during the Corner-Notched Tradition exhibit little change from PaleoIndian patterns. The major difference between the PaleoIndian Stage and the Corner-Notched Tradition was a shift in reliance away from Pleistocene fauna to modern fauna species. Gardner (1974) also notes a difference in the settlement patterns associated with the change in subsistence strategies. He suggests that the appearance of processing stations close to riverine habitats during the Corner-Notched Tradition was associated with the utilization of deciduous forest species as opposed to grassland species. Floral remains from the St. Albans Site, West Virginia and the Rose Island Site,

See Continuation Sheet No. 14

**United States Department of the Interior  
National Park Service****National Register of Historic Places  
Continuation Sheet**Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   14  

Tennessee indicate that acorns and hickory nuts were being utilized (Broyles 1971:table 1, Chapman 1975:table 27). Hoes recovered at the St. Albans site also indicate that plant resources were being utilized more intensively (Broyles 1971:39). Steponaitis (1983:172), based on her work in the Patuxent River drainage, postulates that the Corner-Notched tradition was primarily oriented toward riverine environments. However, Corner-Notched Tradition sites utilizing estuarine resources may no longer exist in the Coastal Plain province because they were submerged by sea level rise during the Early Archaic Period.

The Bifurcate Tradition is also seen as a tradition oriented toward the use of riverine resources. Gardner (1978:147) suggests an annual subsistence round based on the utilization of seasonally available resources. Steponaitis notes that there is no direct evidence for this pattern in the Patuxent River Drainage. However, the same factors which may have submerged earlier Corner-Notched Tradition estuarine sites may also be in operation here (Steponaitis 1980:21, 1983:177).

In general, the settlement pattern described by Gardner (1974, 1977, and 1979) and Custer (1984a) for the PaleoIndian Stage continues into this period. Early Archaic populations associated with both the Corner-Notched and Bifurcate Traditions continued to follow a seasonal round. Two patterns of movement are postulated for the seasonal round. In the first pattern, the cyclical model, groups moved from base camp to base camp with quarry-related base camps as the focal point of movement. The quarry-related base camps and the base camps were associated with maintenance stations, hunting sites, quarry reduction sites, and riverine processing sites (which first appear during this period). The second pattern, the serial model, has no quarry-related base camps. However, there are a series of base camps associated with maintenance stations, hunting sites, and quarries which were visited as the need arose.

Patterns of the utilization of living space at the Hardaway Site (a base camp) in North Carolina, indicate that populations tended to camp around small hearths. These hearths were laid in shallow prepared pits which were lined with rocks (Coe 1964:82-83).

See Continuation Sheet No. 15

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   15  

---

Demographics, Religion and Political Organization

Information regarding population size during the PaleoIndian Stage is not available for Anne Arundel County or for other areas of the eastern United States. However, future excavation may reveal information regarding the overall population density within the county as well as information concerning health and mortality.

The settlement patten utilized by Early Archaic populations suggests a social and political organization similar to PaleoIndian populations. A seasonal fusion/fission organization is postulated for population movement in which individual families spent a part of the year following seasonally available resources. During another part of the year several bands, probably connected through a kinship network, fused together at macroband base camps. In this way important kinship ties could be reaffirmed and ritual ceremonies could be conducted by the entire band. Bands were probably egalitarian in nature. (Custer 1984a:67-68).

Our lack of understanding of ritual behavior does not imply that there were no religious beliefs. It is possible that the items associated with ritual practices have not been preserved. Or, it may mean that we have been unable to identify ritual items because of our lack of understanding as to what constituted ritual behavior. In order to understand the political structure and religious beliefs of populations living in the eastern United States during the Early Archaic Period, research of sites containing Early Archaic Period components needs to continue.

The Middle Archaic Period 6000-4000 B.C.

The Middle Archaic Period does not represent a radical break with subsistence patterns of the previous Early Archaic Period. Evidence from the Doerschuk and Gaston Sites in North Carolina and the Neville Site in New Hampshire indicate that local occurrences of Middle Archaic components in Anne Arundel County may be part of a broader north to south cultural adaptation (Coe 1964:51-54, Dincauze 1976:120-121, Steponaitis 1980:22-23).

See Continuation Sheet No. 16

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   16  Environment

The Middle Archaic Period occurred during the Atlantic climatic episode (6500-3000 B.C.). Climatic conditions during the Middle Archaic Period were warmer and wetter than much of the preceding Early Archaic Period (Carbone 1976:122). Vegetation during this period was primarily northern hardwood forest with inclusions of hickory, hemlock, and beech (Carbone 1976:189, Whitehead 1972:308-310). Pollen cores from the Dismal Swamp Virginia indicate that sweet gum was also present in the Coastal Plain Province (Whitehead 1972:310).

The rise in sea level begun during the Wisconsin glacial retreat continued through this period resulting in the development of extensive tidal marshes and brackish water zones in the Chesapeake region (Steponaitis 1980:22).

Middle Archaic Period Chronology and Technology

The Middle Archaic Period spans three phases which are defined on the basis of projectile point typology. Middle Archaic I phase is marked by the Stanley point, "a broad triangular blade with a small squared stem and a shallow notched base" (Coe 1964:35). During this phase the first ground stone tools and atlatl weights appear (Coe 1964:52, 54). Steponaitis (1980:13) assigns this phase to the period 6000-5000 B.C. based on a radiocarbon date of 5944 ± 500 B.C. from the Graham Cave Site, Missouri.

Middle Archaic II phase markers are the Marrow Mountain I and the Marrow Mountain II points. Marrow Mountain I is "...a small triangular blade with a short pointed stem" (Coe 1964:37). While Marrow II points are long and narrow with a tapered stem (Coe 1964:37). Dincauze (1976:120) has tentatively dated a similar point, the Stark Stemmed point, from the Neville Site in New Hampshire to between 5000 and 4200 B.C. Radiocarbon dates associated with Marrow Mountain points outside the Middle Atlantic region include 5045 ± 245 B.C. from the Icehouse Bottom Site, Tennessee (Chapman 1976:table 1), 4500 B.C., Stucks Bluff, Alabama (DeJarnette, et. al. 1975), and 4030 ± 300 B.C. Russell Cave, Alabama (Griffin 1974). Based on these dates, Steponaitis (1980:13) has assigned this phase to the time period, 5000-4200 B.C.

See Continuation Sheet No. 17

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   17  

The final phase of the Middle Archaic Period (Middle Archaic III) is marked by the Guilford point. "A long, slender, but thick blade with straight, rounded, or concave bases (Coe 1964:43). Steponaitis (1980:14) tentatively dates this phase to 4200 to 4000 B.C. based on a radiocarbon date of 3440 ± 350 B.C. from the Gaston Site North Carolina (Coe 1964:118).

Tool kits used during the Middle Archaic Period remain basically unchanged throughout all three phases (Coe 1964:52, Steponaitis 1980:23). There is however a notable decrease in the use of non-local lithic materials both in the Patuxent drainage on the lower western shore and on the lower eastern shore of Maryland (Steponaitis 1980:23, Hughes 190:136). Coe recovered stone mortars associated with the Stanley component of the Doerschuk Site in North Carolina, indicating that plant resources were being utilized. Polished stone atlatl weights, used to balance atlatl spear throwers, appear for the first time in association with Stanley components at the Hardaway and Doerschuk Sites, North Carolina. However, no atlatl weights were recovered in association with the Morrow Mountain component at the Doerschuk Site. Chipped stone axes were recovered in the Guilford component of the Doerschuk site. (Coe 1964:51-55, 80-81).

Subsistence, Settlement, Demographics, and Political Organization

Subsistence strategies and settlement patterns of the Middle Archaic Period were similar to Early Archaic Period patterns. Mobile bands utilized seasonally available plants and animals. Some researchers have postulated an abandonment of coastal areas in favor of the Piedmont during the Middle Archaic (Kavanagh 1982:50). However, the continued rise of sea level during this period has probably submerged coastal sites associated with the Middle Archaic Period. Estuarine resources in the form of shell fish may have been utilized during this period, but there is no direct evidence of this, as these sites would have been located in areas submerged by rising sea level (Steponaitis 1983:177).

Gardner (1978) and Custer (1979, 1908, 1984a), based on the work of MacNeish (1971) have identified three types of sites associated with the Middle Archaic. These site types reflect the social organization of the Middle Archaic. (See also Gardner and Custer 1978). The macroband base camp (Custer 1984a:67) was occupied by numerous family units. Artifact assemblages recovered

See Continuation Sheet No. 18

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   18  

from these sites indicate that a wide variety of activities were carried out. The large amounts of debris recovered suggests fairly long term occupation of macroband base camps by a large group. Microband base camps were occupied by smaller family units, probably an individual family group. Microband base camps tend to be located in environmental settings that could not support the larger populations associated with macroband base camps. Both the macroband and microband base camps were associated with procurement sites. Activities at procurement sites concentrated on the exploitation of local resources. Fewer tool types are associated with these sites and tend to be related to a limited number of activities. Site location was dependent on the type of resource being utilized (i.e. quarry sites, interior hunting sites, etc.).

The pattern of sites postulated by Gardner and Custer suggests the population densities we would expect to find at each site. Higher population densities would be expected at macroband base camps than at microband base camps, while procurement sites would have extremely low population densities. However, the overall population density for Anne Arundel County is not known at present.

The settlement pattern utilized by Middle Archaic populations suggests a social and political organization similar to the PaleoIndian and Early Archaic populations. A seasonal fusion/fission organization is postulated for population movement in which individual families or bands spent a part of the year following seasonally available resources. During another part of the year several bands, probably connected through a kinship network, fused together at macroband base camps. In this way important kinship ties could be reaffirmed and ritual ceremonies could be conducted by the entire band. Bands were probably egalitarian in nature. (Custer 1984a:67-68).

Religion

Little evidence exists for ritual or religious practices associated with Middle Archaic Period sites. Burial Ceremonialism does appear during this period on the coast of Labrador, burial mounds dating prior to 5000 B.C. have been identified there (McGhee and Tuck 1975). However, there is no evidence of similar ceremonial mortuary practices in Anne Arundel County at the same

See Continuation Sheet No. 19

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   19  

time. This does not mean that ritual practices or religious beliefs did not exist, only that we have been unable to recognize them within the archaeological record.

The Late Archaic Period, 4000 - 1000 B.C.

Four traditions flourished during the Late Archaic Period. The Piedmont tradition (4000-2000 B.C.) was an in situ development in the Middle Atlantic Region (Kinsey 1972:337, McNett and Gardner 1975). Contemporaneous and co-existing with the Piedmont tradition was the Laurentian tradition (4000-2000 B.C.) centered in the St. Lawrence River drainage of Ontario, New England, and New York (Ritchie 1969:29), but which also extended south into Maryland. Custer suggests that the third tradition, the Broadspear Tradition (2000-1500 B.C.), developed out of the Piedmont tradition as an adaptive response to changing environmental conditions (Custer 1978:3). The final tradition, the Fishtail Tradition (1500-750 B.C.), developed during the terminal Late Archaic Period and extended into the Early Woodland Period (Steponaitis 1980:28).

Environment

The Late Archaic Period spans two climatic episodes, the terminal Atlantic episode (6500-3000 B.C) and the early Sub-Boreal episode (3000-810 B.C.). (Steponaitis 1980:figure 2.4, Custer 1984a:89). Major climatic and environmental changes occurred during the Late Archaic Period which affected settlement and subsistence patterns.

Climatic conditions during the terminal Atlantic and early Sub-Boreal climatic episode were warm and dry. These two climatic episodes occurred during the mid postglacial Xerothermic. The Sub-Boreal episode climate remained warm and dry until ca. 2300 B.C., when conditions gradually became cooler and wetter. The cooler wetter conditions continued through the very end of the late Archaic Period into the Early Woodland Period until ca. 810 B.C. (Carbone 1976:122-123, Custer 1984a:89).

See Continuation Sheet No. 20

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page  20 

Vegetation during both climatic episodes of the Late Archaic Period consisted predominately of oak-hickory forests with pine inclusions and grassland areas (Carbone 1976:189, 1982; Bernardo and Webb 1977:80; Custer 1978, 1984a, 1984b; Brush 1982, 1986). During the Sub-Boreal climatic episode, drier conditions resulted in the shrinking of eco-niches available to fauna species intolerant of arid conditions (Custer 1984:90).

Sea level rise was dramatically reduced after circa 3000 B.C. (Newman and Rusnak 1965:1466, Kraft 1971:2131, Belknap and Kraft 1977, Custer 1988). The decrease in sea level rise increased the stability of the estuarine environment of the Chesapeake Bay. Brackish water zones were pushed further inland along the tributaries of the Chesapeake Bay. This inland invasion of brackish water also meant increased habitats for spawning fish. In addition, the greater stability of estuarine environments encouraged shellfish beds expansion (Custer 1984b). Based on work at the White Oak Point Site on the Potomac River in Northern Virginia (Waselkov 1982) and the Coan River (a Potomac tributary) in Virginia (Potter 1982) initial utilization of shellfish as a food resource in the Late Archaic has been placed at 2100 to 2000 B.C., around the beginning of the BROADSPEAR Tradition (Custer 1988).

Late Archaic Period Chronology and Technology

The Piedmont/Laurentian Traditions are contemporaneous in Anne Arundel County and the surrounding Middle-Atlantic Region. The Piedmont Tradition is a local Tradition marked by Piscataway, Vernon, and Holmes points manufactured from locally available materials (Steponaitis 1980:24). Components of this tradition have been located at sites to the south in the Carolinas and as far north as Labrador, as well as west to the Appalachians and east to the Atlantic (Fitzhugh 1972). Laurentian Tradition diagnostic artifacts found in the Middle Atlantic include Otter Creek Side-Notched points, Vosburg Corner-Notched points, and Brewerton series points. However, both Kinsey (1972:343) and Dincauze (1975:26) state that the distribution of these points outside the upper St. Lawrence River drainage is rare. Both the Piedmont Tradition and the Laurentian Traditions span three phases of the Late Archaic Period: Late Archaic I phase (4000-3000 B.C.), Late Archaic II phase (3000-2200 B.C.) and Late Archaic III phase (2200-1900 B.C.).

See Continuation Sheet No. 21

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   21  

The Late Archaic I phase is marked by the Piscataway point. This point is a component of the Piedmont Tradition. It is a small, leaf shaped, contracting stem point (Stephenson and Ferguson 1963:146). McNett and Gardner (1975) date the Piscataway complex of the middle Potomac River drainage to between 4000 and 3000 B.C. Laurentian Tradition cultural assemblage items associated with this phase include the Otter Creek Point. This point is large and thick with squared tangs (Ritchie 1961:40). Funk (1965) has obtained a radiocarbon date of  $4600 \pm 100$  B.C. for a Otter Creek point at the Sylvan Lake site in New York. However, Otter Creek points are not good temporal markers as they have been found in association with Middle Archaic Period components (Steponaitis 1980:14, 24-25). Other tools within the assemblage include drills, hammerstones and utilized flakes (McDowell 1972). Steponaitis (1980:14) places Late Archaic I between 4000 and 3000 B.C.

Late Archaic II phase is marked by the Vernon Side-Notched point, a Piedmont Tradition point (Stephenson and Ferguson 1963:144). Typologically this point is similar to the Halifax Side-Notched point first defined by Coe (1964:108-109) at the Gaston Site in North Carolina. Radiocarbon dates, of  $3440 \pm 350$  B.C. and  $2280 \pm 350$  B.C., associated with Halifax Side-Notched points, have been obtained from the Gaston site. The estimated dates for the Vernon complex in the Potomac Valley is 3000 B.C. to 2000 B.C. (Handsman and McNett 1974, McNett and Gardner 1975). Laurentian Tradition points associated with this phase include Brewerton Corner-Notched, Brewerton Eared-Notched, Brewerton Eared Triangular and Brewerton Side-Notched points (Ritchie 1961:16-20). Brewertons have been radiocarbon dated at  $2350 \pm 180$  B.C. at Sheep Rock Shelter, Pennsylvania (Michels and Smith 1967:578, 863) and at  $2050 \pm 220$  B.C. and  $2010 \pm 100$  B.C. at the O'Neill site in New York (Ritchie 1969:91). Based on the dates known for sites yielding Vernon, Halifax, and Brewerton points, Steponaitis places the Late Archaic II phase between 3000 and 2200 B.C. (Steponaitis 1980:14). Tools associated with the Late Archaic II phase include scrapers, knives, graters and hammerstones (McNett and Gardner 1975). Coe (1964:115) recovered stone mortars associated with the Halifax component of the Gaston site, North Carolina.

See Continuation Sheet No. 22

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   22  

The Late Archaic III phase, the final phase within the Piedmont/Laurentian Traditions in the western Maryland Coastal Plain Province, is marked by the Holmes point (Handsman and McNett 1974:6, McNett and Gardner 1975). The Holmes point is similar to the Bare Island Point of Pennsylvania and New York which has been dated to circa 2200 B.C. (Ritchie 1961:144-15, Funk 1965). Holmes points are also similar to Lackawaxen points from the Delaware Valley. Radiocarbon dates from sites in Pennsylvania with Lackawaxen points in the assemblage include  $3230 \pm 120$  B.C. and  $1710 \pm 120$  B.C. (Kinsey 1972:411) Steponaitis (1980:14) places this phase between 2200 and 1900 B.C.

The Broadspear Tradition developed around 2000 B.C. During this phase major changes occurred in the settlement and subsistence patterns of the Late Archaic Period populations. These changes and their significance will be discussed more fully in the following section of this text. Two phases occurred during this tradition, Late Archaic IV and Late Archaic V. The designation of the two phases is based on projectile point typology.

Late Archaic IV is marked by two projectile points, the Savannah River Stemmed point and the Leigh/Koens-Crispin point. Savannah River points are "large, heavy, triangular, blade[s] with a broad stem" (Coe 1964:44), a radiocarbon date of  $1900 \pm 200$  B.C. has been obtained for this point at the Gaston site, North Carolina (Coe 1964:table 15). Savannah River points are similar to Leigh/Koens Crispin points and Shook Kill points (Ritchie 1961:47). Koens Crispin points in Pennsylvania have been dated to  $1720 \pm 100$  B.C. (Kinsey 1972:423, 426). Steponaitis places this phase between 1900 and 1700 B.C. (1980:14).

Perkiomen Broadspear and Susquehanna Broadspear points are the markers for the Late Archaic V phase, the final phase within the Broadspear Tradition. Perkiomens are very broad, asymmetrical spear points (Ritchie 1961:42-43, Kinsey 1972:426). Susquehanna Broadspears are broad, corner-notched spear points, which are boldly flaked (Ritchie 1961:53). The Perkiomen point may occur earlier than the Susquehanna Broadspear. Radiocarbon dates for the Perkiomen place it at  $1720 \pm 120$  B.C. (Miller Field site, New Jersey),  $1620 \pm 100$  B.C. (Brodhead-Heller site, Pennsylvania), and  $1500 \pm 120$  B.C. (Faucett Site, Pennsylvania) (Kinsey 1972:427). The Susquehanna Broadspear has been dated at  $1650 \pm 80$  B.C. (Zimmerman site, Pennsylvania, Kinsey 1972:427). Steponaitis dates

See Continuation Sheet No. 23

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   23  

this phase to between 1700 and 1500 B.C. in the Patuxent River drainage (1980:14).

The artifact assemblage associated with this tradition includes three quarter grooved axes, winged atlatl weights, chipped stone adzes, drills, and stemmed scrappers (Turnbaugh 1975:54). Steatite bowls appear for the first time during this phase. Steatite bowls have been recovered with Broadspear points at the Marcey Creek Site in Maryland (Manson 1948:223-227).

The Fishtail Tradition spans the final phase of the Late Archaic Period (Late Archaic VI phase) and the initial phase of the Early Woodland Period (Marcey Creek phase). Both the Late Archaic VI and Marcey Creek phases are marked by Dry Brook Fishtail and Orient Fishtail projectile points and by the presence of steatite bowls. However, as steatite vessels appear in both the Fishtail Tradition and the Broadspear Tradition, they are not good temporal markers for a specific phase or tradition.

Dry Brook Fishtail points are narrow with side-notches (Kinsey 1972:430). Orient Fishtails are similar to Dry Brook Fishtail point but have a flaring "fishtail stem" (Ritchie 1961:39, Kinsey 1972:431). Fishtail points are a temporal marker for both the Late Archaic VI phase of the Late Archaic and for Marcey Creek Phase of the Early Archaic Period. Late Archaic VI is dated between 1500 and 1000 B.C. based on radiocarbon dates from the Zimmerman site, Pennsylvania ( $1280 \pm 120$  B.C.), Miller Field Site, New Jersey ( $1200 \pm 120$  B.C.), and the Brodhead-Hiller site, Pennsylvania ( $1170 \pm 120$  B.C.). (Kinsey 1972:432-433).

Subsistence and Settlement

Subsistence and Settlement patterns throughout the Piedmont and Laurentian traditions remained similar to patterns of the Middle Archaic. However, after 3000 B.C. major environmental changes occurred in the coastal plain province which changed the subsistence and settlement patterns of the local population. The settlement pattern utilized by Late Archaic populations living during the Piedmont/Laurentian Tradition suggests a social and political organization similar to the PaleoIndian and Early and Middle Archaic populations. Small family groups were organized as bands, which were probably egalitarian in nature. A seasonal fusion/fission organization is postulated for population movement

See Continuation Sheet No. 24

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number     E     Page     24    

in which individual families spent a part of the year at microband base camps following seasonally available resources. During another part of the year several bands, probably connected through a kinship network, fused together at macroband base camps. In this way important kinship ties could be reaffirmed and ritual ceremonies could be conducted by the entire band (Custer 1984a:67-68).

Major environmental changes after 3000 B.c altered settlement and subsistence patterns. The Broadspear tradition developed between 2000 and 1900 B.C. Several researchers have suggested that the Broadspear tradition is a development out of the local Piedmont Tradition, with a primary focus on riverine environments (Kinsey 1972:347; Turner 1978:69; Mauer, et. al. 1980:5, and Steponaitis 1980:26). McNett and Gardner (1971:45) initially argued that the Broadspear Tradition was confined to the Piedmont, but the presence of components for this tradition in the Patuxent Drainage of Anne Arundel and Prince Georges Counties (Steponaitis 1980:27) as well as on the eastern shore of Maryland (Wilke and Thompson 1977) contradicts this idea. Turnbaugh has postulated that the Broadspear tradition is a development of the Southern coastal plain which began with the appearance of Savannah River points circa 2500 B.C. Turnbaugh believes that this tradition represents more intensive exploitation of shellfish and estuarine resources in the south, while riverine resources were exploited in the north (Turnbaugh 1975:54, 56).

Gardner (1982:60) suggests that Late Archaic coastal plain sites utilized estuarine resources and that these sites may have supported semi-sedentary populations. These sites were probably utilized as large macroband base camps. Broadspear knives and woodworking tools recovered from Late Archaic Coastal Plain sites could indicate that specialized tools, associated with the use of estuarine resources, were being manufactured. These tools could have included fish traps, nets, and canoes (Custer 1984a:97). Gardner (1975:20) suggests that the appearance of stone and ceramic containers for cooking and storage was also related to the utilization of estuarine resources. Evidence of possible storage pits with seed remains were recovered at the Piscataway Creek site in Maryland indicating long term occupation of sites with estuarine resources (Custer 1984c).

See Continuation Sheet No. 25

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   25  

---

Faunal and floral remains recovered from Late Archaic Period sites such as Popes Creek (Gardner 1982), Piscataway Creek (Stewart and Gardner 1978) and sites along the lower Potomac (Potter 1982) indicate that a variety of resources were being utilized. Faunal remains include deer, small mammals, turtle, snake, and fish as well as several species of shell fish - oyster, soft shell crab, razor clam, periwinkles, and ribbed mussels. Hickory nuts and grape seeds were recovered as part of the floral assemblage.

Custer (1984a) has postulated that the drier conditions of the mid postglacial Xerothermic between 3000 and 760 B.C. necessitated changes in the settlement and subsistence patterns of populations residing in the Delmarva Peninsula. The same climatic conditions also affected populations residing in Anne Arundel County. Custer postulates that areas formerly abundant in resources may have become marginal resource areas and were abandoned in favor of new areas. In some areas geographic barriers or adjoining populations may have prevented migration into a new area. Hence, modification in the seasonal round and settlement pattern became necessary. These modifications in turn led to modifications in the social organization of the group.

During the terminal Archaic (and extending into the early Early Woodland) macroband base camps were larger than earlier base camps had been. Periodically the group would fission into smaller bases which would occupy microband base camps. Both the macroband and microband base camps utilized procurement sites in order to obtain resources, an example would be the procurement of lithic materials from quarry sites.

The ability to store food resources at the macro and microband base camps allowed groups to remain sedentary for longer periods of time and to support higher population densities. Turner (1978) notes a marked population growth in the Virginia Coastal Plain during the terminal Archaic and Early Woodland Periods. Several bands joined together at one macroband base camp increased the potential for higher population densities in a given area. Custer suggests that sedentism also decreased the necessity for spaced births, which is vital to the survive of mobile bands of hunters. With the decrease in the importance of spaced births, the birth rate probably rose, which further increased population density. (Custer 1984:97).

See Continuation Sheet No. 26

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   26  

Despite population increases in the Virginia Coastal Plain during the Late Archaic and Early Woodland Periods, Steponaitis (1980:27) notes a decline in population in the Patuxent River Drainage during the Broadspear and Fishtail Traditions of the Late Archaic Period. She suggests that the decrease in population may be due to stress on the environment caused by the mid postglacial Xerothermic episode. Clark (1976:119) also reports a lack of artifacts associated with the Broadspear tradition in the Gwynns Fall Valley of the Piedmont. However, Steponaitis cautions that this interpretation may be flawed based on our lack of knowledge of what the tool assemblages of these two traditions contained (Steponaitis 1980:27).

Political Organization

Late Archaic political organization during the Piedmont/Laurentian Tradition was probably similar to the organization of Early and Middle Archaic groups. Bands tended to be egalitarian in nature with little or no hierarchical ranking. Hierarchical ranking which did occur was probably based on individual achievement and ability. However, the climatic conditions of the mid postglacial Xerothermic episode which contributed to changes in the settlement and subsistence patterns and population densities of terminal Archaic groups, also contributed to changes in the political organization of the population.

Ranked societies probably began to develop during the Broadspear and Fishtail Traditions of the terminal Archaic. Custer suggests that storage of food resources and the intensification of food production resulted in greater sedentism; necessitating the need for more efficient management of the group and its resources. While chiefs did not emerge during this period, certain individuals emerged as leaders or managers who were accorded greater social significance. (Custer 1984:98, see also Fried 1967). Binford (1962) suggests that as populations grew, the degree of personal contact between members of a group decreased and that symbols became an important part of group communication. Symbols were used to distinguish between individuals of different status. Use of items manufactured from non-local materials was one way to establish and communicate social status. During the terminal Archaic, broad based trade networks were established which allowed the flow of exotic materials from one region to another.

See Continuation Sheet No. 27

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number     E     Page   27  

Stewart argues that broad based trade systems were organized in the Middle Atlantic region after 2500 B.C. (Stewart 1989). Initial trade networks were associated with the Broadspear and Fishtail Traditions of the Late Archaic Period and continued into the Woodland Stage (Stewart 1989:54). Finished items were traded with the highest frequency. These items were utilitarian in nature and have rarely been recovered within ritual contexts, such as burials, although caches of bifaces are known (Stewart 1989:52). Materials included in the exchange system were jasper, argillite, rhyolite, ironstone, soapstone, marine shells, and copper. Not all of these materials were traded in the Maryland Coastal Plain province. However, rhyolite from the Blue Ridge Province of Pennsylvania and Virginia (Stewart 1984:5) and argillite from the Delaware portion of the Hudson Valley has been found in the Coastal Plain Province (Stewart 1989:52).

Religion

Little evidence of ritual or religious practices exist for the Late Archaic Period in Anne Arundel County. This does not imply that ritual practices or religious beliefs did not exist, evidence of ritual ceremonialism recovered in other areas of the eastern United States suggests that ritual behavior may have occurred in Anne Arundel County during the Late Archaic Period.

Late Archaic mortuary ceremonial complexes located in the eastern United States often have traits associated with them that are not found at habitation sites. These traits include preferential burial locations, ritual treatment of the dead, and distinctive artifacts that can not be assigned to a specific cultural component (Penny 1985:28). Examples of Late Archaic mortuary complexes include that Old Copper Complex of Wisconsin, Michigan, and Ontario (3000-500 B.C.) and the Red Ocher and Glacial Kame Complexes of the upper Midwest and Great Lakes Region. These three mortuary complexes were probably all specialized burial components of a larger cultural system. Distinctive artifacts were included in graves, probably those of high ranking individuals within the society. These Late Archaic mortuary complexes may be related to the beginnings of the Adena cultural pattern of Ohio, Kentucky, and West Virginia (Willey 1966:261, 281-282, Tuck 1978:41-43, Penny 1985:28-29, 35-36, Brose 1985:43).

See Continuation Sheet No. 28

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   28  

---

Although mortuary complexes existed in the eastern United States during the Late Archaic, and although other mortuary complexes were located in the northeastern United States (such as the Late Maritime Archaic red ocher burials in Maine (Snow 1969) and specialized burials in Massachusetts (Robbins 1968)), there is no conclusive evidence for Late Archaic mortuary ceremonial complexes in Anne Arundel County or in Maryland.

WOODLAND STAGE 1000 B.C. - 17TH CENTURY A.D.

The Woodland Stage of development in the Middle Atlantic Region represents a shift in subsistence and settlement patterns. Populations tended to be more sedentary than during the Archaic Stage, with population concentrations actually increasing in some areas. Widespread utilization of shellfish first occurs during this period. And the first ceramics appear. Contact with European populations occurs at the end of this Stage. (Custer 1984a).

The Woodland Stage is divided into three periods, the Early Woodland Period (1000-400 B.C.), the Middle Woodland Period (400 B.C.-800 A.D.), and the Late Woodland Period (800 A.D. through European Contact).

Early Woodland Period 1000 - 400 B.C.

The Early Woodland Period in the Middle Atlantic region marks the first appearance of ceramics in the region. Cultural traditions and subsistence/settlement patterns of the terminal Archaic Period continued through much of the Early Woodland Period, however there was a pronounced decline in exchange networks by the end of the Period. Elaborate mortuary ceremonialism associated with the Adena culture of Ohio also appeared during this period throughout the Middle Atlantic Region.

See Continuation Sheet No. 29

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   29  

---

Environment

The Early Woodland Period spanned two climatic episodes, the Sub-Boreal episode (3000-810 B.C.) and the Sub-Atlantic episode (810 B.C.-A.D. 1000). The Sub-Boreal episode occurred during the mid-postglacial Xerothermic (2700-200 B.C.), a period of decreased precipitation (Carbone 1976:123, 192; Custer 1984a:90, 94). An increase in precipitation was experienced midway through the following Sub-Atlantic climatic episode. Climatic conditions established during the Sub-Atlantic episode are still prevalent during our own era. Anne Arundel county presently has a temperate mid continental climate. Rainfall is moderate, but is adequate enough to provide humid conditions. Snowfall is also moderate. Mean temperatures for the Annapolis area include a low of 34 degrees in January and a high of 79 degrees in July (Fassig 1917:181, Steponaitis 1980:3-4).

Reduced precipitation during the mid-postglacial Xerothermic affected the rate of sea level rise. Dramatic decrease in the rise of sea level, first begun during the Late Archaic period, continued through the Early Woodland Period. As the rise in sea level decreased, estuarine environments stabilized which enabled the increase of habitats for shell fish and andromous fish species. Shell middens found on Early Woodland sites indicate that populations living in Anne Arundel County and the Coastal Plain of Maryland and Virginia were utilizing estuarine resources (Wright 1973:20).

The predominant vegetation during the Early Woodland Period in Anne Arundel County was oak-hickory forest. Present vegetation patterns in the county are essentially similar to those established by the end of the Early Woodland Period. Pines tend to be found in the lower reaches of rivers. Wetlands support associations of trees in which tulip poplars and gum are the predominant species. Stands of oak, hickory, chestnut, and pine are found in upland areas. (Custer 1984a, Steponaitis 1980:7).

Faunal remains from sites in the mid-Atlantic region (including Anne Arundel county) indicate that a variety of animal resources were available to Early Woodland populations for utilization as foodstuffs. Shell fish, migratory fowl, and mammal remains have all been recovered (Wright 1973:10).

See Continuation Sheet No. 30

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   30  Early Woodland Period Chronology and Technology

There are two phases within the Early Woodland Period of Anne Arundel County and the Maryland Coastal Plain. The Marcey Creek Phase (1000-750 B.C.) is the initial phase of the Early Woodland Period and the terminal phase of the Fishtail Tradition, which began during the terminal Archaic. The second phase of the Early Woodland Period is the Accokeek phase (750-400 B.C.).

The Marcey Creek phase is named for ceramics recovered at the Marcey Creek site in the Potomac River Valley (Manson 1948). These ceramics are the first to appear in the Middle Atlantic Region. Kinsey (1972:451) reports a radiocarbon date of 1220 B.C.  $\pm$  120, associated with Marcey Creek ceramics, at the Miller Field Site, New Jersey. Marcey Creek ceramics are tempered with steatite. Vessel forms tend to imitate earlier steatite vessel forms developed during the Late Archaic VI phase. There is no decorative treatment of the vessel, although lugs are common (Stephenson and Ferguson 1963:91-92). Marcey Creek ceramics are distributed through the Delaware and Susquehanna River Valleys, in the Coastal Plain and Piedmont provinces of Maryland and Virginia, and sporadically in New York (Kinsey 1972:451-453, Egloff and Potter 1982:97, Stewart 1982:70).

Selden Island ware is associated with the Marcey Creek phase. Selden Island ware is tempered with steatite but tends to have thinner vessel walls than Marcey Creek ware, the exterior surfaces of vessels are often cordmarked (Artusy 1977, Hughes 1980:177, Steponaitis 1980:28). Sherds of Dames Quarter ware have been recovered at the Hillsmere Pond I site in Anne Arundel County (McNamara 1982:table 3). This sherd does not appear to be part of the local artifact assemblage, and is probably an import. Dames Quarter ware is associated with the Dames Quarter phase of the Early Woodland Period, which is centered primarily on the Delmarva Peninsula. Dames Quarter ware is a black stone tempered ceramic which generally has smooth surfaces, although cordmarking has been found on some sherds (Wise 1975). Vinette 1 ceramics of the Middlesex and Point Peninsula I phases of New York are also related to Marcey Creek ceramics, as are Fayette thick ceramics of Ohio, and Baumer ceramics of the Central Mississippi Valley (Stephenson and Ferguson 1963:figure 29, Willey 1966:281-282 and figure 5-3, Stewart 1982:table 1).

See Continuation Sheet No. 31

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   31  

Projectile points associated with the Marcey Creek phase are the Dry Brook and Orient Fishtail points. These points are associated with the Fishtail tradition (1500-750 B.C.) and first appeared during the Late Archaic VI phase of the Late Archaic Period.

Steponaitis (1980:15) dates the Marcey Creek phase to the period 1000 B.C. through 750 B.C. She bases this assignment on a radiocarbon date of  $950 \pm 95$  B.C. from the Monocacy Site, Maryland (Gardner and McNett 1971:43).

The Marcey Creek phase is followed by the Accokeek phase. The ceramic marker for this phase is Accokeek cordmarked ware, named for its type site on Accokeek Creek in Prince Georges County, Maryland (Stephenson and Ferguson 1963:97-100). Accokeek vessels are small conoidal vessels which are tempered with sand and crushed quartz. The surfaces of Accokeek vessels are cordmarked, occasionally the rims are smoothed over. Accokeek ceramics are found in the Maryland Coastal Plain and in Virginia south to the James River. Stoney Creek ceramics, which are found primarily in southeastern Virginia, are associated with Accokeek ceramics. Stoney Creek ceramics are conoidal, but, unlike Accokeek ceramics, are tempered primarily with sand. The surfaces of Stoney Creek ware are impressed with wide wicker fabric or with cord or knotted net. The suggested temporal range of Stoney Creek is 500-200 B.C. (Egloff and Potter 1982:99, 103). Accokeek and Stoney Creek ceramics are similar to Vincent and Clement series ceramics found in North Carolina in the Roanoke rapids basin (Phelps 1980).

Accokeek ceramics have been found in association with Calvert Projectile points at the King I Site on the Patuxent River in Anne Arundel County (Wright 1973:10). Calvert points are small, square stemmed points (Stephenson and Ferguson 1963:143-144). Handsman and McNett (1974:6) suggest the Calvert point may be associated with Middle Woodland components rather than Early Woodland components in the Potomac River Valley. However, the association of Calvert points with Accokeek ceramics and points similar to the Lagoon point (dated to 520-100 B.C.), indicates that Calvert points were probably associated with at least some Early Woodland components (Ritchie 1969:figure 18, Kinsey 1972:436-437).

See Continuation Sheet No. 32

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number     E     Page   32  

The Accokeek phase is temporally placed between 750 and 400 B.C. by Steponaitis (1980:15), based on data recovered at the Loyola Retreat Site in Maryland (Handsman and McNett 1974:4). Egloff and Potter (1982:99) place Accokeek ceramics between 800 and 200 B.C., but the dates assigned by Steponaitis for the phase will be preferred here.

Settlement, Subsistence, and Demographics

Settlement and Subsistence patterns begun during the Broadspear and Fishtail Traditions of the terminal Archaic Stage continued through the Marcey Creek phase of the Early Woodland Period. Custer (1984a:96) and Wright (1973:20) both postulate a settlement pattern which includes large macroband base camps whose populations periodically fissioned and moved to smaller microband base camps. Gardner (1982:66) suggests that macroband base camps were occupied as semi-sedentary sites. Storage pits with seed remains have been recovered at Potomac River sites in association with Accokeek components (Custer 1984c). This evidence appears to support Gardner's model of semi-sedentary settlement as the storage of food resources on site would allow groups to remain sedentary for longer periods. Additionally, larger population densities could be supported within a smaller area. Turner (1978) notes marked population increase in the Virginia Coastal Plain during the Early Woodland Period. Population density also increased in some locations of the Maryland Coastal Plain.

Within Anne Arundel County, base camps appear along major river drainages during the Marcey Creek phase of the Early Woodland Period. Three of these drainages, the Severn, South, and Patuxent River drainages have been intensively surveyed (Steponaitis 1978, 1980, 1983 and Wright n.d). Wright's survey of the Severn River in the late 1950's (Wright n.d.) identified eight sites with Marcey Creek components. Most of these sites were located in the upper two-thirds of the river. Along the South River, Steponaitis (1978) located three sites with Marcey Creek components. Two sites were located at the head waters and the third site was located near the mouth of the river. Although there were shell middens at all three sites, the shell middens were probably associated with later Woodland components present on the sites and not with components of the Marcey Creek phase. Steponaitis (1980:29 and 1983:figure 8.23) identified ten sites with Marcey Creek components along the Patuxent River drainage in Anne Arundel, Prince Georges, and

See Continuation Sheet No. 33

**United States Department of the Interior  
National Park Service**

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   33  

---

Calvert Counties. Eight of these sites were located in the riverine zone of the river and two were located in the river's estuarine zone. The settlement model suggested by Kinsey (1972:347), Turner (1978:69), Mouer, et. al. (1980:5), and Steponaitis (1980:26) emphasizes a riverine orientation for Fishtail Tradition sites. The sites identified on the South, Severn, and Patuxent Rivers in Anne Arundel County, associated with the Marcey Creek phase, tend to support this model.

The Accokeek phase of the Early Woodland Period represents a shift in the settlement pattern established during the Late Archaic VI and Marcey Creek phases of the Fishtail Tradition. Steponaitis identifies three characteristic differences between the Marcey Creek phase and the Accokeek phase. First there is an increase in the number of Accokeek components as compared to the number of Marcey Creek components. This may indicate an increase in population. Survey along the Severn river identified eight sites with Marcey Creek components and thirteen sites with Accokeek components (Wright n.d.). Steponaitis (1978) identified only three sites with Marcey Creek components along the South River as compared to twelve sites with Accokeek components along the same drainage. This pattern of increase is also seen along the Patuxent River in Anne Arundel County, eight Marcey Creek components were identified and twelve Accokeek components were identified. Overall this represents a 50% increase in the number of sites with Accokeek components as compared to the number of sites with Marcey Creek components in all three river drainages.

The second characteristic difference between the Marcey Creek and Accokeek phases is an increase in the amount of artifacts recovered from sites with Accokeek components as compared to Marcey Creek components. Steponaitis (1980:29) suggests that this may indicate long term occupation of the site by greater numbers of people.

The final characteristic difference between the Marcey Creek and Accokeek phases is the presence of oyster shell middens in association with Accokeek components. McNett and Gardner (1971) have postulated that the intensive utilization of oysters as a food resource did not occur until after ceramics were introduced, as ceramic vessels were used to boil oysters. They argue that the model for settlement during the Accokeek phase included base camps located near estuarine zones and interior procurement camps. Base

See Continuation Sheet No. 34

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   34  

camp sites should include a large amount of ceramics and a variety of tools associated with a broad base of activities. Interior procurement sites should have tools associated with male activities, such as hunting, and little pottery. Steponaitis (1980:29 and 1983:figure 8.24) tested this model of settlement in the Patuxent River drainage and found base camps located near both estuarine and riverine zones. The amount of ceramics recovered from both localities was similar in their relative frequencies. Steponaitis points out that recent evidence (Wilke and Thompson 1977) indicates that oyster exploitation took place for several thousand years before the appearance of pottery. Hence the association between oyster utilization with the appearance of ceramics is not valid. Steponaitis further argues that intensive utilization of oysters as a food resource was probably not the reason for the increased sedentism implied by the higher number of artifacts present in Accokeek components and their occurrence in association with oyster shell middens. Instead, intensive oyster utilization combined with the intensive utilization of other resources (including small mammals such as gray fox, gray squirrel, beaver, and woodchuck, as well as reptiles such as snakes, and possibly some cultigens, supported a shift toward increased sedentism and population growth. (Steponaitis 1980:29, Wright 1973:36 (Martins Pond Zones 1-2)).

Political Organization and Religion

Ranked Societies probably began to develop in the Middle Atlantic Region during the BROADSPEAR and FISHTAIL Traditions of the terminal Archaic. Custer suggests that the storage of food resources and the intensification of food production which resulted in greater sedentism also necessitated the need for more efficient management of the group and its resources. While chiefs did not emerge during this period, certain individuals emerged as leaders or managers who were accorded greater social significance. (Custer 1984:98, see also Fried 1967). Binford (1962) suggests that as populations grew, the degree of personal contact between members of a group decreased and that symbols became an important part of group communication. Symbols were used to distinguish between individuals of different status. Use of items manufactured from non-local materials was one way to establish and communicate social

See Continuation Sheet No. 35

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   35  

status. During the terminal Archaic, broad based trade networks were established which allowed the flow of exotic materials from one region to another; these broad based trade networks continued into the Early Woodland Period (Stewart 1989:54, Brose 1985:43).

Stewart (1989) notes a change in trading/exchange patterns in the Middle Atlantic Region between 600 and 500 B.C. Prior to 600 B.C., patterns of trade established during the Late Archaic Period prevailed. Items exchanged in the network tended to be utilitarian in nature and were rarely recovered in ritual contexts, such as caches or burials. The items functioned as status items among the living members of the society. After 600 B.C. the majority of the trade items tend to occur at mortuary sites in burials. There are some known caches and occasional occurrences of trade items on habitation sites (Stewart 1989:52-58). Gardner (1982:71) argues that the small number of status burials at any given site implies restricted access to traded items based on individual status. Stewart (1989:59) suggests that "[t]he level of social complexity achieved by a group did not preclude its members from procuring exotic items through trade; however the meaning which with these artifacts were imbued and the ways they were used once procured are idiosyncratic products of these different social organizations".

After 600 B.C. movement of materials through the network was associated with Adena, Middlesex, or Delmarva Adena cultural groups. Traits associated with the Adena and Adena like cultural groups continued until 200 A.D. in parts of the Middle Atlantic Region. The type of trade network employed by the various groups during the Early Woodland Period is unknown. Items moving through the network tended to be finished items. Many of the items circulated had first appeared in the exchange network during the terminal Archaic Period. New items introduced into the exchange network during the Early Woodland Period included New York Onondaga chert, and cherts from Canada, Indiana, and Tennessee. Ritchie (1965:200-201) suggests a Chesapeake Bay locale as a source of some Adena materials found in New York. Ritchie's argument is based on the assumption that the presence of Great Lakes copper in the Middle Atlantic Region and the presence of Marine shells from the Middle Atlantic in New York is an indication of a chain like link in the trade network route. Stewart argues (1989:59) that the variability of items within the assemblage indicates that there was no specialized production center at either end of the network. Stewart further state that: "No chain-like exchanges moving

See Continuation Sheet No. 36

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   36  

products between the Middle Atlantic Coastal Plain and the Adena Heartland can be demonstrated. Few items of coastal origin appear in the areas between the presumed ends of such a trade connection, or vice versa, suggesting that transactions took place more directly between coastal folk and groups living near Ohio Valley material sources or production centers". (Stewart 1989:58).

Early Woodland trade networks in the Middle Atlantic Region were associated with Adena or Adena like characteristics. Adena in the Middle Atlantic is distinguished by the presence of distinctive artifacts similar in style and raw material to artifacts from sites in Ohio, the Adena heartland. These artifacts are found almost exclusively in burial contexts at special mortuary sites. The types of specialized artifacts include rings, bracelets, and beads manufactured of copper, gorgets, hematite hemispheres, block end tubular pipes, celts or points manufactured from copper or non-local lithic material, and fossils (Brose 1985). Specialized mortuary sites in the Middle Atlantic Region include Rosenkrans in the Upper Delaware Valley of New Jersey (Kraft 1976), several sites in Delaware (Killens Pond, Saint Jones, and Frederica) (Custer 1984a:118-123, Thomas 1976, Thomas 1970, Stewart 1970, Jones 1963, Cabbage 1941), the Nassawango and Sandy Hill sites on the Eastern Shore of Maryland (Wise 1974, Ford 1976) and the West River Site in Anne Arundel County (Ford 1958, 1976).

The West River site (18AN18) in Anne Arundel County is located on a high steep ridge overlooking the Chesapeake Bay. A large feature was excavated at the site in the 1950's by Ford (1976). The feature was a ceremonial pit measuring twenty feet north/south by fourteen feet east/west. Two smaller pits were located in the bottom of the pit. One of the smaller pits contained five cremation pits with varying amounts of cremated bone, ash, charcoal, lumps of red ocher, and burned clay. This pit was dug solely for the purpose of cremation, all cremated remains were removed almost completely from the pit and deposited elsewhere. No artifacts were found in the cremation pit which were similar to those in a nearby burial pit or those found eroding out of the bluff. The other smaller pit within the ceremonial pit was a reburial pit dug solely for the purpose of redepositing the cremated remains. There was no evidence of fire disturbance at the base of the reburial pit. A cache of blades was found within the reburial pit. Other artifacts accompanying the reburied cremations included ceremonially "killed" blades (i.e. the blades had been

See Continuation Sheet No. 37

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   37  

---

broken into smaller pieces), block end tubal pipes, copper beads, and hematite. Ford noted that 62% of the blades recovered had been intentional mutilated (or "killed"). Lithic material recovered included Flint Ridge Ohio flint, cherts from Harrison County, Indiana and West Virginia, Jasper from eastern Pennsylvania, and chalcodony. The majority of the blades recovered were Adena type blades.

The presence of Adena-like sites within the Chesapeake Bay Region provides information concerning the religious or ceremonial aspects of the late Early Woodland and early Middle Woodland Periods. However, these sites are also anomalies within the region which raises questions concerning the relationship of Ohio Adena and the Adena-like sites in Maryland, Delaware, and New Jersey. Further research may provide insights into the nature of these relationships.

Middle Woodland Period, 400 B.C. - 800 A.D.

The Middle Woodland Period in the Middle Atlantic Region marks a change in the subsistence/settlement patterns of the region. Larger macroband base camps appear surrounded by smaller microband base camps. The decline in exchange networks continued throughout the period, although elaborate mortuary ceremonialism continued through at least the Popes Creek phase of the Middle Woodland period.

Environment

The Middle Woodland Period occurred during the Sub-Atlantic climatic episode. Climatic conditions during the period were essentially modern in character. (Custer 1984a:91, Carbone 1976:123, 192). The Sub-Atlantic episode was marked by decreased sea level rise and increased estuarine environmental stabilization (Belknap and Kraft 1977:figure 8). Vegetation during this episode in the Middle Atlantic Region included oak, chestnut, and hickory forests in the upland areas of the coastal plain and evergreen forests in the lowland coastal plain (Braun 1967:245). Faunal species dominate in the coastal plain included deer, small mammals (such as rabbit and squirrel) turkey, and water fowl (Shelford 1963).

See Continuation Sheet No. 38

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   38  

---

Middle Woodland Chronology and Technology

The Middle Woodland Period, of the western shore of the Maryland Coastal Plain Province, is divided into two phases, the Popes Creek phase (400 B.C.-200 A.D.) and the Selby Bay phase (200 A.D.-800 A.D.).

Popes Creek phase temporal markers are Popes Creek Net-Imprinted ceramics, first identified at the Popes Creek site on the Potomac River, Prince Georges County, Maryland. Popes Creek ceramics are tempered with medium to coarse sand which makes up 50 to 70% of the paste. The vessels are coiled construction, wide mouthed jars, with semi-conical or conical bases. Surfaces of Popes Creek ceramics are net-impressed on the exterior and scored on the interior. Decoration of vessel rims include incised horizontal lines with occasional finger smoothed and incised chevron patterns (Egloff and Potter 1982:99, Stephenson and Ferguson 1963:92-96). Popes Creek ceramics are found north of the James River in the Coastal Plain and Piedmont Provinces of Maryland and Virginia (Stewart 1982:74).

Popes Creek ceramics are generally net-impressed. However, a rare variant surface treatment of vessel exteriors includes cordmarking. Holmes (1903:154) reported finding Popes Creek cordmarked ceramics at the Popes Creek Site. Cordmarked Popes Creek ceramics have also been recovered at other Potomac River sites such as the White Oak site in Virginia and the Accokeek Site in Maryland (Waselkov 1982:228-233, Stephenson and Ferguson 1963:93). Egloff and Potter (1982:99) suggest that the cordmarked Popes Creek variety probably represents a continuation of the cordmarking tradition, exemplified by Accokeek ceramics, into the Popes Creek phase. However, the rare occurrence of cordmarked Popes Creek probably represents a decline in the popularity of the cord marking tradition.

Wright (1973:20) recovered ceramics similar to Popes Creek ceramics during survey of the Severn River. These ceramics have net-impressed exteriors with scored interiors. The temper of the sandy paste includes crushed quartz and shell. These ceramics are similar to ceramics recovered by Stearns (1943:6-8, pls VIII-IX) on the Patapsco River at the Fort Smallwood Site, in Anne Arundel County. Wright argued that these ceramics were sufficiently different from Popes Creek ceramics to constitute a separate

See Continuation Sheet No. 39

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   39  

---

ceramic type, and called the new ceramic type Smallwood ware. He suggested that Smallwood ceramics might be a diagnostic marker for a phase contemporaneous with, but distinct from the Popes Creek phase. However, it is probable that Wright's Smallwood ceramics are a local variant of Popes Creek ceramics and do not constitute a diagnostic marker for a separate Smallwood phase (Al Luckenbach, personal communication, January 1990).

Popes Creek ceramics are similar to ceramics found outside the western shore of the Maryland Coastal Plain. These types include Pottery Hill Net-Impressed and Roughed ceramics of the Prince George ceramic series in Southern Virginia (Egloff and Potter 1982:99) and Albemarle Cordmarked and Net-Impressed ceramics in Virginia (Evans 1955, Stewart 1982:table 2, 77). Stoney Creek ceramics, of southern Virginia, are also associated with Popes Creek ceramics (as well as Accokeek ceramics) (Egloff and Potter 1982:99-103). Brodhead Net-Impressed ceramics of the Upper Delaware River Valley are contemporaneous with Popes Creek ceramics (Kinsey 1972:456-457). Colburne ceramics in Delaware are also contemporaneous with Popes Creek ware. Colburne ceramics are tempered with clay fragments or nodules and are either cordmarked or net-impressed (Custer 1984a:87, Griffith and Artusy 1977, Artusy 1976:3).

Popes Creek Ceramics are associated with Rossville points, "...thick, lozenge-shaped points of medium size" (Ritchie 1961:46). Rossville points are found from southern New England to the Chesapeake Bay. On Martha's Vineyard, Massachusetts, Rossville points are found in association with Lagoon points. Lagoon-like points have also been recovered in association with Calvert points of the earlier Accokeek phase (Steponaitis 1980:15). Radiocarbon dates from the Martha's Vineyard area show a time span of 520 to 100 B.C. for Rossville and Lagoon points. Ritchie (1969:224-227) suggests that the Lagoon type is more common toward the earlier part of the time span, than the Rossville type. If this is true then the suggested model for Accokeek and Popes Creek phase projectile point occurrence is Calvert points associated primarily with Accokeek ceramics during the Accokeek phase and Rossville points associated with Popes Creek ceramics during the Popes Creek phase. Some overlap of Calvert points with Rossville points at the

See Continuation Sheet No. 40

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   40  

interface of the two phases is suggested. The continuation of the cordmarking tradition of ceramics into the early Popes Creek phase in some areas suggests that projectile point styles also experienced differential change in different areas during the transition from the Accokeek phase to the Popes Creek phase.

The tool assemblage associated with the Popes Creek phase is known from sites in the Potomac Valley with Popes Creek components. Knives, grinding stones, mortars, axes, choppers, hammerstones, and bone awls have all been recovered (McNett and Gardner 1975).

Potter and Egloff (1982:99) place Popes Creek ceramics between 500 B.C. and 200 A.D. A radiocarbon date of  $490 \pm 95$  B.C. from the Loyola Retreat Site in Maryland was obtained in association with Popes Creek ceramics (Gardner and McNett 1971:45). Radiocarbon dates associated with Rossville points include  $520 \pm 120$  B.C. and  $430 \pm 80$  B.C. for the Pratt Site in New York,  $480 \pm 80$  for the Miller Field Site, New Jersey (Kinsey 1972:436),  $360 \pm 100$  B.C. from the Peterson site, New Jersey and  $100 \pm 80$  B.C. for the Vincent Site, New Jersey (Ritchie 1969). Based on the available radiocarbon dates, Steponaitis (1980:15) estimates that temporal span for the Popes Creek phase between 400 B.C. and 200 A.D.

The Popes Creek phase is followed by the Selby Bay phase (200-800 A.D.). Mockley Cordmarked, Net-Impressed, and Plain ceramics are the temporal markers for this phase. Mockley ceramics are tempered with crushed shell which makes up 20 to 30% of the paste. Vessels are medium to large with rounded or semi-conical bases and are of coiled construction. Cordmarking is the dominant form of surface treatment at the beginning of the phase, but decreases as net-impresing increases. Generally the rims of the vessels are not decorated. A small portion of the vessels are smoothed below the rim and decorated with incised cross-hatching, diamonds, chevrons, or parallel lines. Occasionally the rims are punctated. Mockley ware is distributed north of the James River, Virginia on the western coastal plain of Virginia, in the coastal plain and Piedmont of Maryland, and in Delaware (Egloff and Potter 1982:103-104, Stephenson and Ferguson 1963:103-109, Stewart 1982:76, and Griffin 1982:54).

See Continuation Sheet No. 41

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   41  

Evans (1955:44-49) originally defined Mockley ceramics as part of the Chickahominy Ceramic Series. However, the Chickahominy series includes all shell tempered ceramics on the Virginia Coastal Plain and spans at least 1500 years. Chickahominy Cordmarked ceramics and Potts Net-Impressed and Roughed ceramics are identical to Mockley Cordmarked and Net-Impressed ceramics (Egloff and Potter 1982:107). The remaining Chickahominy ceramics, as defined by Evans, are Late Woodland ceramics and will be discussed in the section detailing the Late Woodland.

Mockley ceramics are found in association with Selby Bay knives. Selby Bay knives had no basal modification and were manufactured from non-local materials which include rhyolite, argillite, and jasper (Steponaitis 1980:16 and Wright 1973:21). The artifact assemblage associated with the Selby Bay phase also includes elliptical two-holed gorgets, hematite squares, grinding stones, three-quarter grooved axes, bifacially retouched flakes, and worked bone items such as awls (a possible turtle carapace cup was recovered at the Luce Creek Site in Anne Arundel county) (Wright 1973:13).

Radiocarbon dates for the Selby Bay phase are from various regions of the Middle Atlantic Region. Wise (1975:25-26) reports a date of A.D. 200 ± 90 for the Carey Farm Site in Delaware. The Mockley component of the Piscataway Site in Maryland has been dated to A.D. 200 ± 90 (Wolfing 1970:3) Wright (1973:29) reports a radiocarbon date of A.D. 580 ± 120 for the Luce Creek Site in Anne Arundel County. The Bryam Site in Pennsylvania was dated to A.D. 605 ± 135 (Kinsey 1973:22), And Handsman and McNett (1974:22) have reported a date of A.D. 815 ± 95 for the Loyola Retreat Site in Maryland. Based on the range of these date, the Selby Bay phase is placed between A.D. 200 and 800 (Steponaitis 1980:16).

Subsistence, Settlement, and Demographics

Gardner (1982) and Handsman and McNett(1974:10, 20), suggest that the Popes Creek phase (400 B.C.-200 A.D.) was an in situ development in the Middle Atlantic Region. Popes Creek is seen as a continuation of and an intensification of the subsistence patterns established during the Accokeek phase. Large semi-permanent macroband base camps were located along estuarine or riverine areas of major river drainages, with associated satellite extraction or procurement camps located in areas around the base

See Continuation Sheet No. 42

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   42  

camp. These extractive sites included areas for hunting and areas for harvesting anadromous fish. A variety of faunal remains were recovered from the Loyola Retreat and Martins Pond (Anne Arundel County) sites in Maryland. These resources included deer, beaver, squirrel, waterfowl, turtle, catfish, sturgeon, soft clams, oysters, and fresh water mussels (Handsman and McNett 1972:8-9, Wright 1973:11).

Popes Creek sites are abundant in the Potomac River drainage. However the number of Popes Creek sites decreases to the north of the Potomac. Steponaitis (1980) identified thirty-seven sites with Popes Creek components along the Patuxent River in Anne Arundel, Prince Georges, Calvert, and St. Marys County, Maryland. North of the Patuxent, in the South River drainage, Steponaitis identified only eight sites with Popes Creek components. Wright (n.d.) identified ten sites with Popes Creek components along the Severn River drainage to the north of the South River. In addition to the drop in the number of sites with Popes Creek components to the north of the Patuxent River during the Popes Creek phase, there is also a drop in the number of sites inhabited between the Accokeek phase and the Popes Creek phase.

Handsman and McNett (1974) and Gardner (1982) attribute this shift in settlement pattern to improved adaptations to a more stable environment. However, Luckenbach, et.al. (1987) argue that this shift is due to other factors. They suggest that the cultural group of the "classic" Popes Creek was limited geographically to the Potomac and Patuxent River drainages. The area north of the Patuxent was possibly inhabited by frontier northern Algonquian communities which displaced the local population (i.e. the Popes Creek people). An alternative explanation would place Delmarva Adena populations in the area instead of the Algonquian populations. Evidence supporting migration of Adena peoples into the area includes the Adena West River site in Anne Arundel County (Ford 1976, 1958) and the presence of a lobe stemmed red jasper projectile point, similar to the West River assemblage points, at the Luce Creek Site on the Severn River in Anne Arundel County (Wright 1973:13).

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   43  

---

Luckenbach, et.al. (1987) cite the discontinuity between lithic materials of the Popes Creek phase and the Selby Bay phases of the Middle Woodland as evidence of the possible movement of Algonquian peoples into the area. Popes Creek lithic materials tended to be entirely local. Steponaitis (1980:30) found that during the Popes Creek phase, the most commonly used lithic material along the Patuxent River drainage was quartzite (46%) and quartz (41%) followed by rhyolite (11%), chert (1%), and jasper (1%). However, during the Selby Bay phase patterns of lithic material usage were completely different from Popes Creek patterns. Lithic materials recovered from the Ruf Site (18AN65) along the Patuxent River indicate that Blue Ridge rhyolite from the Piedmont of Maryland and Pennsylvania was the most frequently used lithic material (56%) followed by argillite (31.4%), Onondaga chert from New York (4%), quartzite (5%) and quartz (3.6%) (Mayr 1958).

Luckenbach, et.al. (1987) also cite a shift in the relationships of ceramic types from south to north as evidence of the possible movement of Algonquian peoples into the area. Ceramics of the Popes Creek phase in Maryland are affiliated primarily with ceramic types found to the south of Maryland such as Prince George, Stoney Creek, and Albemarle ceramics of Virginia (Handsman and McNett 1974, Gardner 1982, Egloff and Potter 1982:99). However, Mockley ceramics of the Selby Bay phase, while distributed to some extent throughout Virginia, are primarily distributed to the east and north of Maryland in Delaware and New Jersey (Luckenbach, et.al. 1987). The shift in the distribution of ceramics as well as a preference for northern lithic raw material, points toward greater affinity with populations in the north, if not migration into the Maryland Coastal Plain Province from the north.

During the Selby Bay phase there is an increase in the number of sites with associated Selby Bay components as compared to the number of sites with Popes Creek components in Anne Arundel County. Settlement patterns during the Selby Bay phase indicate that a variety of environmental zones were being exploited. Handsman and McNett (1974:31) and Wright (1973), based on their work in the Potomac and Severn River drainages, suggest that the type of settlement pattern being utilized was based not on a macroband base camps surrounded by numerous smaller sites as in previous phases of the Woodland Stage; but on a pattern where numerous sites, both large and small, were oriented toward the intensive utilization of

See Continuation Sheet No. 44

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   44  

---

locally available resources and horticultural cultigens. Steponaitis (1980:31) however, feels that the large size of some Selby Bay phase sites is indicative of the repeated use of a site rather than large group size.

A broad base subsistence is indicated by the faunal and floral remains recovered at Anne Arundel County sites with Selby Bay components. Mayr (1972) noted deer remains, reptile bones, oyster shell, and burned walnut shell at the Ruf site on the Patuxent River. Excavation of the Dorr site (18AN19), also on the Patuxent River, yielded the remains of deer, beaver, turkey, turtle, tortoise, sturgeon, oyster, razor clam, and freshwater mussel (Polgasse, et.al. 1989, Croney, et. al. 1976, Woodward 1969:67). Wright (1973) also recovered a variety of remains from sites on the Severn River: deer, small mammals, drum fish, soft shell clam, and blue crab (Back Creek site, Luce Creek site, and Martins Pond site zone 3).

Political Organization and Religion

Ranked societies, first noted during the Early Woodland Period, probably continued into the early Middle Woodland Period. However, Stewart (1989:59) notes a decrease in the volume moving through the exchange systems primarily between 400 B.C. and A.D. 200 (the Popes Creek phase). Binford (1962) has suggested that exotic material cultural items were used to symbolically display status. Hence, it is possible that a decline in volume in the exchange network could indicate a decline in the prevalence of ranked societies. Stewart (1989:59) points out that between 400 B.C. and A.D. 200 network exchange patterns indicate that group territories became more restricted, possibly resulting in the restructuring of settlement patterns. It is possible that restructured settlement patterns may have resulted in a similar restructuring of group political organization.

During the Selby Bay phase (A.D. 200 - 800), exchange of exotic materials increased again. Luckenbach et, al. (1987:24) suggest that population movements from the Northern Algonquian homeland into the Maryland Coastal Plain may be responsible for this increase in trade. A shift in settlement patterns, first noted during the Popes Creek phase, from small fission-fusion bands to a more stable settlement organization occurs throughout the Selby Bay phase. This shift may be related to an influx of

See Continuation Sheet No. 45

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   45  

---

northern Algonquians. Custer (1986:154-155) based on the work of Potter (1982) and Waselkov (1982) suggests that this settlement pattern reorganization culminated in the establishment of minimal chiefdoms by the late Late Woodland Period.

Religious ceremonialism or ritual also appears to have been affected by the shifts in settlement patterns. Custer notes that by 0 B.C. the distinctive Delmarva Adena trade and exchange networks and specialized mortuary ritual treatment have disappeared from the archaeological record. The disappearance of distinctive burial treatment and exchange networks associated with the Delmarva Adena does not imply that all ritual practice ceased. Instead it indicates that ritual behavior also changed at the same time that change appeared in the settlement patterns and political organization. What these changes mean in terms of material cultural remains has not yet been established archaeologically in the Maryland Western Shore Coastal Plain Province.

Late Woodland Period A.D. 800 - Contact

The Late Woodland Period in the Middle Atlantic region marks the first appearance of agriculture in the region. Cultural traditions and subsistence/settlement patterns changed after A.D. 1000 from a primary reliance on seasonal movement between available resources to a sedentary life style which included the creation of large villages. The end of the period marks the first contact between Europeans and Native Americans. (Custer 1984a).

Environment

The Late Woodland Period occurred during the Sub-Atlantic climatic episode. Climatic conditions during the period were essentially modern in character. (Custer 1984a:91, Carbone 1976:123, 192). Global climate may have fluctuated in the past 1000 years, effecting agriculture and the social systems which relied upon agriculture for subsistence; however, at present, climatic fluctuations are poorly understood. (Custer 1984a:154, Gouldie 1977, Carbone 1976). The Sub-Atlantic episode was marked by decreased sea level rise and increased estuarine environmental stabilization (Belknap and Kraft 1977:figure 8). Vegetation during this episode in the Middle Atlantic Region included oak, chestnut,

See Continuation Sheet No. 46

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   46  

and hickory forests in the upland areas of the coastal plain and evergreen forests in the lowland coastal plain (Braun 1967:245). Faunal species dominate in the coastal plain included deer, small mammals (such as rabbit and squirrel) turkey, and water fowl (Shelford 1963).

Late Woodland Chronology and Technology

The Late Woodland Period on the western shore of the Maryland Coastal Plain is divided into two phases, the Little Round Bay phase (A.D. 800-1250) and the Sullivans Cove phase (A.D. 1250-contact in the seventeenth century).

The Little Round Bay phase is marked by the presence of Rappahannock Incised and Townsend Incised ceramics. Both Rappahannock Incised and Townsend Incised ceramics are shell tempered (shell making up 10 to 20 % of the paste). The vessels are wide mouthed jars with semi-conical bases. The walls of these vessels tend to be thinner than the vessel walls of Mockley ware found during the previous Selby Bay phase.

There are eight varieties of Rappahannock Incised ware, the type is based on the motif incised around the exterior of the vessel below the rim. Motifs included horizontal bands and zigzags, and squares or triangles which were occasionally filled in. Generally, the more complex geometric forms occurred during the period 900 through 1300 A.D. Radiocarbon dates for these ceramics include A.D. 1085  $\pm$  75 and A.D. 1285  $\pm$  85 from sites in Delaware (Griffin 1982:50).

Evans (1955) originally designated Rappahannock Incised ceramics as Chickahominy Incised Ware, part of the Chickahominy Ceramic Series. Definition of the Townsend Ceramic Series by Blaker (1963:14-22) and Griffith (1977,1980) has resulted in the inclusion of Rappahannock Incised ware in the Townsend Series. Rappahannock Incised ware was associated with Rappahannock Fabric Impressed ceramics. However, Rappahannock Fabric Impressed ware occurs throughout the period 900-1600 A.D. and is not a good temporal marker for either the Little Round Bay or Sullivans Cove phases. Rappahannock Fabric Impressed was originally designated Chickahominy Fabric Impressed by Evans (1955). Both types of Rappahannock ceramics (Incised and Fabric Impressed) and Townsend Incised ceramics are found in Virginia and the Delmarva Peninsula,

See Continuation Sheet No. 47

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number     E     Page   47  

as well as the western shore of the Maryland Coastal Plain Province. (Custer 1984:149, Egloff and Potter 1982:107, Griffith 1982:45).

Bowman's Brook Incised ceramics are contemporaneous with Rappahannock Incised and Townsend Incised ceramics. Bowman's Brook is tempered with quartz, mica, and feldspar grit. Exterior walls of Bowman's Brook vessels are either decorated with cord-wrapped stick impressions on the lip or with incised horizontal lines on the plain neck. Bowman's Brook ware is generally limited to southeastern Pennsylvania, New Jersey and New York (Kinsey 1972:465); but, sherds of this ceramic have been recovered at two sites in Anne Arundel County: the Purcell site on the Magothy River (Barse et.al. 1975:5) and the Obrecht site on the severn River (Peck 1977:25, 1976). Peck places Bowman's Brook between A.D. 1000 and 1350.

Projectile point types associated with the Little Round Bay phase include Jacks Reef Pentagonal and Jack Reef Corner Notched points. Both types are distributed through Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Ontario, Michigan, and Ohio (Hranicky and Painter 1988:39 and 65, Steponaitis, 1980:16, Kinsey 1972:439, Ritchie 1961:28). Levanna points are also associated with this phase. Levanna points are fairly large triangular points which generally have concave bases (Ritchie 1961:31). Levannas are distributed through Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Ontario, and into New England (Hranicky and Painter 1988:103, Steponaitis, 1980:16, Kinsey 1972:442, Ritchie 1961:31).

Other items in the Little Round Bay material culture assemblage include bone awls, obtuse angle pipes, grinding stones, and pitted stones (Barse et. al. 1975:4, Wright 1973:17-18, 23).

The Little Round Bay phase is temporally placed between A.D. 800 and 1250 by Steponaitis (1980:16). This assignment is based on radiocarbon dates associated with Jacks Reef points at Kipps Island (A.D. 630 ± 100) and Hunters Home (A.D. 950 ± 250), both in New York (Ritchie 1965:228, 230), and at the Faucett site (A.D. 790 ± 120) in the upper Delaware River Valley. In addition, radiocarbon dates for Townsend ware in Delaware (A.D. 1085 ± 75 and 1285 ± 85) support this temporal span.

See Continuation Sheet No. 48

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   48  

The Sullivans Cove phase follows the Little Round Bay phase, Sullivans Cove is marked by the presence of Sullivans Cove ware, which was first defined by Wright (1973:22-23) as "...thin-walled, lightly shell tempered vessels with conoidal bases, constricted necks, and partially smoothed cordmarking." Decoration includes cord wrapped stick impressions and horizontal lines and herringbone patterns. A radiocarbon date of A.D. 1385 ± 55 was obtained at the Waveland Farm Site on the Severn River (Anne Arundel County) in association with Sullivan Cove Ware (Peck 1978:17).

Rappahannock Incised ceramics with less complex motifs are also associated with the Sullivan Coves phase. The occurrence of less complex motifs begins in circa A.D. 1285 in Delaware and possibly earlier in Maryland (Griffith 1980:30-33, 1977:146-147). Townsend Herringbone, part of the Townsend Ceramic Series, is also associated with the Sullivan's Cove phase. Townsend Herringbone was a shell tempered, fabric impressed ceramic with decoration on the neck in the form of cordmarked horizontal lines and an incised herringbone pattern. This design motif probably appeared after A.D. 1350. (Egloff and Potter 1982:107, Steponaitis 1980:17, Griffith 1977, Blaker 1963:18-19)

Ceramics of the Potomac Creek Complex, centered to the south and west of the Maryland Coastal Plain are contemporaneous with Sullivan's Cove ceramics. Potomac Creek ceramics are tempered with crushed quartz and/or grains of sand (20-30% of the paste). The fired clay is hard and compact and the vessel walls are very thin. Potomac Creek Plain ceramics have exterior surfaces which are either unmarked or smoothed over cordmarked. Potomac Creek Cord Impressed ceramics are either impressed with a cord wrapped stick or paddle, or are cord impressed around the rim area with a twisted cord producing vertical, horizontal, or geometric corded motifs (Egloff and Potter 1982:112, Stephenson and Ferguson 1963:113-120, Schmitt 1952:63, Holmes 1903:155-156). Potomac Creek ware is found mainly in the interior of the western Virginia Coastal Plain. It has been reported as far south as the James River in Virginia, and is also found on the western shore Coastal Plain of Maryland and in central Delaware (Custer 1984a:171, Egloff and Potter 1982:112, and Steponaitis 1980:17). Clark (1980:8) dates Potomac Creek from circa A.D. 1300 through contact.

See Continuation Sheet No. 49

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   49  

Moyaone ware, is the final ceramic type associated with the Sullivan Cove phase. Moyaone ware was first described as Potomac Creek Sand-Tempered ware by Schmitt (1965:11-12) when he recovered it on the Patawomeke Site (an historic Algonquian site). Stephenson and Ferguson (1963:120-125) redefined this ware as Moyaone ware. Moyaone is constructed of compact clay with fine micaceous sand grains. Occasionally coarse sand or quartz was added to the paste. The vessels are globular with rounded bases. Three types of Moyaone ware are recognized: Moyaone Plain, Moyaone Cord-Imprinted, and Moyaone Incised. Moyaone Plain tended to be manufactured as bowls rather than jars. The exterior surface is marked with a cord wrapped paddle and then smoothed. Moyaone Cord-Imprinted ware exteriors are cordmarked and then either entirely or partially smoothed over. Cord impressions were generally left on the rim. Moyaone Incised exteriors are either smoothed or paddle malleated. The rim area is decorated with horizontal or randomly incised lines, or with crosshatching or chevrons (Stephenson and Ferguson 1963:123-124). Radiocarbon dates of A.D. 1310 and 1460 (uncorrected) from the White Oak Site, Virginia are associated with Moyaone ware (Waselkov 1982:258). Moyaone pottery was probably manufactured until the contact period.

The Madison projectile point is associated with the Sullivans Cove phase. Madisons are small triangular points (Ritchie 1961:33). Custer (1984a:148) notes that after A.D. 1000, triangular points become smaller, which suggests that the smaller size of the points may be related to the introduction of the bow and the arrow around A.D. 1000. Prior to the introduction of the bow and arrow, projectile points were used solely as spear points. Madison points are distributed widely in the eastern United States and Ontario, Canada. This point is considered Iroquoian for part of the northeast (Ritchie 1961:34).

Other artifacts within the Sullivans Cove material cultural assemblage included grinding stones, convex-edged end scrappers, knives, and small cores of locally obtainable quartz and jasper pebbles used to produce irregular flake tools (Wright 1973:16-17, 22-23).

See Continuation Sheet No. 50

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   50  

---

Late Woodland Settlement and Subsistence

Custer (1984a:146) suggests that vast changes occurred in the settlement and subsistence patterns of prehistoric Native Americans during the Late Woodland Period. Prior to 1000 A.D., settlement and subsistence patterns centered around intensive hunting and gathering with some reliance on cultigens. Groups continued the seasonal round of movement from base camp to base camp with occasional forays to procurement/extractive sites.

Wright (1973:23-24) suggests that the pattern of settlement during the Little Round Bay phase centered around a few large macroband base camps at estuarine/riverine transitional zones, surrounded by numerous small microband base camps. The Obrecht, Purcell, and Elkridge sites in Anne Arundel County are examples of this settlement-subsistence pattern.

The Obrecht site is located near the head of the Severn River. A large oyster shell midden extends for 600 feet along the bank of the river. Artifacts recovered in the midden include Mockley sherds from the Selby Bay phase of the terminal Middle Woodland and Townsend Series Ceramics from the Little Round Bay phase of the Late Woodland Period. Fifteen smaller oyster shell lenses were associated with the large midden. At least six of these smaller lens had Little Round Bay components (four of the components were mixed with Selby Bay components). These six smaller lenses were located at the north end of the site and were associated with two hearths and two fire-cracked rock concentrations. Peck (1976) suggests that this area of the site was associated with the processing and cooking of oysters. Other reported food remains included deer, bear, raccoon, beaver, other small mammals, turtle, fish, and crab. Obrecht is interpreted as a large macroband base camp. Several small satellite sites, or microband base camps were located downstream along the Severn. Wright (1973) interprets these sites as smaller microband base camps associated with the Obrecht site.

The Purcell site is located on the Magothy River on a peninsula between two creeks. The site has an oyster shell midden at least eighty feet in length. Faunal and floral remains recovered within the midden included deer, turtle, fish, bird, oyster, and charred hickory nuts. A grinding stone fragment was also recovered which suggests that the hickory nuts were gathered

See Continuation Sheet No. 51

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   51  

in the vicinity and processed at the site. Barse et. al. (1977:9) suggest that the Purcell site was a microband base camp, probably occupied during the fall.

The Elkridge site was a large single oyster shell midden located on the riverine portion of the Patapsco River at the confluence of three major tributaries. The site is also located near the head of an estuary and would have been ideally located for the annual exploitation of the spring runs of spawning fish. Elkridge represents a macroband base camp. Prior to sand and gravel operations in adjacent areas, Elkridge was surrounded by numerous small microband base camps (Clark 1970, Stearns 1949).

Procurement/extractive sites with Little Round Bay components have been located in the interior coastal plain and in the Piedmont of the western shore of Maryland. These sites were located on creeks and were probably nut gathering camps. (Barse, et.al. 1977, Clark 1976).

Wright (1973) suggests that there is a smaller number of large macroband base camps as compared to the number of microband base camps during the Little Round Bay phase. Survey along the Patuxent and Severn Rivers indicates that there is a decrease in the number of sites with components dating to the Little Round Bay phase as compared to the number of sites with Selby Bay components. At the same time that a decrease in the number of components with Little Round Bay components is occurring on the Patuxent and Severn Rivers, there is an increase in the number of Little Round Bay components on the South river as compared to the number of Selby Bay components. Whether this data reflects an increase in microband base camps and a decrease in the number of macroband base camps is unclear. (Steponaitis 1983, 1980, 1978 and Wright n.d.).

Settlement and subsistence patterns began to change toward the end of the Little Round Bay phase, at circa A.D. 1000. Custer argues that the increased fissioning of macroband camps prior to A.D. 1000 (during the Little Round Bay phase) disrupted social networks and led to a breakdown in trade/exchange networks. Custer notes that after A.D. 1000 exotic raw materials and artifacts were no longer used as grave goods. Less rhyolite from the Piedmont of Maryland and Virginia is found in the Coastal Plain Province. Steponaitis (1980:32) noted a similar trend in the Patuxent River basin. During the Little Round Bay phase 50% of the lithic raw

See Continuation Sheet No. 52

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   52  

material used to manufacture tools was quartz followed by rhyolite (24%), quartzite (13%), chert (9%), argillite (2%), and jasper (2%). However, during the Sullivans Cove phase, 71% of the raw material utilized was quartz, followed by quartzite (13%), chert (12%), rhyolite (3%) and jasper (1%). Stewart (1980:394-395) suggests that changes in subsistence patterns affected lithic usage during the Sullivans Cove phase. After A.D. 1000 groups became more dentary than previous groups had been, as they intensified their utilization of agriculture as an economic base. Stewart notes less use of the upland areas of the Piedmont where rhyolite is located after the switch to agriculture.

The first appearance of agriculture in the Middle Atlantic Region is unknown. Domesticated plants probably appeared prior to A.D. 1000 but, as Flannery (1968) points out, it is difficult to clearly differentiate between intensive horticulture and the actual practice of agriculture in the archaeological record. The process of change from intensive gathering and horticulture to agriculture was gradual. Hunting and gathering still continued, even with the appearance of agriculture. Moeller (1975) reports recovering a variety of wild plant remains in association with corn from features at the Faucett site in Pennsylvania. Arminger (1975) and Kinsey and Custer (1982) recovered similar evidence at sites in Lancaster County, Pennsylvania.

Agriculture supplied a surplus which allowed a sedentary life style to develop. What sedentism means in terms of settlement patterns is settled areas or villages. These villages were larger than any previous macroband base camp had been. Most of the villages of the Sullivans Cove phase were probably located on floodplains which were more fertile and productive than other areas. Villages contained storage facilities such as large pits and more permanent house structures. Possible pit house structures dating to post A.D. 1000 were uncovered at the Slaughter Creek Site in Delaware (Davidson 1935a, 1935b and Zuckerman 1979a, 1979b). Large villages were probably surrounded by smaller hamlets or the farmsteads of individual family groups.

See Continuation Sheet No. 53

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   E   Page   53  

Villages contained large populations. Custer (1984a:148) suggests that increased sedentism resulted in a decreased necessity to space births so that the local population increased. However, in Anne Arundel County along the South and Severn River Drainages, the population declined through the Sullivans Cove phase rather than grown. John Smith, during exploration of the Chesapeake Bay in 1600, noted that the area had been depopulated, possibly by Susquehannock expansion from the north (Arbor 1910, Hunter 1959). If Susquehannock expansion began during the Sullivans Cove phase, this could explain the decrease in population along the Severn and South Rivers. Susquehannock expansion and/or raids into the region could have displaced the local population. The Elkridge site is an example of a site which was abandoned during this period. During excavation, no contact period artifacts were recovered, Clark suggests that the site was abandoned prior to A.D. 1500. Clark further suggests that the site may have been palisaded (although there is no archaeological evidence as of yet to support this contention). The palisade would have functioned as a defense measure against the Susquehannock. However, despite the hypothetical existence of the palisade, Clark states that raids by the Susquehannocks were the reason for abandoning the site. A second possible explanation for depopulation in the area is suggested by the ceramic types distributed through the area during the Sullivans Cove phase. It is possible that the Sullivan Cove/Townsend Series ceramics were used by one cultural group of people and that Potomac Creek ceramics were used by another. If this is true, then it is possible that these two groups were in conflict with one another over territory. In either case, Anne Arundel County, at least along the Chesapeake Bay, appears to have been a no man's land during the proto-historic period.

Political Organization and Religion

Tribal level organization was in existence in much of the Middle Atlantic Region during the Late Woodland Period. Tribes are defined by Service (1962:111-113) as associations of larger numbers of kinship units than are found on the band level. Tribes also contain integrative institutions not found at the band level such as clans, lineages, and age grades. Sahlins (1968:20) further defines a spectrum of organization at the tribal level which ranges from the segmentary tribe (a decentralized, local, autonomous group) to a chiefdom (in which "tribal culture anticipates statehood in its complexities"). Fried (1967) notes that tribes

See Continuation Sheet No. 54

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   E   Page   54  

---

tend to be egalitarian in nature. Tribal organization is generally associated with sedentary or semi-sedentary life styles with some sort of domesticated plants or animals (Custer 1986:145). While the development of agriculture in the Middle Atlantic supported increased social complexity in the form of tribal organization, chiefdoms were rare in the Middle Atlantic Region.

Religious rituals associated with burial practices during the Late Woodland experienced changes in complexity. During the late Middle Woodland Period, traits such as exotic trade items and ritual burial practices associated with the Delmarva Adena had disappeared from the archaeological record by 0 B.C. (Custer 1984a:130). By the Late Woodland Period multiple burials in the form of ossuaries appear in the archaeological record. However, these burials lacked the exotic grave goods usually associated with symbolic status (Custer 1984a:170, Custer 1986:54). Susquehannock burials in the Middle Atlantic dating to the Late Woodland Period are accompanied by grave goods. However, Custer (1986:142) suggests that these items symbolized achieved status based on age and sex rather than hereditary ranking. The change in ritual mortuary behavior from the Middle Woodland through the Late Woodland probably reflects the changes in social complexity occurring during these two periods.

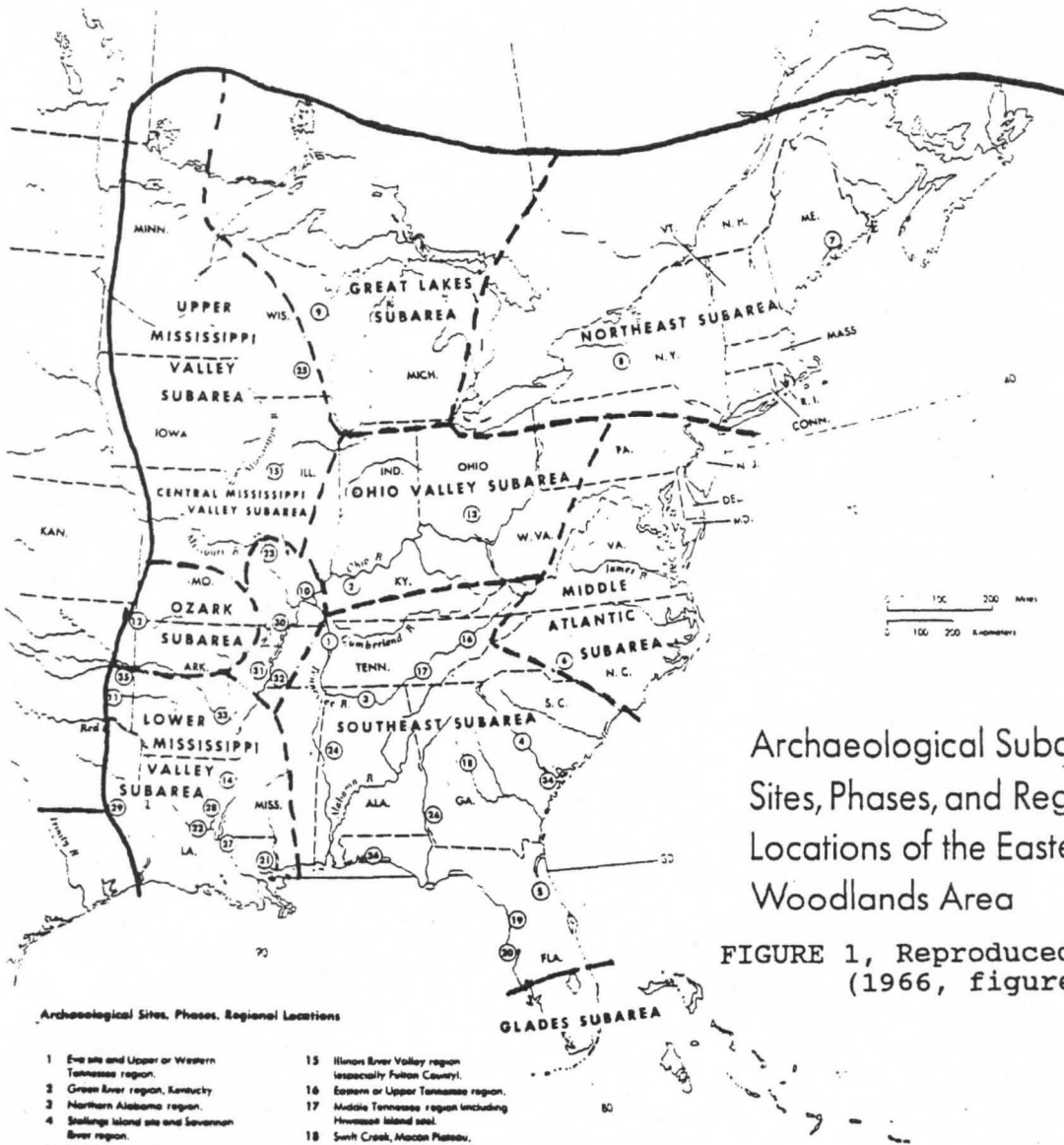
See Continuation Sheet No. 55

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number  E  Page  55



Archaeological Subareas,  
Sites, Phases, and Regional  
Locations of the Eastern  
Woodlands Area

FIGURE 1, Reproduced From Willey  
(1966, figure 5-1)

Archaeological Sites, Phases, Regional Locations

- |  |   |  |
|--|---|--|
| <ul style="list-style-type: none"> <li>1 Eve site and Upper or Western Tennessee region.</li> <li>2 Green River region, Kentucky</li> <li>3 Northern Alabama region.</li> <li>4 Stallings Island site and Savannah River region.</li> <li>5 St. Johns region, Florida</li> <li>6 Beginn of Piedmont Sequence.</li> <li>7 Ellsworth Falls site, Maine.</li> <li>8 Lamaha and later phases, New York.</li> <li>9 Ozark site, Wisconsin.</li> <li>10 Faulkner, Beamer, and Kincaid sites, Illinois.</li> <li>11 Fourche Menaque site, Oklahoma.</li> <li>12 Grave phase and Ozark Bluff Overier sites, Arkansas-Oklahoma.</li> <li>13 Adena and Hopewell centers, Ohio</li> </ul> | <ul style="list-style-type: none"> <li>15 Illinois River Valley region especially Fulton County.</li> <li>16 Eastern or Upper Tennessee region.</li> <li>17 Middle Tennessee region including Hiwassee Island site.</li> <li>18 Swift Creek, Macon Plateau, and Lamar sites, Georgia.</li> <li>19 Crystal River site, Florida.</li> <li>20 Woodson Island site, Florida.</li> <li>21 Tchakofata site, Louisiana.</li> <li>22 Martoville site, Louisiana.</li> <li>23 Cahokia site, Illinois.</li> <li>24 Moundville site, Alabama.</li> <li>25 Aztalan site, Wisconsin.</li> <li>26 Kolamucki site, Georgia.</li> <li>27 Cates Creek phase, Louisiana-Mississippi.</li> </ul> | <ul style="list-style-type: none"> <li>29 Dove site, Texas.</li> <li>30 New Madrid phase, Missouri.</li> <li>31 Parkin phase, Arkansas.</li> <li>32 Walls phase, Tennessee.</li> <li>33 Mound phase, Arkansas.</li> <li>34 Innes site, Georgia.</li> <li>35 Spiro site, Oklahoma.</li> </ul> |
|--|---|--|

See Continuation Sheet No. 56

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number  E  Page  56

Date	Phase	Tradition	Period	Stage
9000 B.C.	Clovis			
8000 B.C.	Middle Paleo	PaleoIndian	PaleoIndian	Paleo-Indian
7500 B.C.	Hardaway-Dalton			
7200 B.C.	EA I	Corner Notched		
6900 B.C.	EA II			
6600 B.C.	EA III		Early Archaic	
6300 B.C.	EA IV	Bifurcate		
6000 B.C.	EA V			
5000 B.C.	MA I			
4200 B.C.	MA II		Middle Archaic	Archaic
4000 B.C.	MA III			
3000 B.C.	LA I			
2200 B.C.	LA II	Piedmont/ Laurentian		
1900 B.C.	LA III			
1700 B.C.	LA IV		Late Archaic	
1500 B.C.	LA V	Broadspear		
1000 B.C.	LA IV			
750 B.C.	Marcey Creek	Fishtail		
400 B.C.	Accokeek		Early Woodland	
200 A.D.	Popes Creek			
800 A.D.	Selby Bay		Middle Woodland	Woodland
1250 A.D.	Little Bay			
1500 A.D.	Sullivans Cove		Late Woodland	

TABLE 1  
CHRONOLOGY OF THE MIDDLE ATLANTIC REGION

---

**F. Associated Property Types**

---

I. Name of Property Type See Continuation Sheet No. 57

II. Description

III. Significance

IV. Registration Requirements

See continuation sheet No. 57

---

See continuation sheet for additional property types

---

**G. Summary of Identification and Evaluation Methods**

---

Discuss the methods used in developing the multiple property listing.

See Continuation Sheet No. 66

See continuation sheet No. 66

---

**H. Major Bibliographical References**

---

See Continuation Sheet No. 68

See continuation sheet No. 68

Primary location of additional documentation:

- State historic preservation office  
 Other State agency  
 Federal agency

- Local government  
 University  
 Other

Specify repository: MD Dept. of Housing and Community Development, Crownsville, MD/R. Christopher Goodwin & Associates, Inc., Frederick, MD/Potomac River Archaeological Survey, Department of Anthropology, The American

---

**I. Form Prepared By**

University, Washington, D.C.

name/title Esther Doyle Read, Assistant County Archaeologist  
organization Anne Arundel County Planning & Zoning date 27 April 1990  
street & number P.O. Box 2700 telephone (301) 222-7441  
city or town Annapolis state Maryland zip code 21404

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number F Page 57

---

F. Associated Property Types

I. Name of Property: Base Camp Sites

II. Description:

Base Camp Sites were the main locus of habitation throughout most of the prehistoric period. Base camps were located in a variety of environmental settings (ie. riverine, estuarine, or marine zones). Preference of location varied over the three developmental stages of the prehistory of Anne Arundel County (i.e. PaleoIndian, Archaic and Woodland Stages). Base camps are represented archaeologically by a wide variety of artifact types within the assemblage, which represent a wide variety of activities. These activities include domestic tasks (such as food or hide preparation) or tool kit maintenance tasks (such as late stage manufacture of tools or tool resharpening). The remains of storage pits, garbage middens, post holes and possibly pit houses are also recovered archaeologically at base camps. Two types of base camps have been recognized to date within the archaeological record of Anne Arundel County. The larger base camps were macroband base camps which were inhabited by several bands probably on a seasonal basis. Several bands would aggregate at the base camp for fairly long periods of time. Smaller base camps were known as microband base camps. The smaller base camps were inhabited by smaller groups, probably a single band or two, which represented small nuclear families. These camps were located in areas of resource abundance on a seasonal basis.

III. Significance:

Base Camp Sites are historically significant under National Register criterion D as associated with the PaleoIndian, the Archaic, and the Woodland Stages of development in Anne Arundel County. Base camp archaeological sites are important to an understanding of the social history and ethnic heritage of prehistoric Native Americans of Anne Arundel County.

See Continuation Sheet No. 58

**United States Department of the Interior  
National Park Service****National Register of Historic Places  
Continuation Sheet**Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   F   Page   58  

Base Camp Sites provide information concerning the subsistence and settlement patterns of human populations throughout the prehistoric period. The site's location in the environment (i.e. riverine, estuarine, marine, or inland), provides information concerning the types of resources available to prehistoric populations as well as providing a means to understand the relationship of the base camp to surrounding procurement or extractive sites. The relationship of base camp sites to the smaller procurement/extractive sites over time provides information concerning the evolution of and change within subsistence and settlement patterns. Data concerning subsistence/settlement pattern change over time also facilitates studies of continuity between different stages, periods, and phases of time within Anne Arundel County prehistory. The differential location of base camps over time provides data on the impact of environmental changes on cultural continuity and change, and on population demographics such as migration. Exploration of base camp sites and their associated procurement or extractive sites allow existing predictive models to be tested for accuracy, and allow new models to be produced. Variation in the location of sites on a regional basis may also be explored through the study of base camps. An understanding of base camps and their associated smaller procurement or extractive sites also allows interpretations to be created which are holistic in scope.

Multi-component base camps provide information concerning the gradual change from semi-sedentary lifestyles associated with base camps to more permanent village sites. These changes have been linked with the appearance of agriculture in the archaeological literature, hence studies of the intensification of horticulture and the change to agriculture may also be pursued at base camp sites. Information concerning the political organization of groups, ceremonial activities and religious beliefs can potentially be gathered at base camp sites. Data about trade networks and the occurrence of status items among members of the population are also available at base camps site. This data can be used to construct interpretations of the relationship of status and the political organization, as well as the relationship of both to the group's cosmology and environment.

See Continuation Sheet No. 59

**United States Department of the Interior  
National Park Service**

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number F Page 59

---

IV. Registration Requirements:

Base Camp Sites were the focus of prehistoric Native American habitation and social interaction through much of the prehistoric era. They are of primary importance because of the information they can convey concerning subsistence and settlement patterns, technology, the political organization, religious beliefs, and demographics of prehistoric populations. In order to meet registration requirements base camps should possess intact sub-surface remains such as living floors or cultural features; or they should possess stratified deposits. Base camps should also be either multi-component sites representing a broad base of prehistory or they should be a significant single component site which contains information regarding a short period of prehistory.

See Continuation Sheet No. 60

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number F Page 60I. Name of Property: Procurement or Extractive Sites

## II. Description:

Procurement or Extractive Sites were small special purpose sites associated with larger base camps which functioned as specialized areas where resources were procured or extracted from the local environment. Procurement or Extractive sites were associated with a specific activity and included quarry sites, quarry reduction sites, hunting camps, and gathering stations.

Quarry Sites were located at outcroppings of cryptocrystal-line rock or deposits of cobbles, material necessary for the manufacture of lithic tools within the prehistoric tool kit. The availability of water was not of prime importance in selecting a quarry location as these locales were only utilized for short periods of time. Quarry sites existed throughout the entire continuum of Anne Arundel County prehistory and some quarry sites were probably revisited continually. Material cultural remains associated with quarry sites include large amounts of lithic debitage with few diagnostic tools. Tools were generally not manufactured on site, instead rough blanks were prepared for later manufacture at another location.

Quarry Reduction Stations were the locations at which blanks produced at quarry sites were worked into stone tools. These sites were occupied for short periods of time, but, unlike quarry sites, were generally located near water. They are characterized by a scatter of lithic debris and tools broken or rejected during the manufacture process. Quarry reduction stations probably existed throughout the continuum of Anne Arundel County prehistory.

Hunting Camps were locations where game was processed for transport back to the base camp. These sites were occupied for short periods of time, probably throughout the continuum of Anne Arundel County prehistory, and were located near swamps, marshes, bogs or other poorly drained areas where game was attracted. Artifacts recovered at hunting camps include cutting tools (such as lithic knives and flake cutting tools) and faunal remains.

See Continuation Sheet No. 61

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number F Page 61

---

Gathering Stations were located in areas of abundant resources, such as fish, shellfish, berries, nuts, or other plants. These sites were utilized for short periods of time, depending on the availability of resources. Gathering stations were probably occupied throughout the continuum of Anne Arundel County prehistory. Artifacts associated with gathering stations would reflect the activity carried out there (such as floral remains associated with a plant gathering station or fish hooks and net sinkers associated with a fishing station).

III. Significance:

Procurement or Extractive Sites are historically significant under National Historical Register Criterion D as associated with the PaleoIndian Archaic, and the Woodland Stages of development in Anne Arundel County. Procurement or Extractive archaeological sites are important to an understanding of the social history and ethnic heritage of prehistoric Native Americans. These sites provide important information concerning subsistence and settlement patterns, including data about the site type, site location, and prehistoric utilization of the environment. Data concerning the types of resources procured and utilized aids in the reconstruction of past eco-niches and habitats, as well as providing data about the evolution and change of subsistence patterns over time. The types of procurement or extractive sites utilized effected the settlement patterns and the demographics of prehistoric populations. Data concerning settlement patterns provides information concerning differences and similarities between subsistence patterns in different environmental zones of the county (i.e. the riverine, estuarine and inland zones). Information about the impact of environmental changes on prehistoric cultures through the PaleoIndian, Archaic, and Woodland stages of development may also be recovered, including data concerning prehistoric technology and how the technology or material culture was utilized to transform the natural and cultural environments. Studies of the material culture associated with these sites allow a better understanding of the relationship between changes in the technology and cultural changes.

See Continuation Sheet No. 62

**United States Department of the Interior  
National Park Service**

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   F   Page   62  

---

IV. Registration Requirements:

Procurement or Extractive Sites were an important part of the subsistence strategies of prehistoric Native American populations. These sites are important because of the information they contain concerning the resources utilized by prehistoric populations. In order to meet registration requirements procurement or extractive sites should maintain sufficient integrity to evoke the activities performed there at the time of their occupation. They should be associated either with a unique natural feature (such as a rock outcropping) or be associated with a base camp or be associated with a number of other procurement/extractive sites in the area. The association of the site with either a natural feature or with other sites should convey the part they played within the subsistence/settlement patterns of prehistoric populations.

See Continuation Sheet No. 63

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   F   Page   63  

---

I. Name of Property:   Village Sites  

II. Description:

Village Sites occurred primarily during the later part of Anne Arundel County prehistory. These sites were much larger than base camps and were occupied for much longer periods of time on a semi-permanent basis. Artifacts associated with village sites should include items associated with domestic, agricultural, and hunting activities. The remains of houses, storage pits, refuse pits, and middens are also possible on village sites, some villages may have been pallisaded. Groups associated with village sites were probably tribal and may have been organized into loose confederations of tribes.

III. Significance:

Village Sites are historically significant under National Register Criterion D as associated with the Woodland Stage of Development in Anne Arundel County. Village sites are important to an understanding of the social history and ethnic heritage of prehistoric Native Americans. Village sites yield information concerning ethnographic and historic documentation of Native American groups during the time period just prior to European contact. Population movements of modern Native American groups just prior to contact may potentially be documented. The appearance of agriculture during the prehistoric era may also be explored through the study of village sites, topics associated with the development of agriculture may also be addressed. Information concerning changes in nutrition and health, political organization, cosmology, and inter-group relationships may also be recovered from village sites.

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number F Page 64

---

IV. Registration Requirements:

Village Sites were the locus of human habitation and social activity late in the prehistoric era, hence they contain valuable information about daily life and beliefs. In order to meet registration requirements Village Sites should possess either stratified deposits, in situ subsurface cultural features, or maintain sufficient integrity to allow distributional analyses. The site should theoretically be associated with either intensive horticultural practices or with agriculture. The site should also demonstrate evidence of semipermanent or long term occupation.

See Continuation Sheet No. 65

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Continuation Sheet**

Section number F Page 65

---

I. Name of Property: Mortuary Sites

II. Description:

Mortuary Sites are specialized sites associated with all Stages of development within Anne Arundel prehistory (PaleoIndian, Archaic, and Woodland). Types of sites included within this category include single burials, multiple burials in the form of ossuaries or cemeteries, cremation sites, reburial sites, and ceremonial sites associated with ritual burial behavior. Mortuary sites are located in all environment zones (riverine, estuarine, marine, and inland).

III. Significance:

Mortuary Sites are significant for the information they contain concerning ceremonial or ritual behavior practiced by prehistoric Native American populations. Data concerning the nutrition, health, and mortality of prehistoric populations may also be gathered at mortuary sites; this data may be used in comparative studies concerned with populations living in different regions of the county or during different periods of time. The types of grave offerings recovered at mortuary sites can provide insight into the presence or absence of status differentiation between members of the culture participating in the ritual. Grave goods also provide information about trade networks, ritual exchange, and technological changes, both within the region and outside of it, over time.

IV. Registration requirements:

Mortuary Sites are rare among the known sites in Anne Arundel County, but are important because of the information they contain concerning life styles and ideological beliefs. In order to meet registration requirements Mortuary Sites should retain sufficient subsurface integrity to allow retrieval of important information. However, in the case where a mortuary site is an affiliate of a burial cult or a culture (such as Adena) then emphasis should be placed on the uniqueness of the relationship rather than on subsurface integrity.

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   G   Page   66  

---

G. Summary of Identification and Evaluation Methods

The multiple property listing of archaeological sites exemplifying prehistoric human adaptation to the Coastal Plain environment in Anne Arundel County is based on information contained within the Maryland Archaeological Site File, Anne Arundel County Section. The Maryland Archaeological Site File has been maintained, since the 1970's, by the Office of the State Historic Preservation Officer. Information within the Maryland Archaeological Site File has been gathered by various individuals, universities, state officials, and other archaeological organizations. Within Anne Arundel County, 777 archaeological sites have been recorded to date. These sites were identified through surveys, examinations of artifact collections, and the records of earlier archaeological work.

The sites identified as significant and included within the multiple property listing were selected based either on information obtained during archaeological excavation or because they possessed unique qualities (such as a geographic location or functional characteristics). Sites were grouped under three major themes that correspond with major developmental stages within the prehistory of the eastern United States: (1) the PaleoIndian Stage, circa 13,000-7500 B.C., (2) the Archaic Stage, 7500-1000 B.C., and (3) the Woodland Stage, 1000 B.C.-the 17th century A.D. As no complete synthesis of Anne Arundel County prehistory existed, a short prehistory was prepared for this project by Esther Doyle Read under the supervision of Dr. Alvin H. Luckenbach. Luckenbach holds a PhD in Anthropology from the University of Kentucky. Read holds a B.A. in Anthropology from Southern Illinois University, Carbondale and an M.A.A. degree in Applied Anthropology from the University of Maryland, College Park. The archaeological synthesis of Anne Arundel County prehistory was the basis of the historic context section and was drawn from site reports and secondary sources concerned with prehistory in the county and in the Eastern United States.

See Continuation Sheet No. 67

**United States Department of the Interior  
National Park Service**

**National Register of Historic Places  
Continuation Sheet**

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   G   Page   67  

---

The property types were organized by site type. Data concerning function was gathered primarily from the work of Dr. William Gardner of the Department of Anthropology, Catholic University, Washington, D.C. and Dr. Jay Custer, Department of Anthropology, University of Delaware, Newark, Delaware. The work of Gardner and Custer (as well as other authors consulted) had as its primary concern the recognition of site types and their relationships to other site types.

The intention of this multiple property documentation is to cover all identified property types in Anne Arundel County and to aid in the addition of individual sites to the National Register in the future.

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   68  

---

H. Major Bibliographic References

Arbor, Edward (editor). Travel and Works of Captain John Smith 1580-1631. New York, Burt Franklin, 1910.

Arminger, C. "Susquehannock Plant Utilization". In: W. F. Kinsey (editor), Proceedings of the 1975 Middle Atlantic Archaeological Conference. Lancaster, Franklin and Marshall College, North Museum, 1975.

Artusy, Richard E. "An Overview of the Proposed Ceramic Sequence in Southern Delaware". Maryland Archeology, vol 12, no. 2 (1974):1-15.

Barse, William P., Wayne E. Clark, and Gerald N. Braley. "The Purcell Site An Exploration". Maryland Archeology, vol 13, no. 1 (1975):1-11.

Belknap, D.F. and J.C. Kraft. "Holocene Relative Sea-Level Change and Coastal Stratigraphic Units on the Northwest Flank of the Baltimore Canyon Geosyncline". Journal of Sedimentary Petrology, vol. 47 (1977):610-628.

Bernabo, J.C. and T.C. Webb. "Changing Patterns in the Holocene Record of Northeastern North America: A Mapped Summary". Quaternary Research, vol 8 (1977):64-65.

Binford, Lewis. "Archeology as Anthropology". American Antiquity, vol 28 (1962):217-225.

Blaker, Margaret C. "Aboriginal Ceramics: The Townsend Site near Lewes, Delaware". The Archeologist, vol 15, no. 1 (1963):14-39.

Braun, E. L. Deciduous forests of eastern North America. New York, Hafner, 1967.

Brose, David S. "The Woodland Period". In: D.S. Brose, J.A. Brown, and D.W. Penny, Ancient Art of the American Woodland Indians. New York, Harry N. Abrams, Inc., 1985, pp. 42-91.

Brown, Lois. The Distribution of Paleo-Indian Projectile points in Maryland. Manuscript on file, Maryland Historical Trust, Crownsville, 1979.

See Continuation Sheet No. 69

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   69  

- Broyles, Bettye J. Second Preliminary Report: The St. Albans Site, Kanawha County, West Virginia, Report of Archaeological Investigations 3. West Virginia Geological and Economic Survey, 1971.
- Brush, G. "An Environmental Analysis of Forest Patterns". American Scientist, vol 17 (1982):18-25.
- . "Geology and Paleoecology of Chesapeake Estuaries". Journal of the Washington Academy of Science, vol. 76, no. 3 (1986): 146-160.
- Carbone, Victor A. "The Paleo-Environment of the Shenandoah Valley". In: W. Gardner, The Flint Run Paleo-Indian Complex: A Preliminary Report 1971-73 Seasons, Occasional Publication No. 1. Archaeology Laboratory, Department of Anthropology, The Catholic University of America, Washington D.C., 1974.
- . Environment and Prehistory in the Shenandoah Valley. Ph.D. dissertation, Catholic University of America, University Microfilms, Ann Arbor, Michigan, 1976.
- . "Environment and Society in Archaic and Woodland Times". In: R. Moeller (editor). Practicing Environmental Archaeology. Occasional Papers of the American Archaeological Institute 3. Washington, Conn., 1982, pp. 39-52.
- Chapman, Jefferson. The Rose Island Site. Department of Anthropology, University of Tennessee, Report of Investigations 14, 1975.
- . The Archaic Period in the Lower Little Tennessee River Valley. Department of Anthropology, University of Tennessee, Report of Investigations 14, 1976.
- Clark, Wayne E. "The Elkridge Site: Initial Excavation and Interpretation". Maryland Archeology, vol 6, no. 2 (1970):32-57.
- . The Elkridge Village Archaeological Site. National Register of Historic Places Nomination, 1974.

See Continuation Sheet No. 70

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   70  

---

----- . The Application of Regional Research Designs to Contract Archeology: The Northwest Corridor Archaeological Survey Project. M.A. Thesis, The American University, Washington, D.C., 1976.

Clark, Wayne E. "The Origins of Piscataway and Related Indian Cultures". Maryland Historical Magazine, vol. 75, no. 1 (1980):8-22.

Clark, Wayne E. and W. Dana Miller. "Projectile Points" In: K. Vitelli, Report of Excavations at UMBC Site 18BA71, The Archaeological Society of Maryland Miscellaneous Papers 10, 1975, pp. 27-52.

Coe, Joffre Lanning. "The Formative Cultures of the Carolina Piedmont". Transactions of the American Philosophical Society vol 54, no. 5, 1964.

Crane, H.R. "University of Michigan Radiocarbon Dates I". Science, vol 124 (1956):664-672.

Crane H.R. and James B. Griffin. "University of Michigan Radiocarbon Dates XII". Radiocarbon, vol 10, no. 1, (1968):61-114.

Croney, John S., Harold L. Moors, Roy Korman. An Experience in Archaeology. Anne Arundel county Maryland: Site Report Further Excavation on the Dorr Property January - April 1976. Manuscript on file, Maryland Historical Trust, Crownsville, 1976.

Cubbage, W.D. "Killens Mill Pond". Bulletin of the Archaeological Society of Delaware, vol. 3, no. 4 (1941):23-24.

Custer, Jay F. Broadspears and Netsinkers: Late Archaic Adaptations Indicated by Depositional Sequences from Four Middle Atlantic Archaeological Sites of the Ridge and Valley Province. Paper presented at the annual Middle Atlantic Archaeological conference, Rehobeth Beach, Del., 1978.

----- . Delaware Prehistory Archaeology: An Ecological Approach. Newark, University of Delaware Press, 1984a.

See Continuation Sheet No. 71

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   71  

----- . "Paleoecology of the Late Archaic: Exchange and Adaptation". Pennsylvania Archaeologist, vol. 55, nos 3-4 (1984b):19-37.

----- . "Analysis of Seeds from 18PR166". Newsletter of the Archaeological Society of Maryland, vol. 12, no. 4 (1984c):2-3.

Custer, Jay F. "Late Woodland Cultures of the Lower and Middle Susquehanna Valley". In: J. F. Custer, Late Woodland Cultures of the Middle Atlantic Region. Newark, University of Delaware Press, pp 116-142, 1986.

----- . "Late Woodland Cultural Diversity in the Middle Atlantic: An Evolutionary Perspective". In: J. F. Custer, Late Woodland Cultures of the Middle Atlantic Region. Newark, University of Delaware Press, pp 143-168, 1986.

----- . "Coastal Adaptations in the Middle Atlantic Region". Archaeology of Eastern North America, vol. 16 (1988):121-136.

Custer, Jay F. and Daniel Griffith. "Late Woodland Cultures of the Middle and Lower Delmarva Peninsula". In: J. F. Custer, Late Woodland Cultures of the Middle Atlantic Region. Newark, University of Delaware Press, pp 29-57, 1986.

Davidson, D.S. "Notes on Slaughter Creek". Bulletin of the Archaeological Society of Delaware, vol. 2, no. 2 (1935a):1-15.

----- . "Burial Customs in the Delmarva Peninsula and the question of chronology". American Antiquity, vol. 1, no. 1, (1935b):84-97.

DeJarnette, David L., J.A. Walthall, S.B. Wimberly. "Archaeological Investigations in the Buttahatchie River Valley II: Excavations at Stick Bluff Rock Shelter". Journal of Alabama Archaeology, vol. 21, no.2 (1975):99-119.

Dincauze, Dena Ferran. "The Late Archaic Period in Southern New England". Arctic Anthropology, vol. 12, no. 2 (1975):23-24.

See Continuation Sheet No. 72

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetSection number   H   Page   72  

- . The Neville Site, Peabody Museum Monographs 4. Cambridge, Mass., 1976.
- Edwards, Robert L. and Arthur S. Merrill. "A Reconstruction of Continental Shelf Areas of Eastern North America for the Times 9500 B.P. and 12,500 B.P.". Archaeology of Eastern North America, vol. 5 (1977):143.
- Egloff, Keith T. and Stephen R. Potter. "Indian Ceramics From Coastal Plain Virginia". Archaeology of Eastern North America, vol. 10 (1982):95-117.
- Evans, Clifford. A Ceramic Study of Virginia Archaeology. Bureau of American Ethnology Bulletin, 160, Washington D.C., 1955.
- Fassig, O.L. The Climate of Anne Arundel County. Baltimore, Johns Hopkins Press, 1917.
- Fitzhugh, William. "The Eastern Archaic: Commentary and Northern Perspective". Pennsylvania Archaeologist, vol. 42 (1972):119.
- Flannery, Kent V. "Archaeological systems theory and early Mesoamerica". In: B.J. Meggers (editor), Anthropological archaeology in the Americas. Washington, D.C., Anthropological Society of Washington, 1968, pp. 67-87.
- Ford, T. Latimer. "Adena Traits in Maryland". Eastern States Archaeological Federation Bulletin, 17 (1958):10-11.
- . "Adena Sites on the Chesapeake Bay". Archaeology of Eastern North America, vol. 4 (1976):63-88.
- Fried, M.H. The Evolution of Political Society. New York, Random House, 1967.
- Funk, Robert E. "The Archaic of the Hudson Valley: New Evidence and New Interpretations". Pennsylvania Archaeologist, vol. 35, nos 3-4 (1965):139-160.
- . "Early Man in the Northeast and the Late-Glacial Environment". Man in the Northeast, vol 4 (1972):7-39.

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   73  

- . "Post Pleistocene Adaptations". In: B.G. Trigger (editor), Northeast Vol. 15 Handbook of North American Indians. Washington, D.C., Smithsonian Institute, 1978, pp. 16-22.
- Gardner, William M. The Flint Run Paleo-Indian Complex: A Preliminary Report 1971-73 Seasons, Occasional Publication No. 1. Archaeology Laboratory, Department of Anthropology, The Catholic University of America, Washington, D.C., 1974.
- . Flint Run Paleo-Indian Complex and its implications for eastern North American prehistory. In: W.S. Newman and B. Salwen (editors), Amerinds and their Paleoenvironments in Northeastern North America. Annals of the New York Academy of Sciences 288, 1977.
- Gardner, William M. Comparison of Ridge and Valley, Blue Ridge Piedmont and Coastal Plain Archaic Period Site Distribution: An Idealized Transect (Preliminary Model). Paper presented at the annual Middle Atlantic Archaeological Conference, Rehobeth Beach, Del., 1978.
- . Paleo-Indian Settlement patterns and site distributions in the Middle Atlantic (preliminary version). Paper presented at the January meeting of the Anthropological Society of Washington, Washington, D.C., 1979.
- . Settlement-Subsistence Strategies in the Middle and South Atlantic portions of the Eastern United States during the Late Pleistocene and Early Holocene. Paper presented at the annual American Anthropological Association Meetings, Washington, D.C., 1980.
- . "Early and Middle Woodland in the Middle Atlantic: An Overview". In: R. Moeller (editor). Practicing Environmental Archaeology. Occasional Papers of the American Archaeological Institute 3. Washington, Conn., 1982, pp. 53-87.
- Gardner, William M. and Jay Custer. A preliminary cultural resources reconnaissance of the proposed Verona Lake Site No. 2. Manuscript on file, Department of Anthropology, Catholic University of America, Washington, D.C., 1978.

See Continuation Sheet No. 74

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   74  

Gouldie, A. Environmental Change. Oxford, Clarendon Press, 1977.

Griffin, James B. "A Commentary on Early Man Studies in the Northeast". In: W.S. Newman and B. Salwen (editors), Amerinds and their Paleoenvironments in Northeastern North America. Annals of the New York Academy of Sciences 288, 1977.

Griffith, Daniel, R. Townsend Ceramics and the Late Woodland of Southern Delaware. M.A. thesis, Department of Anthropology, The American University, Washington, D.C., 1977.

----- . "Townsend Ceramics and the Late Woodland of Southern Delaware". Maryland Historical Magazine, vol. 75, no. 1 (1980):23-41.

----- . "Prehistoric Ceramics in Delaware (An Overview)". Archaeology of Eastern North America, vol. 10 (1982):46-48.

Griffith Daniel R. and Richard E. Artusy. "Middle Woodland Ceramics from Wolfe Neck, Sussex County, Delaware". The Archeolog, vol. 28, no.1 (1977):1-28.

Guilday, John E. "The Climatic Significance of the Hosterman's Pit Local Fauna Centre County, Pennsylvania". American Antiquity, vol. 32 (1967):321-323.

----- . "Appalachia 11,00-12,000 Years Ago: A Biological Review". Archaeology of Eastern North America, vol. 10 (1982):22-26.

Handsman, Russell G. and Charles W. McNett. The Middle Woodland in the Middle Atlantic: Chronology, Adaptation, and Contact. Paper presented at the annual Middle Atlantic Conference, Baltimore, MD., 1974.

Harrison, W.R., R.J. Mallory, G.A. Rusnak, and J. Teresmae. "Possible Late Pleistocene Uplift Chesapeake Bay Entrance". Journal of Geology, vol. 73 (1965):201-229.

Holmes, William H. "Aboriginal Pottery of the Eastern United States". Bureau of Ethnology Annual Report 20, 1903.

See Continuation Sheet No. 75

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   75  

- 
- Hranicky, William J. and Floyd Painter. Projectile Types in Virginia and Neighboring Areas. Archaeological Society of Virginia, Special Publication Number 16, 1988.
- Hughes, Richard B. A Cultural and Environmental Overview of the Prehistory of Maryland's Lower Eastern Shore Based Upon a Study of Selected Artifact Collections. Maryland Historical Trust Manuscript Series 26, 1980.
- Hunter, William A. "The Historic Role of the Susquehannock". In: J. Witthoft and W.F. Kinsey, Susquehannock Miscellany. Harrisburg, Pennsylvania Historical and Museum Commission, 1959, pp. 8-18.
- Jones, E. "The Frederica site and the Delmarva Adena problem". Journal of the Archaeological Society of Maryland, vol. 1, no. 1 (1963):12-15.
- Kauffman, B. and J. Dent. The Preliminary flora and fauna analysis of the Shawnee Minisink Site (36MR43). Paper presented at the annual Middle Atlantic Conference, Rehobeth Beach, Delaware, 1978.
- Kavanagh, Maureen. Archaeological Resources of the Monocacy River Regions. Maryland Geological Survey, Division of Archeology, File Report 164, 1982.
- Kidder A.V., J.D. Jennings, E.M. Shook. Excavations at Kaminaljuyu, Guatemala. Publication No. 561, Carnegie Institute of Washington, Washington, D.C., 1946.
- Kinsey, W. Fred III. Archaeology of the Upper Delaware Valley: A Study of the Cultural Chronology of the Tooks Island Reservoir. Harrisburg, The Pennsylvania Historical and Museum Commission, 1972.
- Kinsey, W. Fred III and Jay F. Custer. "Excavations at the Lancaster Park Site (36LA96)". Pennsylvania Archaeologist, vol 52, no.s 3-4 (1982): 25-26.
- Kraft, Herbert C. The Miller Field Site, Warren County, N.J.: A Study in Prehistoric Archaeology. South Orange, N.J., Seton Hall University Press, 1970.

See Continuation Sheet No. 76

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   76  

- . "The Rosenkrans Site, An Adena-Related Mortuary Complex in the Upper Delaware Valley, New Jersey". Archaeology of Eastern North America, vol. 4 (1976): 9-49.
- Kraft, John C. "Sedimentary Facies Patterns and Geologic History of a Holocene Marine Transgression". Bulletin of the Geological Society of America, vol 82 (1971):2131-2158.
- . "Late Quaternary Paleogeographic Changes in the Coastal Environments of Delaware, Middle Atlantic Bight, Related to Archaeological settings". In: W.S. Newman and B. Salwen (editors), Amerinds and their Paleoenvironments in Northeastern North America. Annals of the New York Academy of Sciences 288, 1977.
- Krober, Alfred L. "Peruvian Archaeology in 1942". Viking Fund Publications in Archaeology 4, New York, 1944.
- Lee, R.B. and I. DeVore. Man the Hunter. Chicago, Aldine, 1968.
- Lowery, Darrin. "The Paw Paw Cove PaleoIndian Site Complex, Talbot County, Maryland". Archaeology of Eastern North America, vol. 17 (1989):143- 164.
- Luckenbach, Alvin H. and Wayne Clark. The Prediction and Evaluation of Archaeological Resources Within Maryland Department of Transportation Properties. Maryland Historical Trust Manuscript Series 9, 1981.
- Luckenbach, Alvin H., Wayne Clark, and Richard S. Levy. "Rethinking Cultural Stability in Eastern North American Prehistory: Linguistic Evidence from Eastern Algonquian." Journal of Middle Atlantic Archaeology, vol 3 (1987):1-33.
- MacNeish, Robert L. "Speculation on how and why food production and village life developed in the Tehuacan Valley, Mexico". Archaeology, vol. 24 (1971):307-315.
- Manson, Carl. "Marcey Creek Site: An Early Manifestation in the Potomac Valley". American Antiquity, vol 13, no 3 (1948):223-226.

See Continuation Sheet No. 77

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   77  

- 
- Maryland Historical Trust. The Maryland Comprehensive Historic Preservation Plan: Planning the Future of Maryland's Past. State of Maryland, Department of Economic and Community Development, 1986.
- Mayr, Thomas E. "The Ruf Site: An Influence From Pennsylvania". Eastern States Archaeological Federation Bulletin, 17, 1958.
- "Selby Bay in Retrospect." Maryland Archeology, vol. 8, no. 1 (1972):2-5.
- Michels, Joseph and Ira Smith. Archaeological Investigations of Sheep Rock Shelter, Huntington County, Pennsylvania. University Park, PA., Department of Sociology and Anthropology, Pennsylvania State University, 1967.
- Moeller, Roger W. "Late Woodland faunal and floral exploitative patterns in the Upper Delaware Valley". In: W.F. Kinsey (editor) Proceeding of the 1975 Middle Atlantic Archaeological Conference. Lancaster, Franklin and Marshall College, North Museum, 1975.
- Mouer, Daniel, Robin L Ryder, and Elizabeth G. Johnson. Down to the River in Boats: the Late Archaic/Transitional in the Middle James River Valley, Virginia. Paper presented at the annual Middle Atlantic Conference, Dover, Del, 1980.
- McDowell, Ellis, E. The Archaic Stage of the Potomac River Piedmont: A Technoecological Approach to the Archaeological Data. Ph.D. dissertation, Department of Anthropology, The American University, Ann Arbor, Michigan, University Microfilms, 1972.
- McGhee, Robert and James Tuck. "An Archaic sequence from the Strait of Belle Isle, Labrador, Canada". National Museum of Man, Mercury Series, Archaeological Survey of Canada Paper 34. Ottawa, Canada.
- McKern, W.C. "The Midwestern Taxonomic Method as an Aid to Archaeological Culture Study". American Antiquity, vol. 4, no. 4 (1939):301-313.

See Continuation Sheet No. 78

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   78  

- 
- McNamara, Joseph M. Archeological Test Excavations at the Hillsmere Pond I Site, Anne Arundel County, Maryland, Maryland Geological Survey, Division of Archeology, File Report Number 157, 1982.
- McNett, Charles W. Potomac Valley Archaeology. Manuscript on file, Maryland Historical Trust, Crownsville, 1972.
- McNett, Charles W. and William M. Gardner. "Shell middens of the Potomac Coastal Plains". Proceedings of the Second Middle Atlantic Conference, Washington D.C., 1971.
- . Archaeology of the Lower and Middle Potomac. Manuscript on file, Department of Anthropology, The American University, Washington, D.C., 1975.
- McNett, Charles W. and Barbara McMillian. Initial Season of the Upper Delaware Early Man Project. Mimeo on file, Department of Anthropology, The American University, Washington, D.C., 1974.
- Mc Nett, Charles W., Barbara McMillian, and Syndey B. Marshall. "The Shawnee-Minisink Site". In: W.S. Newman and B. Salwen (editors), Amerinds and their Paleoenvironments in Northeastern North America. Annals of the New York Academy of Sciences 288, 1977.
- Newman, Walter S. and Gene A. Rusnak. "Holocene Submerge of the Eastern Shore of Virginia". Science, vol. 148 (1965):1464-1466.
- Peck, Donald W. Comparison of Two Random Samples From the Obrecht Ceramic Assemblage. Manuscript on file, Maryland Historical Trust, Crownsville, MD, 1975.
- Peck, Donald W. The Obrecht Site (18AN113). Manuscript on file, Maryland Historical Trust, Crownsville, MD, 1976.
- . "Aboriginal Ceramics at the Obrecht Site (18AN113)". Maryland Archeology, vol. 13, no. 1, (1977): 13-32.

See Continuation Sheet No. 79

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   79  

- 
- . "Preliminary Test excavations at the Waveland Farm Site (18AN17)". Maryland Archeology, vol. 14, nos 1-2 (1978): 17-22.
- Penny, David W. "The Late Archaic Period". In: D.S. Brose, J.A. Brown, and D.W. Penny, Ancient Art of the American Woodland Indians. New York, Harry N. Abrams, Inc., 1985, pp. 15-41.
- Phelps, David S. Archaeological Salvage of the Thrope Site and other Investigations along U.S. 64 Bypass Rock Mount, North Carolina. Department of Sociology and Anthropology, East Carolina University, Archeological Research Report 1, 1980.
- Polglase, Christopher R., Michelle Moran, April Fehr, Leslie McFadden. Phase I Archaeological Investigations of the Strange/Dorr and Dolgoff Properties, Anne Arundel County, Maryland. Frederick, Maryland, R. Christopher Goodwin and Associates, Inc., 1989.
- Potter, Stephen. An Analysis of Chicacoan Settlement Patterns. Ph.D. dissertation, University of North Carolina, Chapel Hill, N.C., 1982.
- Ritchie, William A. Traces of Early Man in the Northeast. New York State Museum and Science Service Bulletin Number 358, Albany, New York, 1957.
- . A Typology and Nomenclature for New York Projectile Points. New York State Museum and Science Service Bulletin Number 384, Albany, New York, 1961.
- . The Archaeology of New York State. Second Edition. Arden City, New York, Natural History Press, 1969.
- Robbins, Maurice. An Archaic Ceremonial Complex at Assawompett. Attleboro, Massachusetts, Massachusetts Archaeological Society, 1968.
- Sahlins, Marshall D. Tribesmen. Englewood Cliffs, New Jersey, Prentice Hall, 1968.

See Continuation Sheet No. 80

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   80  

---

Schmitt, Karl Jr. "Archaeological Chronology of the Middle Atlantic States". In: J.B. Griffin (editor) Archaeology of the Eastern United States. Chicago, The University of Chicago Press, pp 59-70, 1952.

----- . "Patawomeke: An Historical Algonkian Site". Quarterly Bulletin, Archaeological Society of Virginia, vol. 20, no. 1 (1965): 1-36.

Service, Elman R. Primitive Social Organization. New York, Random House 1962.

----- . The Hunters. Englewood Cliffs, New Jersey, Prentice Hall, 1966.

Shelford, V.E. The Ecology of North America. Urbana, University of Illinois Press, 1963.

Snow, Dean P. A Summary of Excavations at the Hathaway Site in Pasadumkeag, Maine 1912, 1947, 1968. Orno, University of Maine, Department of Anthropology, 1969.

Stearns, Richard E. "Some Indian village sites of Tidewater Maryland". The Natural History Society of Maryland Proceedings Number 9, Baltimore, MD, 1943.

----- . "Some Indian village sites of the Lower Patapsco River". Proceedings of the Natural History Society of Maryland 10, 1949.

Stephenson, Robert L. and Alice L.L. Ferguson. Accokeek Site: A Middle Atlantic Seaboard Cultural Sequence. Museum of Anthropology, University of Michigan Anthropological Papers No. 20, Ann Arbor, 1963.

Steponaitis, Laurie C. An Archaeological Survey of the South River Drainage Basin, Anne Arundel County, Maryland. Prepared for the Maryland Geological Survey and the Maryland Historical Trust, 1978.

----- . A Survey of Artifact Collections From the Patuxent River Drainage, Maryland. Maryland Historical Trust Monograph Series Number 1, 1980.

See Continuation Sheet No. 81

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   81  

- . An Archaeological Study of the Patuxent Drainage Vol. I. Maryland Historical Trust Manuscript Series Number 24, 1983.
- Steward, Julian H. Theory of culture change. Urbana, University of Illinois Press, 1955.
- Stewart, R. Michael. Prehistoric settlement/subsistence patterns and the testing of predictive site location models in the Great Valley of Maryland. Ph.D. dissertation, The Catholic University of America. Ann Arbor, Michigan, University Microfilms, 1980.
- . "Prehistoric Ceramics of the Great Valley of Maryland". Archaeology of Eastern North America, vol. 10 (1982):69-94.
- . "Archaeologically Significant Characteristics of Maryland and Pennsylvania Metarhyolites". In J.F. Custer (editor), Prehistoric Lithic Exchange Systems in the Middle Atlantic. University of Delaware Center for Archaeological Research Monograph no. 3, Newark, Delaware, 1984, pp. 1-13.
- . "Trade and Exchange in Middle Atlantic Prehistory". Archaeology of Eastern North America, vol 17 (1989):47-78.
- Stewart R. Michael and William M. Gardner. Phase II Archaeological Investigations near Sam Rice Manor, Montgomery County, Maryland and at 18PR166 and 18PR172 near Accokeek, Prince Georges County, Maryland. Archaeology Laboratory, Department of Anthropology, Catholic University, Washington, D.C., 1978.
- Stewart, T.D. "Report on the skeletal remains from the St. Jones River Adena Site near Lebanon, Delaware". Delaware State Museum Series Bulletin No. 2, Dover, Delaware, 1970.
- Thomas, Ron A. "Adena influence in the Middle Atlantic coast". In: B.K. Swartz (editor), Adena: The seeking of an identity. Muncie, Ind., Ball State University, pp 56-87, 1970.
- . "A re-evaluation of the St. Jones River Site". Archaeology of Eastern North America, vol. 4 (1976):89-110.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Continuation SheetPrehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, MarylandSection number   H   Page   82  

- Tuck, James A. "Regional Cultural Development, 3000 to 300 B.C".  
In: B.G. Trigger (editor), Northeast Vol. 15 Handbook of  
North American Indians. Washington, D.C., Smithsonian  
Institute, 1978, pp. 16-22.
- Turnbaugh, W.A. "Toward an explanation of the broadspear dispersal  
in eastern North American prehistory". Journal of  
Anthropological Research, vol 31 (1975):51-68.
- Turner, E. Randolph. "Population Distribution in the Virginia  
Coastal Plain, 8,000 B.C. to 1600 A.D.". Archaeology of  
Eastern North America, vol 6 (1978):60-72.
- Waselkov, G. A. Shellfish Gathering and Shell Midden Archaeology.  
Ph.D. dissertation, University of North Carolina, Chapel Hill,  
1982.
- Wesler, K., D. Pogue, A. Luckenbach, G. Fine, P. Sternheimer, and  
E. Ferguson. The M/DOT archaeological resources survey Volume  
2: Western Shore. Ms on file, Maryland Historical Trust,  
Crownsville, 1981.
- Whitehead, P.R. "Developmental History of the Dismal Swamp".  
Ecological Monographs, vol 42 (1972):301-315.
- Wilke, Steve and Gail Thompson. Prehistoric Archaeological  
Resources in the Maryland Coastal Zone: A Management  
Overview. Maryland Department of Natural Resources, 1977.
- Willey, Gordon R. An Introduction to American Archaeology Vol. I:  
North And Middle America. Englewood Cliffs, New Jersey,  
Prentice Hall, Inc., 1966.
- Willey Gordon R. and Philip Philips. Method and Theory in American  
Archeology. Chicago, University of Chicago Press, 1958.
- Willey, Gordon R. and Jeremy A. Sabloff. A History of American  
Archaeology. Second edition. San Francisco, W.H. Freeman,  
1980.
- Wise, Cara L. "The Nassawango Site". Eastern States Federation  
Bulletin, vol 33 (1974):8.

See Continuation Sheet No. 83

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Prehistoric Human Adaptation to the  
Coastal Plain Environment of Anne Arundel  
County, Maryland

Section number   H   Page   83  

---

----- . "A Proposed Early to Middle Woodland Ceramic Sequence for the Delmarva Peninsula". Maryland Archeology, vol. 11, no. 1 (1975):21- 29.

Witthoft, John. "A PaleoIndian Site in Eastern Pennsylvania: An Early Hunting Culture". Proceeding of the American Philosophical Society, vol 96, no. 4 (1952):464-495.

Woodward, D.R. "Exploratory Excavations on the Dorr Property, Anne Arundel County, MD". Archaeological Society of Maryland Miscellaneous Papers, Number 8, 1969.

Wolfinger, Paul M. Radiocarbon Dates for Northeastern United States and Adjoining Areas. Lancaster, PA, Franklin and Marshall College, 1970.

Wright, Henry T. Field Notes on Maryland Archaeology. Manuscript on file, Maryland Historical Trust, Crownsville, Maryland, n.d.

----- . An Archeological Sequence in the Middle Chesapeake Region, Maryland. Archeological Studies, no. 1, Department of Natural Resources, Maryland Geological Survey, 1973.

Zuckerman, K. Slaughter Creek Comprehensive Survey Phase I. Manuscript on file, Delaware Division of Historical And Cultural Affairs, Dover, Delaware, 1979a.

----- . Slaughter Creek Comprehensive Survey Phase II. Manuscript on file, Delaware Division of Historical And Cultural Affairs, Dover, Delaware, 1979b.