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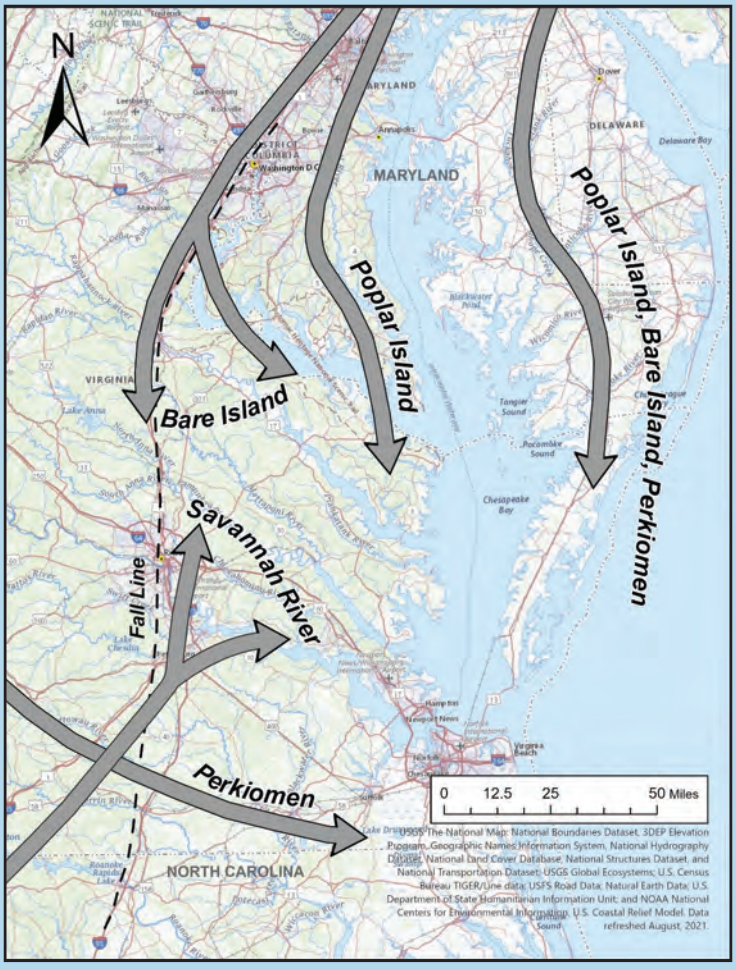

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Cover: Proposed Late Archaic Migration Vectors by Point Type.

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Editor's Note:

This issue has been a long time coming, not just for its lateness (for which I apologize), but also for the level of work being discussed by the authors. In the first case, Chris Egghart presents a detailed quantitative analysis of Late Archaic points across Eastern Virginia and Maryland that represents a significant research effort that he undertook during the pandemic years. Analyses at this scale are critical for better understanding larger settlement trends and cultural practices among early Native American societies. In the second article, Dr. Theodore Reinhart recounts his 40 year career in archaeology and anthropology, with significant impacts to the field in both Virginia and the American Southwest, and a notable legacy of students who continue to push the boundaries of archaeology. As one of my first professors and early mentors, it is wonderful to read about the highlights and contributions of Dr. Reinhart's career as he sees them, and I hope it encourages others out there to reflect on their careers and collect those thoughts into an article for the *QB*. Your recollections and comments on the field of archaeology can be great learning tools for the ASV membership and the public at large.

Thane Harpole

February 2023

LATE ARCHAIC PROJECTILE POINT TYPE FREQUENCIES AND DISTRIBUTION IN THE VIRGINIA COASTAL PLAIN: BIG DATA IN THE STUDY OF PERIOD CULTURAL DIVERSITY, SETTLEMENT, TERRITORIALITY, AND MIGRATION

By Christopher Egghart*

Abstract

This study typed or referenced over 18,000 projectile points from various assemblages across the Virginia Coastal Plain. These assemblages are organized into 28 watershed-based study units. Relative frequencies of Late Archaic points by study unit are used to gauge period settlement intensity. Individual point type counts are similarly indexed. Resulting values show distinct geographic variations in the relative frequency of specific point traditions. Also indicated are distinct settlement nodes associated with individual point types. Further discussed are aspects of group migration, interaction, and territoriality as evidenced by the analyzed projectile point data.

Introduction: The Study Area

The study area encompasses the Virginia Coastal Plain and adjoining Fall Line areas. While not within the modern polity of the Commonwealth, the mid and lower reaches of the Anacostia River are included as a natural extension of the Potomac Fall Line setting. In many respects, the Virginia Coastal Plain bridges the Northeast and Southeast prehistoric cultural regions. Late Archaic material culture traits of the upper Potomac align in part with those of the middle Susquehanna Valley and middle Delaware Valley. By contrast, the Nottoway and Meherrin rivers are part of the Carolina Sounds drainage, the lower portions of which are considered part of the greater Southeast. The Virginia Eastern Shore is included in the study. As part of the Delmarva region, little in the way of intervening terrain or major river systems separate the Eastern Shore from the Susquehanna and Delaware valleys to the north.

Study units are organized by watershed and further divided by river reach. The Virginia Coastal Plain is cross-cut by three major rivers that run roughly west to east. These are the Potomac, Rappahannock, and the James. Secondary drainages include the Anacostia, and the James tributaries consisting of the Chickahominy and Appomattox. The Nansemond also meets the lower James near the mouth of the Chesapeake Bay. The Carolina Sounds tributaries consisting of the Blackwater, Nottoway, and Meherrin drain most of the study area's southern tier. The North Landing River is also part of the greater Carolina Sound drainage and its mid-reaches represent the southeastern limits of the study.

Projectile Point Typology

The projectile point typology utilized in this study follows established sequences for the Middle Atlantic and Northeast regions. These include the Coe's (1964) type definitions for the North Carolina Piedmont, Broyles sequence for the Ohio River drainage as well as the pioneering works of Kinsey (1972), Ritchie (1971), and Witthoft (1953) in the Northeast. Stephenson and Fergusons's (1963) type definitions based on the Accokeek Creek site round out the regional sequences pertinent to the study area.

Point types are first grouped by six Major Traditions. These are: 1) Transitional Broadspears; 2) Northeast Broadspears; 3) Savannah River Group; 4) Late Archaic Narrow Blade; 5) Brewerton Cluster; and 6) Slade (Table 1).

* Graphics prepared by James Gloor.

Type	Reference	Major Tradition
Susquehanna	Witthoft 1953	Transitional Broadspears
Perkiomen	Witthoft 1953	
Snook Kill	Ritchie 1971	Northeast Broadspears
Lehigh/Koens-Crispin	Cross 1941; Witthoft 1953; Kinsey 1972	
Genesee	Ritchie 1971	
Cattle Run	Coe 1964; Geier 1996	Savannah River
Savannah River	Coe 1964	
Savannah River Narrow	Coe 1964	
Bare Island	Kinsey 1959; Ritchie 1971	Late Archaic Narrow Blade
Poplar Island	Kinsey 1959; Ritchie 1971	
Lackawaxen	Kinsey 1959	
Lamoka	Ritchie 1971	
Normanskill	Ritchie 1971	
Clagget	Stephenson and Ferguson 1963	
Brewerton Corner Notched	Ritchie 1971	Brewerton Cluster
Brewerton Side Notched	Ritchie 1971	
Brewerton Eared Notched	Ritchie 1971	
Brewerton Eared Triangle	Ritchie 1971	
Slade	McAvoy and McAvoy 1997, 2015	Unknown

Table 1. Late Archaic Points and Major Traditions.

Perkiomen (Figure 1) and Susquehanna (Figure 2) comprise the Transitional Broadspear tradition. As described by Witthoft (1953), Perkiomens have distinctive outlines defined by a tined stem and asymmetrical blade. Fully symmetrical forms also occur, as do specimens with straight stems. Jasper seems to have been favored for Perkiomen manufacture in Virginia, mirroring lithic preference of the type's core areas to the north. Other cryptocrystalline materials as well as quartzite were utilized. The Susquehanna point morphologically intergrades with Perkiomen, particularly in basal configuration. However, the blade is usually more elongated and almost always symmetrical in outline, even when resharpened. Susquehanna points across the study area are typically made of rhyolite, again mirroring lithic preference seen to the north.

Figure 1. Susquehanna (Left to right: quartzite, rhyolite, rhyolite; Dismal Swamp/Suffolk Scarp Mid, Potomac Fall Line, Dismal Swamp/Suffolk Scarp Mid) (All photos by the author).

The Lehigh/Koens-Crispin (Cross 1941; Kinsey 1972; Witthoft 1953) and the Snook Kill (Ritchie 1971) types are herein referred to as the Northeast Broadspears (Figure 3). As with Savannah River, these Broadspears seem part of a wide ranging Late Archaic phenomenon that witnessed the

adoption of large, wide blade point types manufactured of tough, durable materials (Dent 1995). Lehigh/Koens-Crispin and Snook Kill points are morphologically similar to Savannah River and a degree of cultural interconnection can be presumed. Lehigh/Koens-Crispin points are distinguished from Savannah River by their shorter, more trianguloid blade, as well as strongly contracting stem which typically terminates in a squared or bluntly rounded base. Snook Kill is very similar in form. Discriminating morphological attributes of Snook Kill include tined shoulders and a slightly offset stem. When present, these attributes lend specimens an asymmetrical outline. It is not clear if such asymmetry is a manufacture trait or the result of resharpening. Similarly, Snook Kill points sometimes exhibit unusual, strongly incurvate blade edges. The Lehigh/Koens-Crispin point is most closely associated with the Delaware Valley region where rhyolite manufacture is favored. Snook Kill seems to have been centered on the middle Hudson Valley, with chert and jasper typically use in manufacture. These lithic preferences carry into Virginia. Lehigh/Koens-Crispin specimens in this study were typically evenly split between rhyolite and quartzite manufacture, while cryptocrystalline materials characterized the Snook Kill type.

Figure 2. Perkiomen (Left to right: rhyolite, quartzite, Flint Ridge material, Bolsters Store chert; Left two: Dismal Swamp/Suffolk Scarp Mid, Right two: Nottoway Fall Line).

Of the Major Traditions, Savannah River is perhaps most closely associated with the Late Archaic in Virginia. In the southern half of study area, the easily recognized wide blade form described by Coe (1964) dominates (Figure 4). An apparently related type is Cattle Run (Figure 5) which was formally described by Geier (1996) in the Lower James/ Appomattox drainage. This point, which closely resembles Savannah River in blade form, manufacturing technique, and lithic preference is set apart by a short, strongly contracting stem. McLearen (1991) viewed the large, strongly contracting stem point as a variant of Savannah River rather than a distinct type. However, findings at the Cattle Run type site within the Bennett's Ford Complex (Geier 1996), as well as frequency distributions across the

Figure 3. Lehigh/Koens-Crispin (Left to right: quartzite, rhyolite, rhyolite; Dismal Swamp/Suffolk Scarp Mid, Meherrin Fall Line, Dismal Swamp Suffolk Scarp Mid). (Note: Lehigh/Koens-Crispin are distinguished from Cattle Run by a trianguloid versus lanceolate blade and a wider stem that usually tapers to square or bluntly rounded base. Rhyolite is also prominent in Lehigh/Koens Crispin manufacture within the study area.)

Nottoway River Fall Line (Egghart and Manson 2016) further suggest the point was temporally and/or culturally distinct rather than the product of idiosyncratic variations in Savannah River manufacture. A narrow-bladed Savannah River variant occurs across the study area (Figure 6). It is most prevalent in the Rappahannock drainage where it eclipses the wide-bladed Savannah River form. Although never formally described as such in published sources, when encountered in the Potomac drainage this narrow bladed point is often referred to as Holmes. This study uses the name Narrow Blade Savannah River.

Multiple point types are grouped within what Dent (1995) refers to as the Late Archaic Narrow Blade tradition (Figure 7, Figure 8, Figure 9, and Figure 10). These include Bare Island (Kinsey 1959; Ritchie 1971), Poplar Island (Kinsey 1959; Ritchie 1971), Lamoka (Ritchie 1971) and Normanskill (Ritchie 1971). Also included in the study is the Lackawaxen point (Kinsey 1959) which may have connections to the Bare Island and/or Poplar Island types (Figure 11). Lamokas appear across the study area. The type is relatively easy to recognize based on crude flaking, thick cross section, and variable basal form. The Normanskill type is only rarely referenced in Virginia site literature. In this study, the type is defined by way of a thick, elongated blade similar to that of Lamoka and by wide, seemingly oversized side notches. These can lend some specimens an ungainly expanding stem appearance. Quartz seems to have been favored in manufacture.

While the above Narrow Blade types were formally described based on site findings well north of Virginia, the Clagget type was defined at the Accokeek Creek Site along the tidal Potomac's Maryland shore (Stephenson and Ferguson 1963). Clagget points are generally well made, exhibiting a long narrow blade relatively thick in cross-section. Wide, shallow side notches are set close to the base. Together, these attributes give the point a rakish appearance. No radiocarbon dates have been published for Clagget and

Figure 4. Savannah River Wide (Left to right: all quartzite; James River Fall Line Metheny Collection).

Figure 5. Cattle Run (Left to right: all quartzite: James River Fall Line Metheny Collection). (Note: The Cattle Run type closely resembles Savannah River Wide in blade morphology, material preference and manufacture aspects. Characteristics common to both types include bilateral symmetry expressed in a wide, thin lanceolate blade with hard shoulders. A primary distinguishing trait of Cattle Run is a fast tapering stem usually ending in a pointed base.)

Figure 6. Savannah River Narrow (Left to right: all quartzite; James River Fall Line Metheny Collection).

Figure 7. Bare Island (Left to right: quartzite, quartzite, quartz, quartzite; Far left and far right: Dismal Swamp/Suffolk Scarp Mid; Center two: Nottoway Fall Line). (Note: Bare Island is distinguished from other Late Archaic Narrow Blade types by squared stem and blade in the form of an elongated isosceles triangle. Points are typically well made and exhibit strong bilateral symmetry.)

Figure 8. Poplar Island (Left to right: quartzite, quartz, quartzite, rhyolite; James River Fall Line Metheny Collection). (Note: Poplar Island can be distinguished from Morrow Mountain II by way of an elongated, lanceolate blade, soft shoulders, and rounded base.)

it is not fully clear if the point is a component of the Late Archaic Narrow Blade group. This Late Archaic study includes Clagget while acknowledging its morphological similarity to late Middle Archaic side notched types such as Halifax.

All four elements of the Brewerton Cluster occur across the study area, albeit in limited numbers. Definition of Brewerton Corner Notched (Figure 12), Brewerton Side Notched, Brewerton Eared Notched and Brewerton Triangle Notched follow the original type descriptions by Ritchie (1971). Although reliable radiocarbon dates are somewhat limited, the Brewerton tradition in Virginia is thought to have originated during the latter Middle Archaic and continued into the Late Archaic period.

Figure 9. Lamoka (Left to right: quartzite, quartz, quartzite, quartzite; James River Fall Line Metheny Collection). (Note: Defining characteristics include an elongated blade, a thick cross section often exhibiting a pronounced lateral ridge, and randomly placed, somewhat crude flaking. Also characteristic is variable stem morphology ranging from extended strait stem, expanding stem, to a wide stem defined by shallow side notching.)

Also included in the Late Archaic typology is the Slade Point (Figure 13) described by McAvoy and McAvoy (1997) along Nottoway River Fall Line. The Slade Point is very similar to Mouer's (1986a) State Farm type for central Virginia. As described by Knepper (1995) in Northern Virginia, the somewhat smaller Lobate Point may represent a local, quartz-based derivative. The Slade point has not been radiocarbon dated. Along the Nottoway River, Slade points have been recovered from stratigraphic contexts above Halifax but below Savannah River (Egloff and McAvoy 1990). This inferred temporal range correlates with that proposed by Knepper (1995) for Lobate. McAvoy and McAvoy (2015) differentiate between a Wide Blade and Narrow Blade variety of the Slade Point based on site findings along the Nottoway River Fall Line.

Proposed Virginia date ranges for the main Late Archaic types appear in Table 2. These are given in calendar years uncorrected. Most radiometric assays used in constructing this chronology were obtained well

Figure 10. Normanskill (Left to right: quartzite, quartz, rhyolite, quartz, quartz; Third and fourth from left: Nottoway Fall Line; Left two and far right: Dismal Swamp/Suffolk Scarp Mid). (Note: Defining characteristics of Normanskill are a narrow, elongated blade and pronounced side notching. Basal configuration ranges from slightly concave to bulbously convex. In strong contrast to Halifax, grinding is minimal or absent. Symmetry is usually limited to the blade, with notches and shoulder often bilaterally differentiated. Quartz is favored in the study area with quartzite and rhyolite also used.)

Figure 11. Lackawaxen (Left to right: high grade argillite, argillite, Carolina Slate Belt meta-rhyolite, argillite; Dismal Swamp/Suffolk Scarp Mid). (Note: Lackawaxen points are characteristically elongated and crudely flaked. They are thick with a cross-section which is often lenticular. Basal form varies from tapered to expanding. Argillite and other meta-sedimentary stone is strongly favored.)

Figure 12. Brewerton Corner-Notched (Left to right: all quartzite; Far left and far right: Nottoway Fall Line; Middle two: Dismal Swamp/Suffolk Scarp Mid). (Note: Brewerton Corner Notched points are easily distinguished from Early Archaic corner notched types by their bilateral asymmetry, particularly in notching, as well as absence of basal grinding. Flaking and overall manufacturing quality is also notably of lesser quality than typically seen in Early Archaic points.)

Figure 13. Slade (Left to right: all quartzite; James River Fall Line Metheny Collection). (Note: Defining morphological characteristics are a short, thick blade with wide and pronounced notches which gives the point a robust appearance. The base is concave with some specimens exhibiting a double lobe. Slade points are typically well made, with strong bilateral symmetry.)

outside of the study area and their applicability to the cultural sequences of Virginia are approximations. As such, the date ranges in Table 2 should be used for general orientation purposes only.

Type	Proposed Date Range*	References (for date range)
Susquehanna	1600 BC – 1000 BC	Egloff 2021; Stewart 2018
Perkiomen	1600 BC – 1300 BC	Egloff 2021; Stewart 2018
Snook Kill	2000 BC – 1600 BC	Stewart 2018
Lehigh/Koens-Crispin	2000 BC – 1500 BC	Kinsey 1971; Stewart 2018
Genesee	2200 BC –1500 BC?	Stewart 2018
Cattle Run	2000 BC – 1200 BC	Egloff 2021
Savannah River	2500 BC – 1200 BC	Egloff 2021
Savannah River Narrow	2500 BC – 1200 BC	Egloff 2021
Lamoka	2800 BC – 1800 BC	McAvoy and McAvoy 2015; Stewart 2018
Normanskill	2000 BC – 1500 BC	Stewart 2018
Bare Island	2500 BC – 1500 BC	McAvoy and McAvoy 2015; Stewart 2018
Lackawaxen	2800 BC – 1600 BC	Stewart 2018
Poplar Island	2500 BC – 1500 BC	Stewart 2018
Clagget	3000 BC – 2000 BC?	No radiocarbon dates published
Brewerton Corner Notched	3500 BC – 2000 BC	Stewart 2018
Brewerton Side Notched	3500 BC – 2000 BC	Stewart 2018
Brewerton Eared Notched	3500 BC – 2000 BC	Inashima 2008
Slade	2800 BC – 2000 BC?	No radiocarbon dates published

Table 2. Proposed Virginia General Date Ranges for Late Archaic Point Types.

* Calendar years uncalibrated; general reference only.

Methodology

When seeking point assemblages to study, emphasis was placed on large, multi-component sites occupied throughout much of prehistory. In other cases, findings of large area surveys or data from a constellation of excavated sites were utilized. This mesoscale analysis minimizes any skewering of the resultant data by anomalous sites or site occupation components. The focus of the study is on the hunter gather groups of the Late Archaic. Late Archaic settlement intensity is gauged by indexing relative frequencies of Late Archaic point types against those of other time periods. Such comparisons would need to be limited to material groups with similar, pre-horticultural lifeways. As such, all quantitative analyses exclude triangle points.

Initial analysis presents the sum total of all Late Archaic points. This is done by Major Tradition and also individual point type. Raw counts by type are first provided in study area-wide context. Rather than utilizing these raw counts, the bulk of the analysis relies on indexed values. This allows for direct comparisons across data sets of varying size. In order to quantify Late Archaic settlement as a whole, point totals are expressed as the percentage of all non-triangle specimens. This result is referred to as the Settlement Intensity (SI) Index. Similarly, SI Index values for individual Late Archaic types are derived by dividing the number of the points by the sum of all Late Archaic points in a particular context.

The bulk of the analysis is geographically specific. To accommodate this the Virginia Coastal Plain is broken into logical study units (Figure 14) organized by watersheds and physiographic setting. These units are:

1. Anacostia River Upper/Fall Line
2. Anacostia River Lower
3. Potomac River Falls
4. Potomac River Freshwater Tidal
5. Potomac River Lower Tidal/Bay
6. Rappahannock River Fall Line
7. Rappahannock River Freshwater Tidal
8. Rappahannock River Lower Tidal/Bay
9. York River Upper (Pamunkey)
10. Chickahominy River Upper
11. Chickahominy River Lower
12. Peninsula Interior
13. James River Fall Line
14. James River Freshwater Tidal
15. James River Lower Tidal/Bay
16. Appomattox River Tidal
17. Blackwater River Mid-drainage
18. Nottoway River Fall Line
19. Meherrin River Fall Line
20. Meherrin—Roanoke Inter-fluvial
21. Nansemond River
22. Suffolk Scarp North/Dismal Swamp
23. Suffolk Scarp Mid/Dismal Swamp
24. Lower Bay West Shore
25. North Landing River
26. Lynnhaven River/Cape Henry Interior
27. Eastern Shore Lower
28. Eastern Shore Upper

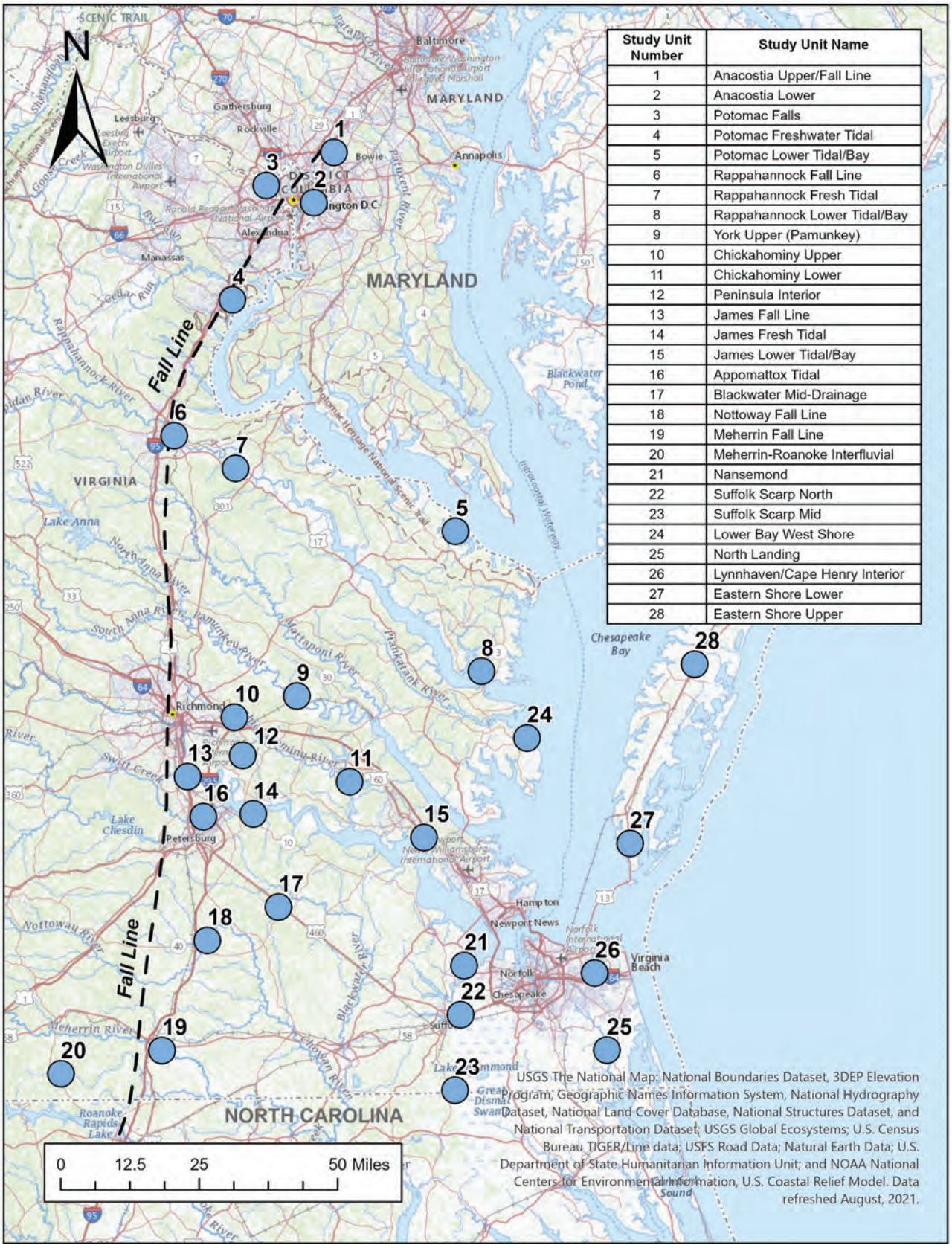
Presentation of findings generally follows the above order, which is sequenced north-south, then west-east and finally south to north up the Eastern Shore. This can be geographically visualized as a reverse "J", beginning with the Potomac Falls, progressing south to include the major Coastal Plain river drainages, before capturing the Tidewater region, the Lower Bay Western Shore, and ultimately the Eastern Shore peninsula.

The major Coastal Plain river systems consisting of the Potomac, Rappahannock and James are each subdivided into the Fall Line, Mid-Drainage (freshwater tidal) and Lower Tidal units. Although the Chickahominy represents a relatively modest drainage, it was intensively settled throughout prehistory. Site locations along the river are grouped into the Upper Chickahominy and Lower Chickahominy study units. These correspond to the Chickahominy Swamp environs and the river's tidally embayed lower reaches.

The Appomattox Study Unit consists solely of the nine-mile stretch from the base of the Falls to the river's mouth. In physiographic and environmental context, the Appomattox Study Unit is seen as an appendage of the freshwater tidal James River. The greater Carolina Sounds drainage encompasses three study units. These consist of the Nottoway River Fall Line, which includes adjacent Inner Coastal Plain, the Blackwater Mid-drainage, and the Meherrin Fall Line. The Carolina Sounds rivers are only indirectly connected to ocean waters by way of distant inlets that cut through the Outer Banks barrier island chain. As such, they essentially lack astronomic tidal influence and their environmental character differs significantly from the embayed Chesapeake Bay tributaries to the north.

The Virginia Delmarva is divided into the Lower Eastern Shore and Upper Eastern Shore units, arbitrarily demarcated by the Northampton-Accomack county line. In addition to the Eastern Shore, several other study units are not orientated to major river valleys. The Peninsula Interior Study Unit encompasses the Chickahominy headwaters, the Peninsula drainage divide, and low order James tributaries. As a physiographic feature, the Suffolk Scarp prominently defines the western Great Dismal Swamp margins. The Suffolk Scarp is a well-known hot spot for Archaic Period settlement, as are the Lynnhaven/Broad Bay environs just inside of Cape Henry. These two settings round out the Tidewater region study units. The Meherrin—Roanoke Inter-fluvial Study Unit encompasses Fall Zone uplands between the two river valleys. Data for this unit was obtained from a major power line corridor survey and reflects local Late Archaic settlement in upland settings.

Point type data was derived from a mix of published literature and private collections analyzed by the author. A challenge associated with these literature searches was that some of the older reports did not distinguish between Wide Blade Savannah River, Narrow Blade Savannah River and Cattle Run, placing all three forms under a common Savannah River banner. This issue was fully manifested in the Meherrin – Roanoke Inter-fluvial and Lower Chickahominy units. Where appropriate, relative frequency values for the three Savannah River variants were extrapolated from report illustrations and data from adjoining study units in similar settings. Another challenge associated with Savannah River was encountered in the Dismal Swamp area where extreme resharpening (likely due to the lithic poor nature of that setting) made distinction between Wide Blade and Narrow Blade problematic. Relative frequency values for these two forms along the Dismal Swamp can be considered estimations. In a few instances, point type identifications in the published literature were re-evaluated based on published photographs. At the Spring Run Site along the Potomac Falls, McNett



Study Unit Number	Study Unit Name
1	Anacostia Upper/Fall Line
2	Anacostia Lower
3	Potomac Falls
4	Potomac Freshwater Tidal
5	Potomac Lower Tidal/Bay
6	Rappahannock Fall Line
7	Rappahannock Fresh Tidal
8	Rappahannock Lower Tidal/Bay
9	York Upper (Pamunkey)
10	Chickahominy Upper
11	Chickahominy Lower
12	Peninsula Interior
13	James Fall Line
14	James Fresh Tidal
15	James Lower Tidal/Bay
16	Appomattox Tidal
17	Blackwater Mid-Drainage
18	Nottoway Fall Line
19	Meherrin Fall Line
20	Meherrin-Roanoke Interfluvial
21	Nansemond
22	Suffolk Scarp North
23	Suffolk Scarp Mid
24	Lower Bay West Shore
25	North Landing
26	Lynnhaven/Cape Henry Interior
27	Eastern Shore Lower
28	Eastern Shore Upper

Figure 14. Study Unit Locations.

(1975) grouped somewhat crudely made, notched points under the provisional name Spring Run, while linking them to the Hellgrammite type. The majority of these points seemingly represent elements of the Brewerton Cluster, specifically Brewerton Eared Notched. These are re-typed accordingly in this study. On the Eastern Shore, quartz stemmed points typed by Lowery (2001, 2003) as Piney Island are rolled into the Bare Island designation. A significant number of point finds associated with the Atlantic Coast Pipeline Phase I Survey (Stanyard 2016) were retyped by the author based on photographs in the compliance document.

Data Sources and Data Quality

Data Sources

Data sources utilized in this study include private collections, museum-curated assemblages, tribal held material, and artifacts garnered from regional surveys and excavations. The latter were undertaken by individuals, the Virginia Department of Historic Resources (VDHR), the Archaeological Society of Virginia (ASV), private foundations, and Cultural Resource Management (CRM) firms. An unexpectedly rich data source proved to be projectile point assemblages recovered from intensively excavated historical sites. These include ongoing efforts at George Washington's Mount Vernon, Washington's boyhood home of Ferry Farm, and the original 1607 fort complex on Jamestown Island.

LeeDecker's (1991) excavation at the Indian Creek V site (18PR94) provided data for the Anacostia headwaters. Settlement data for the lower Anacostia was gleaned from four sites collected during the late 19th and early 20th century build- out of Washington D.C. These artifacts are curated at the Smithsonian Institution. The Potomac Falls Study Unit data encompassed a series of sites located along minor cross-cutting streams that meet the river as it leaves the Potomac Gorge at Little Falls. These site locations have long attracted the interest of prehistoric researchers and include the Marcey Creek Site (Manson 1948), Donaldson Run (Deppe 1972), Spring Run (McNett 1975) and Gulf Branch (Johnson 2001). These streamside settlements are herein referred to as comprising the Potomac Gorge Site Complex.

Ongoing cemetery delineation at George Washington's Mount Vernon estate provided significant data. The cemetery (Site 44FX0116), situated on a narrow spur overlooking the confluence of a low order tributary and the tidal Potomac, was intensively occupied throughout the Late Archaic period. Data for the Potomac Freshwater Tidal Study Unit also includes the extensive collection from the Aquia Site (44ST1164), located near the mouth of its namesake Potomac tributary in Stafford County. Potomac River Lower Tidal/Bay assemblages include shoreline collections undertaken by VDHR (Egloff and MacAvoy 1979) and findings from dissertation work by Waselkov (1982) at the White Oak Point and by Potter (1982) along the Coan River.

Analysis of the Rappahannock drainage was able to draw on large, site-specific assemblages. Fall Line data was anchored by the extensive work undertaken by the George Washington Foundation at Ferry Farm (Site 44ST0174). Located on a high terrace just below the Rappahannock Falls, the boyhood home of the first president was also the site of a major Native American settlement occupied from the Paleo-Indian period through Late Woodland times. The Ellis Farm (Site 44KG0008) and Hastings Farm collections were garnered from their namesake family properties along the freshwater tidal reaches of Rappahannock. These collections, which totaled 421 identifiable points dating from Paleo-Indian to Late Woodland were analyzed by Wertz as part of her master's thesis. Julia King's Rappahannock River survey efforts provides a wealth of projectile point data, particularly for the river's lower tidal reaches (Strickland 2019).

Available data for the York River system was relatively limited. Analysis of the upper York drainage relies on findings of the William & Mary Center for Archaeological Research's (WMCAR) Phase I of the Pamunkey Reservation (Shephard 2019) and Turner's (1976) work along the Pamunkey River as part of his broader Coastal Plain dissertation studies. Data for the York River proper proved elusive. Turner (1976) recorded only a single Late Archaic point (Savannah River) in Gloucester County. An inspection of the Werowocomoco surface collection housed at VDHR showed it to consist almost entirely of Woodland period types. In addition, no private point collections could be located for the drainage. The apparent dearth of Late Archaic site components along the York River was underscored by the findings of WMCAR's approximately 6,000-acre survey of the Yorktown Naval Weapons Station (Underwood et al. 2003). This work documented 240 archaeological sites, only four of which dated to between 3000 BC and 1200 BC. This lack of period site components along the York is thought to be the product of physiographic aspects specific to that drainage

rather than actual prehistoric settlement factors. The present day York estuary extends northwest - southeast in a straight line while lacking high order tributaries. Intermediate order stream confluences are limited to the Poropotank on the north bank and Queen's Creek on the south. Also lacking are peninsula landforms carved by ancient river meandering such as those seen along the Lower James (City Point, Curles Neck, Jordans Point, Flowerdew, Maycox, and others) that were foci of both Archaic and Woodland period settlement. A cursory review of York River bathymetric data shows the drowned main channel also fully straight and uniformly bordered by tidal flats. It is postulated that Archaic settlement was centered on these former floodplains that are now shallowly inundated by sea level rise.

Significantly more data was available for the Chickahominy drainage. A majority of this data was garnered from controlled excavations. These include the Archeological Society of Virginia (ASV) and Virginia Commonwealth University (VCU) efforts at the Nase (Site 44HE0001) and Posnick (Site 44HE0003) sites (Egghart 2018; MacCord 1964; MacCord and Owen 1965). Both sites were located along the river's swampy, upper reaches. The College of William & Mary's Chickahominy Survey excavations (Gallivan et al. 2009) proved a be a very useful data source for the river's lower reaches, as did McCary's (1976) findings at Moysonec, located along the mouth of Diascund Creek. Surface collection of this sprawling site complex yielded nearly 500 non-triangle projectile points.

Analysis of the Virginia Peninsula Interior relied on nine Section 106-Compliance Data Recoveries undertaken by VCU in association with the Henrico Regional Wastewater System development (Mouer 1986a, 1986b; McLearen 1987). This wastewater line originates along the Chickahominy headwaters near the Fall Line. It follows minor stream valleys into the Peninsula interior before crossing the Chickahominy – James watershed divide. South of the divide the right of way runs the length of Four Mile Creek to a treatment plant along the James River at Deep Bottom.

The Metheny Collection was garnered during the 1960s from a series of sites along minor James River tributary streams just below the Falls. These streams drain upland terraces along what are now heavily developed portions of Chesterfield County. This amalgamated assemblage provides the data for the James River Fall Line Study Unit, along with Section 106 Compliance work by James Madison University in similar settings (Geier 1988; Geier et al. 1989, Geier 1996). Data for the down-river James River tidal reaches relied on controlled excavations. These include the ASV and VCU efforts at the Deep Bottom Complex (Site 44HE0003/0038) (Buchanan 1969; Egghart 2014). Other investigations include MacCord's (1967) work at the Hopewell Airport Site (44PG0001) on Jordans Point, as well as subsequent VDHR/VCU investigations of the extensive prehistoric and early 17th-century site complex (McLearen and Mouer 1993, 1994) in the same location. Points recovered from mostly redeposited contexts during the course of excavations at James Fort were type-analyzed. Data for the James lower tidal are rounded out by results of comprehensive surveys of Jamestown Island (Blanton et al. 2001) and Mulberry Island/Fort Eustis (Opperman 1985).

The Blackwater Mid-Drainage is represented by the Disputanta Site (44PG0553), collected by Robert Ogle. Also located on terraces overlooking Blackwater Swamp were two large multi-component sites recorded in the V-CRIS database as the Jones Farm (Site 44PG0003) and the Sklak Farm (Site 44PG0010). The bulk of the Ogle Collection was garnered from sites along the Nottoway River Fall Line, with the very large assemblages analyzed by Egghart and Manson (2016). The Ogle Stony Creek 3 (Site 44SX0405) site is located on a broad floodplain along the confluence of Stony Creek and the Nottoway River. The Ogle Stony Creek 3 site name and state trinomial (Site 44SX0405) represents a V-CRIS overlay of "The Stony Creek Site" (Site 44SX0001) first brought to the attention of the archaeological community by Louis Binford. The Ogle Carter 2 Site (44SX0411) fronts a large wetland complex near the mouth of Rowanty Creek, several miles downriver. Also utilized for the Nottoway Fall Line Study Unit were excavation findings from the Cactus Hill Site (McAvoy and McAvoy 1997, 2015) and the Slade Farm Complex (Site 44SX6/7/98/162) (McAvoy and McAvoy 2015). Both of these well-known sites are situated on broad aeolian terraces a few miles downriver of the Stony Creek confluence.

Analysis of the upper Meherrin River setting relies in part on two very large Phase I studies: the recent Atlantic Coast Pipeline (ACP) Phase 1 Survey in Greenville County (Stanyard 2016) and the major power line corridor survey undertaken by Thunderbird (Gardner 1985). The latter is a unique data source in that findings were primarily from broad, inter-fluvial uplands rather than riverine or estuarine settings. Specifically, the

survey corridor extended across a broad upland area that separates the Meherrin River drainage in Virginia and Roanoke River valley in North Carolina.

The Suffolk Scarp/Western Dismal Swamp environs have long been recognized as a major hot spot for Archaic settlement. Data for the corresponding study unit was provided by the extensive collections of James Pritchard. Gwynn's Island and surrounding areas along the Lower Chesapeake Bay western shores have yielded some rather substantial projectile point collections. The majority of points in the unit were from the Long Collection now housed at the Gwynn's Island Museum. These materials were collected from now partially submerged lands along the island's southern tip. Two private collections garnered from Mathews County shorelines round out the study unit.

Data for the Eastern Shore study units was gleaned from coastal surveys by Lowery (2001, 2003) and from analysis of the private collection of David Bundick. Lowery's (2003) survey of the ocean-side islands identified or revisited a suite of sites that collectively provide much of the data for the Lower Eastern Shore. A full listing of data sources appears in Table 3.

Data Quality

Quality of the data in this study is deemed good to excellent. All of the private collections had a known chain of custody and most could be tied to specific site locations. Although exact provenience provides additional research potential, the geographic study-unit analysis used in this study makes precise location less important than knowledge that the data is appropriately representative. Care was taken to assure that the analyzed collections were intact and had not been high-graded or otherwise sorted or parsed.

In gathering data, emphasis was placed on large collections/excavated assemblages with a full range of temporal components. Most contain points dating from the Early Archaic through the Late Woodland. The Rappahannock, James, Nottoway, Suffolk Scarp and Eastern Shore units included Paleo-Indian points. Utilizing numerous large multi-component assemblages provides reasonable confidence that Late Archaic settlement (as represented by point type counts) reflects broad trends rather than being the product of site-specific factors. Similarly, data from regional surveys or a constellation of Section 106-compliance excavations serve to minimize potential site-specific biases.

Research Objectives and Goals

The first objective was to establish a baseline for Late Archaic settlement in study area-wide context. The second was to chart settlement intensity as represented by distinct Late Archaic projectile point traditions in geographic/physiographic context. Relative occurrence of specific point types across physiographic and environmentally distinct settings is seen as providing a window into the settlement mode and subsistence orientations of the respective groups. The study also seeks to assess the potential role of in-migration and possible vectors for such movements.

Specific research questions include:

1. What was the nature and intensity of Late Archaic settlement in the Virginia Coastal Plain in relation to the pre-Late Woodland era as a whole?
2. What differences in Late Archaic settlement can be seen across watershed/physiographic settings?
3. What differences might be expressed in settlement by the Late Archaic Major Traditions across the study area?
4. What is the quantitative occurrence of individual projectile point types across the study area?
5. Might type-specific variations in point occurrence reflect culturally based settlement differences or territorial manifestations?
6. How might point type patterns of occurrence inform potential group movement or migration vectors?
7. What was the potential nature of inter-group relations with respect to settlement, trade, social interaction, competition, and conflict?

Study Unit	Sites/Assemblage/Collection	Reference (Point ID)
Anacostia Upper/ Fall Line	Indian Creek V (18PR94)	LeeDecker et al. 1991
Anacostia Lower	Smithsonian, Bennings, Anacostia, and Pennsylvania Ave Bridge	This Volume
Potomac Falls	Marcey Creek (44AR2)	Manson 1948
	Gulf Branch (44AR5)	Johnson 2001
	Donaldson (44AR3)	Deppe 1972
	Spring Branch (44AR6)	McNett 1975
Potomac Freshwater Tidal	Mt Vernon Cemetery (44FX0116)	This volume
	Aquia (44ST1164)	This volume
Potomac Lower Tidal	Thicket Point Bay (44NB116)	Egloff and McAvoy 1979
	White Oak Point (44WM119)	Waselkov 1982
	Plum Nelly (44NB128)	Potter 1976
	Boat House Pond (44NB111)	Potter 1982
Rappahannock Fall Line	Ferry Farm (44ST174)	This volume
Rappahannock Fresh Tidal	Hastings Farm	Wertz n.d.; This Volume
	Ellis Farm	Wertz n.d.; This Volume
Rappahannock Lower Tidal	Cordes Collection (multiple)	Strickland 2019
York Upper (Pamunkey)	Pamunkey Survey (multiple)	Shephard et al. 2019
	Turner Coastal Plain Survey (multiple)	Turner 1976
	West Point Farms	This volume
Chickahominy Upper	Nase (44HE1)	Egghart 2018; McCord 1964a
	Posnick (44HE3)	Egghart 2018; McCord and Owens 1964
Chickahominy Lower	Moysonec (44NK9)	McCary 1976
	William & Mary Chickahominy Survey (multiple)	Gallivan et al. 2009
Peninsula Interior	VCU Henrico Regional Wastewater Project (multiple)	Mouer 1985, 1986a, 1986b; McLearen 1987
James Fall Line	Metheny Collection (multiple)	This volume
	Tate (44CF268)	Geier 1988
	Bennetts Ford (44CF257a/44CF257b)	Geier et al. 1989; Geier 1996
	CF Dominion (44CF0698)	Laird et al. 2015
James Fresh Tidal	Deep Bottom (44HE7/38)	Buchanan 1969; Egghart 2014
	Hopewell Airport (44HE01) Jordans Point (44PG302)	MacCord 1967; McLearen and Mouer 1993, 1994
	Bailey Bay shore line (44PG464)	This volume

Table 3. Data Sources Utilized in Study.

Study Unit	Sites/Assemblage/Collection	Reference (Point ID)
James Lower Tidal	Jamestown Fort (44JC1)	This volume
	Black Oak (44JC895)	Pullins and Blanton 2000
	Jamestown Island Survey (multiple)	Blanton et al. 2001
	Fort Eustis Phase I Survey	Opperman and Hanson 1989
	Joint Base Eustis-Langley Cultural Resources Data Base	Joint Base Eustis-Langley 2020
Appomattox Tidal	VDHR Fall Line Study (44PG67, 44PG79, 44PG371)	Egloff 1989
	(44PG87)	Stuck et al.1997
	Fort Lee Phase 1 Survey (multiple)	Opperman and Hanson 1985
Blackwater Mid-Drainage	Ogle Collection Disputanta (44PG553)	Egghart and Manson 2016
	Jones Farm (44PG3)	MacCord 1963
	Sklak Farm (44PG10)	McCord 1964b
Nottoway Fall Line	Cactus Hill (44SX202)	MacAvoy and McAvoy 1997
	Slade Farm Complex (44SX6/7/98/162)	McAvoy and McAvoy 2015
	Ogle Stoney Creek 3 (44SX1/405); Ogle Carter 2 (44SX411)	Egghart and Manson 2016
Meherrin Fall Line	John Green (44GV1)	This volume
	Atlantic Coast Pipeline Survey	Stanyard 2016
	Thompson Collection (multiple)	This volume
Nansemond	Prichard Collection Barrel Point (44SK157), Wills Cove (44SK55), Ferry Point (44SK89), Brady's Marina (44SK91)	This volume
Meherrin-Roanoke Interfluvial	VEPCO Greenville –Northampton Transmission Line Phase 1 (multiple)	Gardner 1985
Suffolk Scarp North/ Dismal Swamp	Prichard Collection Magnolia (44SK155)	Egghart 2020; This volume
Suffolk Scarp Mid/ Dismal Swamp	Prichard Collection White Marsh & Desert Rd Complex (44SK15, 44KS63, 44SK69, 44SK105-107, 44SK109)	This volume
Lower Bay West Shore	Gwynn's Island Museum (44MT9-44MT18)	This volume
	Bethel Beach (44MT26)	This volume
	Timmons Collection, Mathews Shoreline	This volume
North Landing	Pritchard Collection Fentress Complex (44VB9-16); Smith/ Sawyer (44290); Gum Swamp (44CS250)	This volume
Lynnhaven/Cape Henry	Pritchard Collection Great Neck/Long Creek (44VB5/6/7), Quail Springs (44VB8); Argona (n/a)	This volume
Eastern Shore Lower	VDHR Eastern Shore Survey (multiple)	Lowery 2001, 2003
Eastern Shore Upper	VDHR Eastern Shore Survey (multiple) Bundick Collection	Lowery 2001, 2003 This volume

Table 3. Data Sources Utilized in Study, continued.

Findings

Global Frequency of Late Archaic Points

A total of the 18,632 non-triangle points were typed or source-referenced for this study. Of these, 34.8 percent date to the Late Archaic period (Table 4). This percentage, or global SI Index, provides a comparative baseline for more granular, study unit-based analyses of Late Archaic settlement.

Total ID Point Count	Late Archaic ID Count *	SI Index
18,632	6,486	34.8
13,228*	4,676*	35.3*

Table 4. Global Late Archaic Point Counts and Settlement Intensity (SI) Index.
*Values do not include Suffolk Scarp Mid Study Unit.

Of the 18,632 type-identified points 5,404 were from the Suffolk Scarp Mid Study Unit. This represents 29.0 percent of the total. Initial breakdown of findings is intended to provide a comparative view of both absolute and relative point type frequencies in a study area-wide context (Table 5 and Table 6). As such, the outsized Suffolk Scarp data set is factored out of this initial line of analysis.

Global point totals are first broken down by Major Tradition (Table 5). Derived SI Index values allow for direct comparisons. The Savannah Rivers dominate the global assemblage, comprising 48.1 percent of all Late Archaic points. Collectively, the Late Archaic Narrow Blade types account for just over one quarter (28.3 percent) of the total. Transitional Broadspears, the Northeast Broadspears, and Brewerton Cluster types occur in similar, albeit limited frequencies. An outlier in the Major Tradition scheme is the Slade type, which does not appear to have any morphological analogs. Slade accounts for less than two percent of all Late Archaic points in the study.

Major Tradition	Total Counts*	SI Index
Savannah River Group	2,247	48.1
Late Archaic Narrow Blade	1,322	28.3
Northeast Broadspears	399	8.5
Brewerton Cluster	358	7.7
Transitional Broadspears	264	5.6
Slade	86	1.8
All Late Archaic	**4,676**	**100**

Table 5. Late Archaic SI Index by Major Tradition.
* Major Tradition Totals do not include Suffolk Scarp Mid Study Unit.

As indicated by Major Tradition counts, Savannah River dominates the global assemblage, with Wide Blade the most numerous (Table 6). The Poplar Island point is the most common non-Savannah River type. Bare Island and Lamoka are also well represented in the global assemblage. Of the Northeastern Broadspears, Lehigh/Koens-Crispin are the most numerous. Snook Kill occurs with limited frequency, while only three (3) Genesee points were encountered.

Of possible significance is that several sets of morphologically similar point types occur with similar frequency. These include: Cattle Run (n=428) and Lehigh/Koens-Crispin (n=353); Polar Island (n=415) and Bare Island (n=348); Brewerton Corner Notched (n=155) and Brewerton Side Notched (n=130); and Perkiomen (n=129) and Susquehanna (n=135).

General Observations of Lithic Utilization by Point Type

Detailed analysis of lithic utilization is beyond the research scope of this work. However, some observed trends in lithic preference expressed by Late Archaic point types warrant mention. The favoring of certain lithic material in point production has significant implications for group movement as well as economic and social interaction, particularly in the Tidewater region and the Eastern Shore which are distant from most stone sources.

Lithic preference by specific point types largely mirrors those noted across the Middle Atlantic region and beyond. Savannah River manufacture, to include Cattle Run, is overwhelmingly quartzite; typically in excess of 90 percent. A majority of Susquehanna points are manufactured on rhyolite. In the southeast portion of the study area a large majority of Susquehanna points were on purple rhyolite thought to originate in Pennsylvania. Perkiomen points strongly favor the cryptocrystallines, with chert, chalcedony and jasper commonly utilized. Quartzite was also used. A majority of Dismal Swamp Perkiomens were made of chert, notably the Bolsters Store variety sourced from the Nottoway Fall Line. The Late Archaic Narrow Blade types of Bare Island, Poplar Island and Lamoka seem to have favored quartz and quartzite, presumably locally procured in cobble form. Though rare in the study area, Lackawaxen points were nearly all of argillite or similar meta-sedimentary material. The few Genesee points encountered were all of jasper. Of note is that over half of the Lehigh/Koens-Crispin identified in the study were rhyolite, with most of the remainder made of quartzite. Snook Kill exhibited a similar breakdown between rhyolite and quartzite, with jasper and chert also used.

Point Type	Total Count*	SI Index
Savannah River Wide	1,355	29.0
Savannah River Narrow	464	9.9
Cattle Run	428	9.2
Poplar Island	415	8.9
Lehigh/Koens Crispin	353	7.5
Bare Island	348	7.4
Lamoka	313	6.7
Brewerton Corner Notched	155	3.3
Clagget	150	3.2
Susquehanna	135	2.9
Perkiomen	129	2.8
Brewerton Side Notched	130	2.8
Slade	86	1.8
Normanskill	72	1.5
Brewerton Eared Notched	60	1.3
Snook Kill	43	0.9
Lackawaxen	24	0.5
Brewerton Eared Triangle	13	0.3
Genesee	3	0.1
All Late Archaic	**4,676**	**100**

Table 6. Global Late Archaic Point Counts by Type and SI Index. *Type Totals and derived SI Indices do not include Suffolk Scarp Mid Study Unit.

Analyses by Study Unit

The bulk of analysis in this work addressed relative point frequencies by watershed-based study unit. This relies on a three-tiered approach. The first looks at relative frequencies of all Late Archaic points by study unit. Indexed results provide a measure of Late Archaic settlement intensity in geographic specific contexts. The second study unit-based analysis examines settlement by Major Point Tradition. Relative frequencies of individual Late Archaic point types by study unit are then presented.

Late Archaic Settlement Intensity by Study Unit

Table 7 lists total type-identified points and the number of Late Archaic points by study unit. The percentage of Late Archaic points in relation to all identified points is expressed and an indexed value is in the right hand column.

In the following section, Late Archaic SI Index findings are presented in cartographic format (Figure 15). The SI value for each study unit is tabulated on the right side of the map. Corresponding values appear in geographic position on the map. This format is maintained throughout in the presentation of findings per the relative frequencies of Major Traditions and individual point types

Figure 16 presents SI Index values by study unit ordered from high to low. The bar graph rankings show a strong favoring of lower freshwater tidal reaches of the major drainages, as well as the swampy margins of secondary rivers. The latter includes the lower Anacostia, lower Chickahominy, and the North Landing in the southeast Virginia interior.

The SI Index values in Figure 16 (also see Table 7) underscore some long standing observations with respect to Late Archaic settlement, but also reveal some unexpected findings. The most intensive Late Archaic settlement was centered in the mid-freshwater tidal James River to include the lower Chickahominy and

Appomattox. This intensity of Late Archaic settlement has long been evident to the author and other researchers, particularly with respect to Savannah River. Not surprisingly, the lowest relative frequency of Late Archaic points was registered in the inter-fluvial upland unit spanning the Meherrin-Roanoke drainage divide.

Relative Frequency of Select Late Archaic Major Traditions by Study Unit

The following section presents the relative frequencies (SI Index) of select Major Traditions by study unit. The most prevalent traditions are the Savannah River Group and Late Archaic Narrow Blade. Corresponding SI Index values are presented in cartographic format. Elements of the Brewerton Cluster are collectively presented in this same manner. The Slade point is analyzed as an individual type in the succeeding section.

The SI Index values for the Savannah River Group (Figure 17) clearly underscore that tradition's dominance along the greater tidal James River. This dominance extends south to the Nottoway River Fall Line and also northeast to the upper York drainage. However, relative frequencies of the Savannah River points fall significantly near the mouth of the James and also along the fringes of the Carolina Sounds complex in the far southeast. Savannah River points occur with the least frequency along the length of the Rappahannock, only to become significantly more prevalent in the Potomac drainage.

Relative frequency of Late Archaic Narrow Blade tradition is highly uneven (Figure 18). There is significant variation both within and across river drainages. Areas of peak occurrence include the geographically disparate Dismal Swamp margins, the Lower James, the Rappahannock Fall Line and the Lower Anacostia. An inverse relationship with Savannah River appears to be expressed in multiple areas of the study.

Study Unit	Total Points ID	Late Archaic Points ID	Late Archaic SI Index
Anacostia Upper/Fall Line	126	41	32.5
Anacostia Lower	173	83	48.0
Potomac Falls	149	74	46.8
Potomac Freshwater Tidal	154	71	46.1
Potomac Lower Tidal/Bay	230	107	46.5
Rappahannock Fall Line	172	45	26.2
Rappahannock Freshwater Tidal	344	121	35.2
Rappahannock Lower Tidal/Bay	1,056	373	35.3
York Upper (Pamunkey)	125	44	35.2
Chickahominy Upper	182	75	41.2
Chickahominy Lower	545	278	51.0
Peninsula Interior	205	74	36.1
James Fall Line	580	230	39.7
James Freshwater Tidal	341	199	58.4
James Lower Tidal/Bay	224	103	46.0
Appomattox Tidal	48	34	70.8
Blackwater Mid-drainage	227	85	37.4
Nottoway Fall Line	2,754	877	31.8
Meherrin Fall Line	229	78	34.1
Meherrin-Roanoke Inter-fluvial	106	16	15.1
Nansemond	657	244	37.1
Suffolk Scarp North/Dismal Swamp	2,860	564	19.7
Suffolk Scarp Mid/Dismal Swamp	5404	1842	34.1
Lower Bay West Shore	161	54	33.5
North Landing	1,038	540	52.0
Lynnhaven/Cape Henry Interior	268	134	50.0
Eastern Shore Lower	139	35	25.2
Eastern Shore Upper	135	65	48.1
Global	**18,632**	**6,486**	**34.8**

Table 7. Late Archaic SI Index by Study Unit.

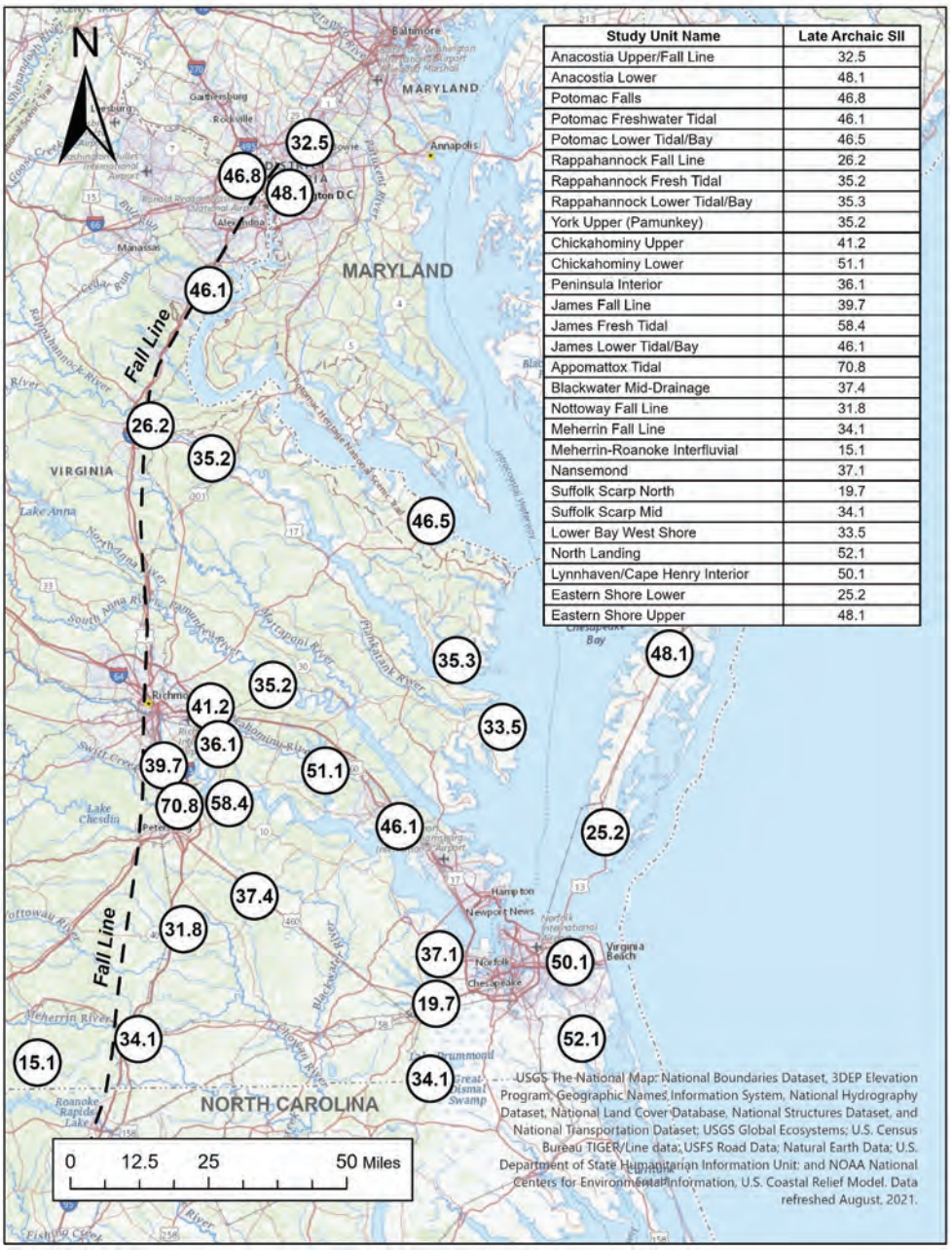
Figure 19 presents relative frequency of the Brewerton Cluster. Brewerton point distributions seem similar to that of the Late Archaic Narrow Blade tradition. Significant variation is noted both across and within individual watersheds. No particular physiographic or environmental setting seems to have been favored. An anomalous peak occurs in the Rappahannock Freshwater Tidal units. This peak is not replicated in any of the other freshwater tidal river reaches.

Relative Frequencies of Individual Point Types by Study Unit

In this section relative frequencies (SI Index) of individual point types are analyzed at the study unit level. Specific types examined include Susquehanna, Perkiomen, Lehigh/Koens-Crispin, Savannah River Wide Blade, Cattle Run, Bare Island, Poplar Island, Lamoka, and Slade.

Susquehanna point occurrence is uneven across the study area (Figure 20). Geographically disparate peak frequencies are noted in the Anacostia Lower, Rappahannock Falls and Lower Bay West Shore units. A total of eight units recorded no Susquehanna points, with these located in the far north, central and southwest portion of the study area.

Perkiomen points show a broad, albeit thin distribution across the northern and central portions of the Virginia Coastal Plain (Figure 21). Most SI Index values center between 1.1 and 2.2 with slightly higher counts along the Lower Chickahominy. Peak relative frequency occurs in the far southeast with Perkiomen points accounting for over one quarter of all Late Archaic points along the mid-section of the Suffolk Scarp.



Study Unit Name	Late Archaic SII
Anacostia Upper/Fall Line	32.5
Anacostia Lower	48.1
Potomac Falls	46.8
Potomac Freshwater Tidal	46.1
Potomac Lower Tidal/Bay	46.5
Rappahannock Fall Line	26.2
Rappahannock Fresh Tidal	35.2
Rappahannock Lower Tidal/Bay	35.3
York Upper (Pamunkey)	35.2
Chickahominy Upper	41.2
Chickahominy Lower	51.1
Peninsula Interior	36.1
James Fall Line	39.7
James Fresh Tidal	58.4
James Lower Tidal/Bay	46.1
Appomattox Tidal	70.8
Blackwater Mid-Drainage	37.4
Nottoway Fall Line	31.8
Meherrin Fall Line	34.1
Meherrin-Roanoke Interfluvial	15.1
Nansemond	37.1
Suffolk Scarp North	19.7
Suffolk Scarp Mid	34.1
Lower Bay West Shore	33.5
North Landing	52.1
Lynnhaven/Cape Henry Interior	50.1
Eastern Shore Lower	25.2
Eastern Shore Upper	48.1

Figure 15. Late Archaic SI Index by Study Unit.

Lehigh/Koens-Crispin points also show a highly uneven distribution (Figure 22). Of note is that the type is scarce or absent in most upriver and Fall Line areas. An exception is the Potomac Freshwater Tidal Study Unit. By contrast, the type exhibits highest frequencies in proximity to the Chesapeake Bay to include the mouth of the Rappahannock, Lower Bay Western Shore, the Eastern Shore and the greater Cape Henry areas. This suggests an estuarine focus for these groups.

Savannah River Wide Blade is by far the most numerous point type in the study (Figure 23). However, its occurrence is highly uneven. In the north, Savannah River Wide Blade is essentially absent along the Anacostia but occurs with significant frequency in the nearby Potomac Falls setting. The type is also uncommon in the Rappahannock drainage. Savannah River Wide Blade is fully dominant along the mid-reaches of the James to include the embayed portions of the Appomattox and Chickahominy and adjoining areas of the Virginia Peninsula. Further east, frequencies fall sharply along the Dismal Swamp margins and across the greater Cape Henry area. Savannah River Wide Blade is dominant across Meherrin-Roanoke Interfluvial uplands, while the interior Carolina Sound drainage areas exhibit relatively consistent, mid-range SI values.

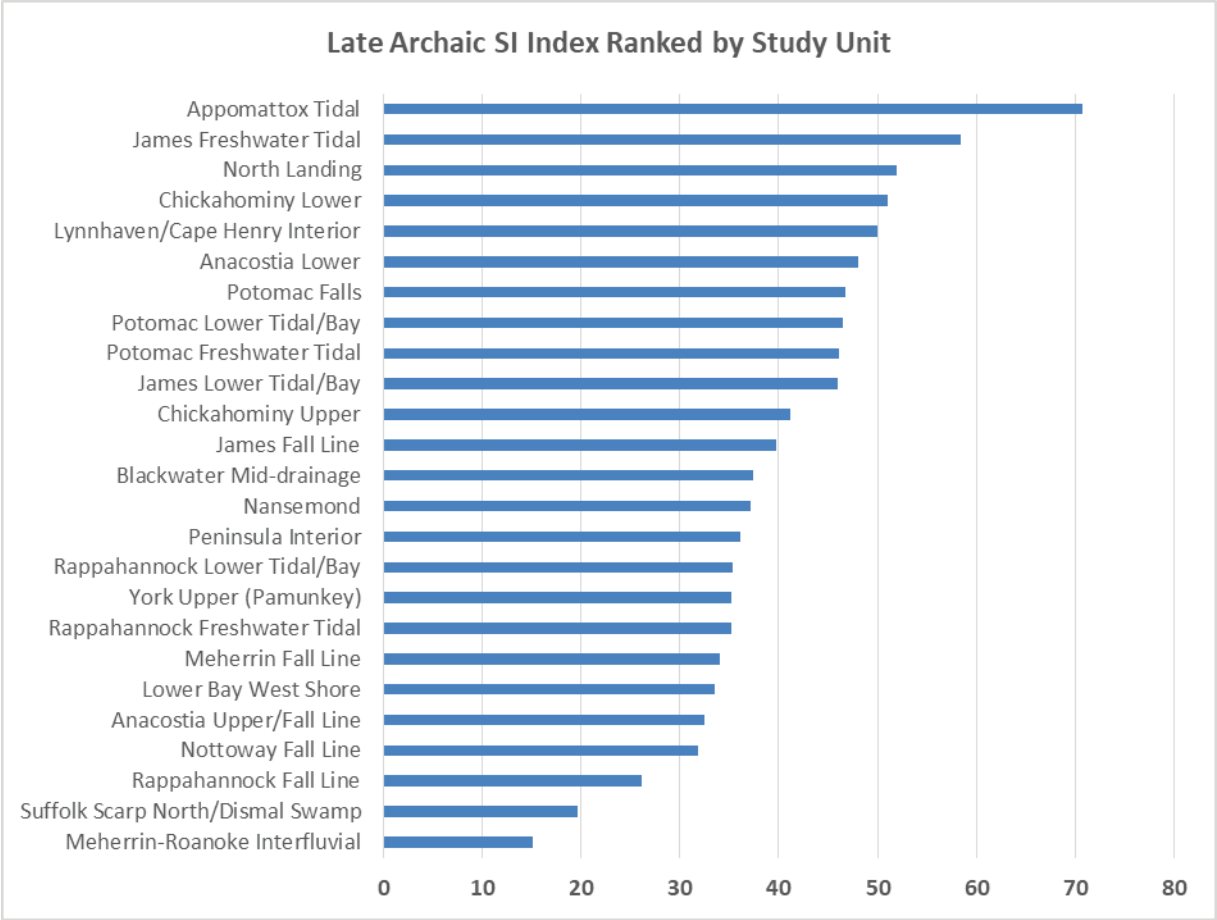


Figure 16. Late Archaic SI Index Ranked by Study Unit.

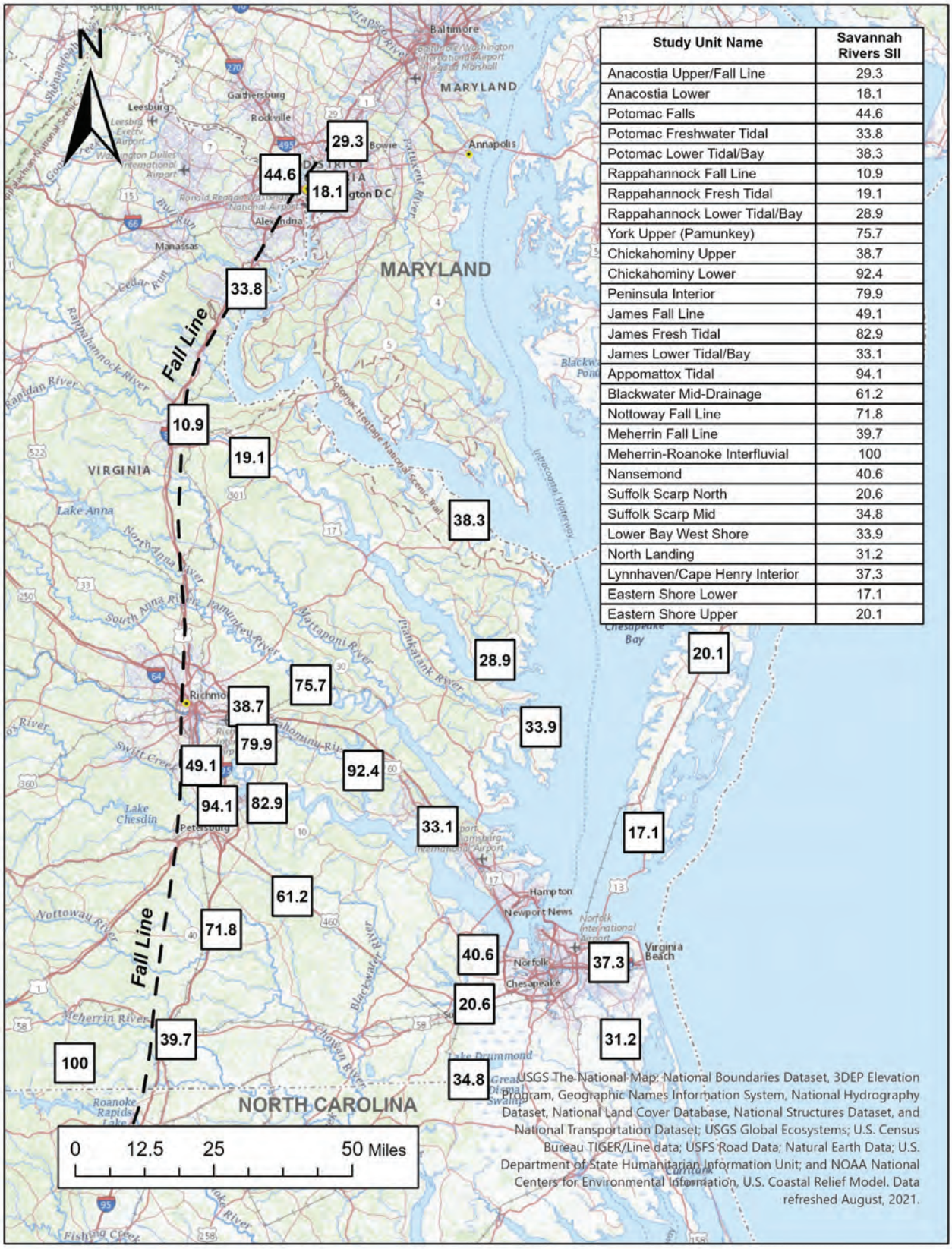
Cattle Run point (Figure 24) occurrence is geographically limited. The type is essentially absent from the Chickahominy north. It is common only near the Falls of the James and the far southeast, with an anomalous peak noted along the Nansemond River. A secondary concentration is recorded in the Lower Bay Western Shore Study Unit.

Bare Island point (Figure 25) distributions are also highly uneven. Significant variations in occurrence are noted both within and across watersheds/river reaches. Peak occurrences of Bare Island points are noted for the geographically disparate Lower Anacostia, Potomac Freshwater Tidal, Rappahannock Fall Line, Blackwater River, as well as the Cape Henry and Lower Eastern Shore units. The type is absent or nearly absent from the greater James River units where Savannah River is dominant.

Poplar Island points exhibit a somewhat more even occurrence (Figure 26). Of note is that there are significant variations in Poplar Island point numbers within individual river reaches. Areas of peak occurrence include the mouth of the Potomac, the Suffolk Scarp/Dismal Swamp environs, and the Lower Eastern Shore. An anomalous concentration of Poplar Island points was recorded on Jamestown Island at the site of the original English settlement (Site 44JC0001).

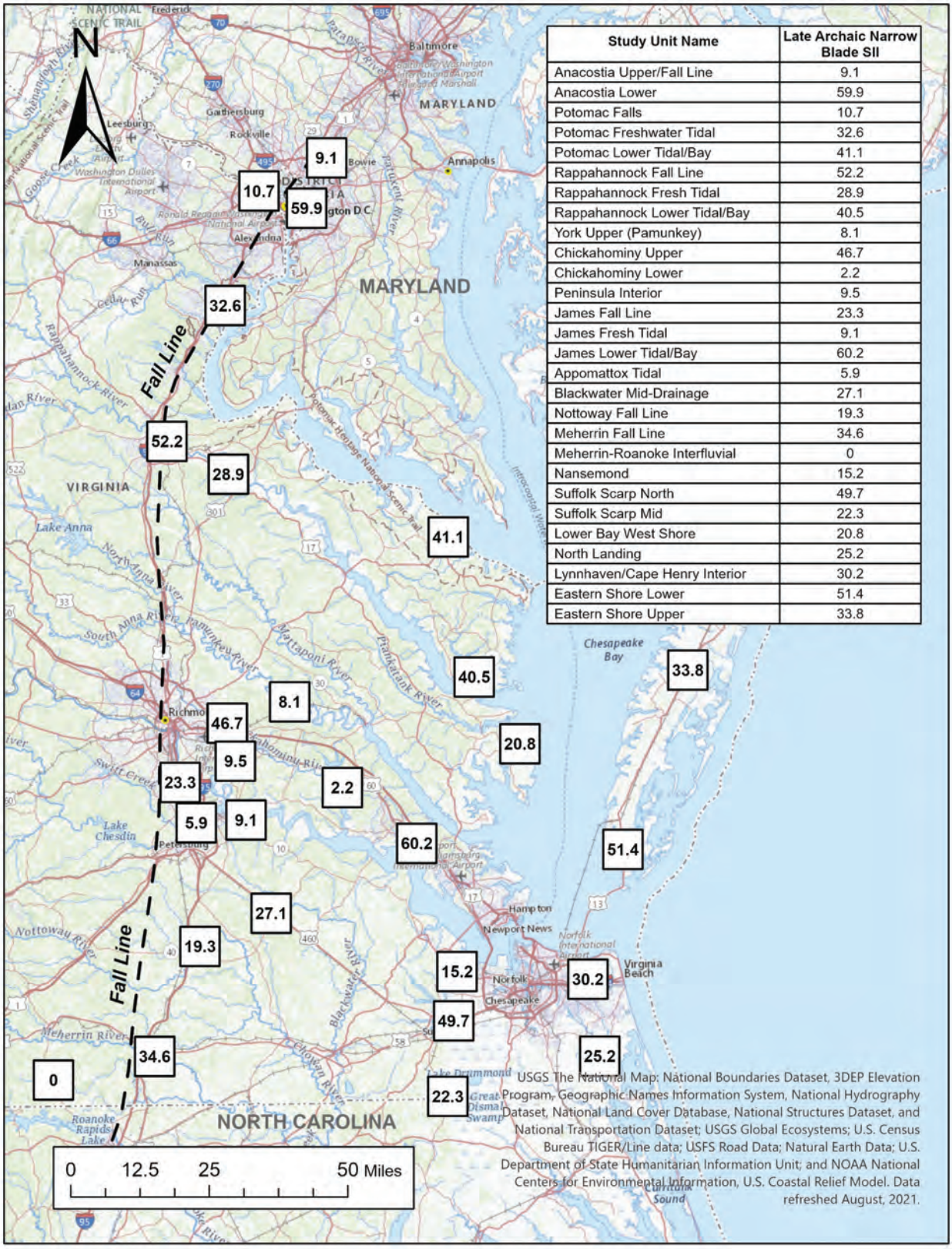
Lamoka point distributions (Figure 27) are difficult to characterize. Relative frequencies show lesser variation than the other Late Archaic Narrow-Blade types. Peak occurrences are modest and do not seem to favor any specific environmental setting or geographic location. While overall distributions suggest a southern focus, the type is uncommon in the greater Cape Henry and Eastern Shore areas.

The Slade Point exhibits a unique pattern of occurrence (Figure 28). The type is essentially absent from the northern watersheds. It is also absent from the lower reaches of the major drainages and the greater Chesapeake Bay. A pronounced favoring of the Fall Line areas is evident.



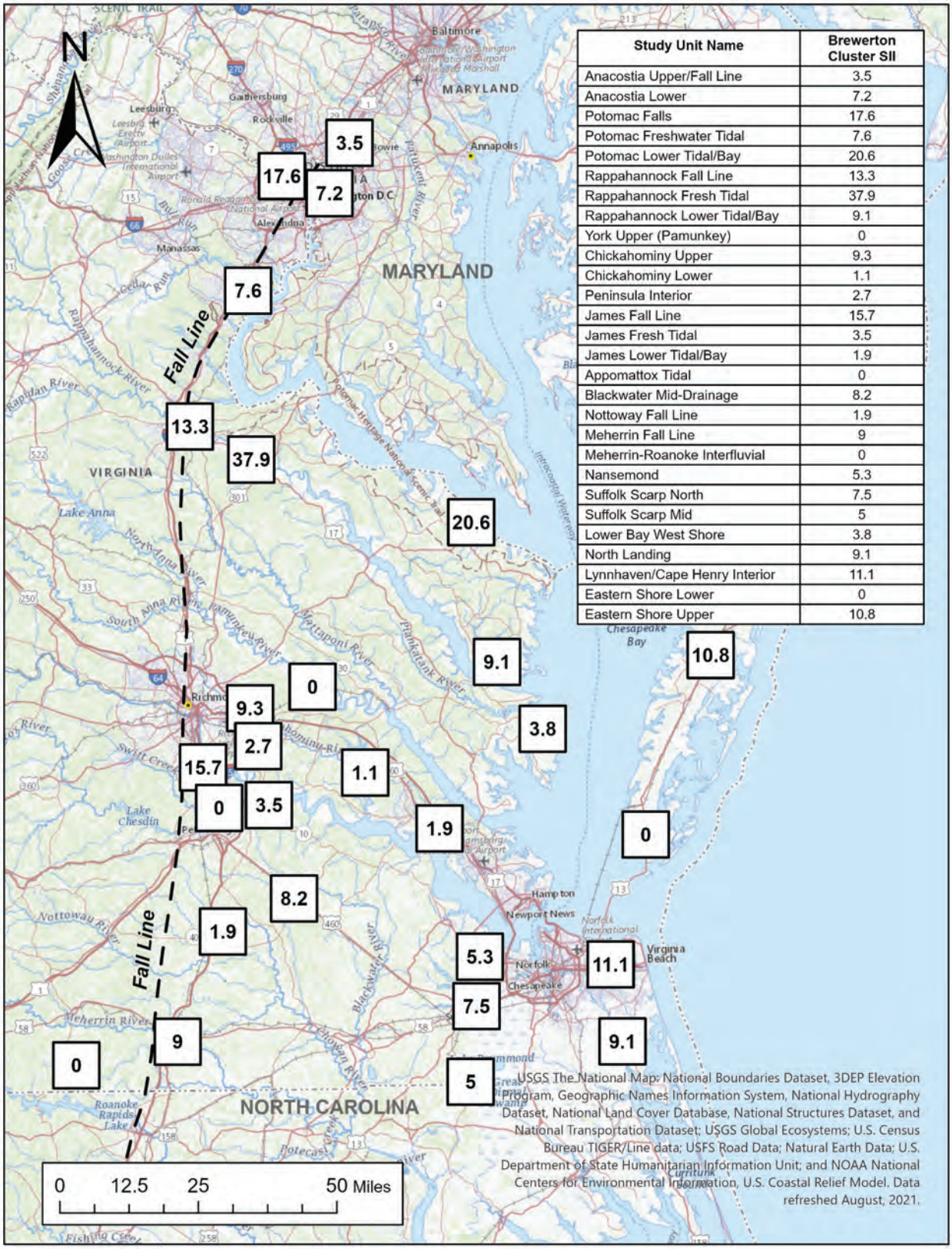
Study Unit Name	Savannah Rivers SII
Anacostia Upper/Fall Line	29.3
Anacostia Lower	18.1
Potomac Falls	44.6
Potomac Freshwater Tidal	33.8
Potomac Lower Tidal/Bay	38.3
Rappahannock Fall Line	10.9
Rappahannock Fresh Tidal	19.1
Rappahannock Lower Tidal/Bay	28.9
York Upper (Pamunkey)	75.7
Chickahominy Upper	38.7
Chickahominy Lower	92.4
Peninsula Interior	79.9
James Fall Line	49.1
James Fresh Tidal	82.9
James Lower Tidal/Bay	33.1
Appomattox Tidal	94.1
Blackwater Mid-Drainage	61.2
Nottoway Fall Line	71.8
Meherrin Fall Line	39.7
Meherrin-Roanoke Interfluvial	100
Nansemond	40.6
Suffolk Scarp North	20.6
Suffolk Scarp Mid	34.8
Lower Bay West Shore	33.9
North Landing	31.2
Lynnhaven/Cape Henry Interior	37.3
Eastern Shore Lower	17.1
Eastern Shore Upper	20.1

Figure 17. Savannah River Group SI Index by Study Unit.



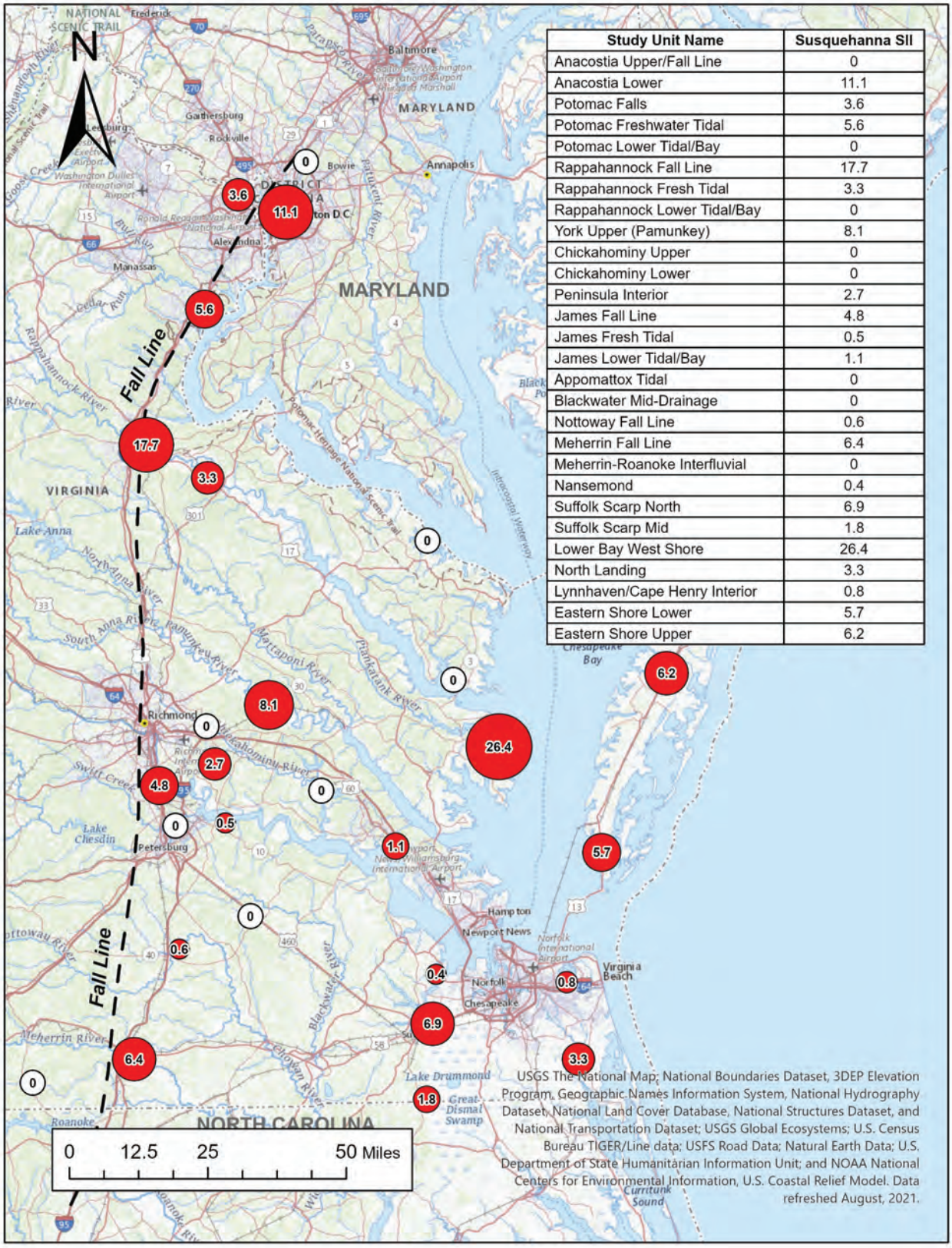
Study Unit Name	Late Archaic Narrow Blade SII
Anacostia Upper/Fall Line	9.1
Anacostia Lower	59.9
Potomac Falls	10.7
Potomac Freshwater Tidal	32.6
Potomac Lower Tidal/Bay	41.1
Rappahannock Fall Line	52.2
Rappahannock Fresh Tidal	28.9
Rappahannock Lower Tidal/Bay	40.5
York Upper (Pamunkey)	8.1
Chickahominy Upper	46.7
Chickahominy Lower	2.2
Peninsula Interior	9.5
James Fall Line	23.3
James Fresh Tidal	9.1
James Lower Tidal/Bay	60.2
Appomattox Tidal	5.9
Blackwater Mid-Drainage	27.1
Nottoway Fall Line	19.3
Meherrin Fall Line	34.6
Meherrin-Roanoke Interfluvial	0
Nansemond	15.2
Suffolk Scarp North	49.7
Suffolk Scarp Mid	22.3
Lower Bay West Shore	20.8
North Landing	25.2
Lynnhaven/Cape Henry Interior	30.2
Eastern Shore Lower	51.4
Eastern Shore Upper	33.8

Figure 18. Late Archaic Narrow Blade SI Index by Study Unit.



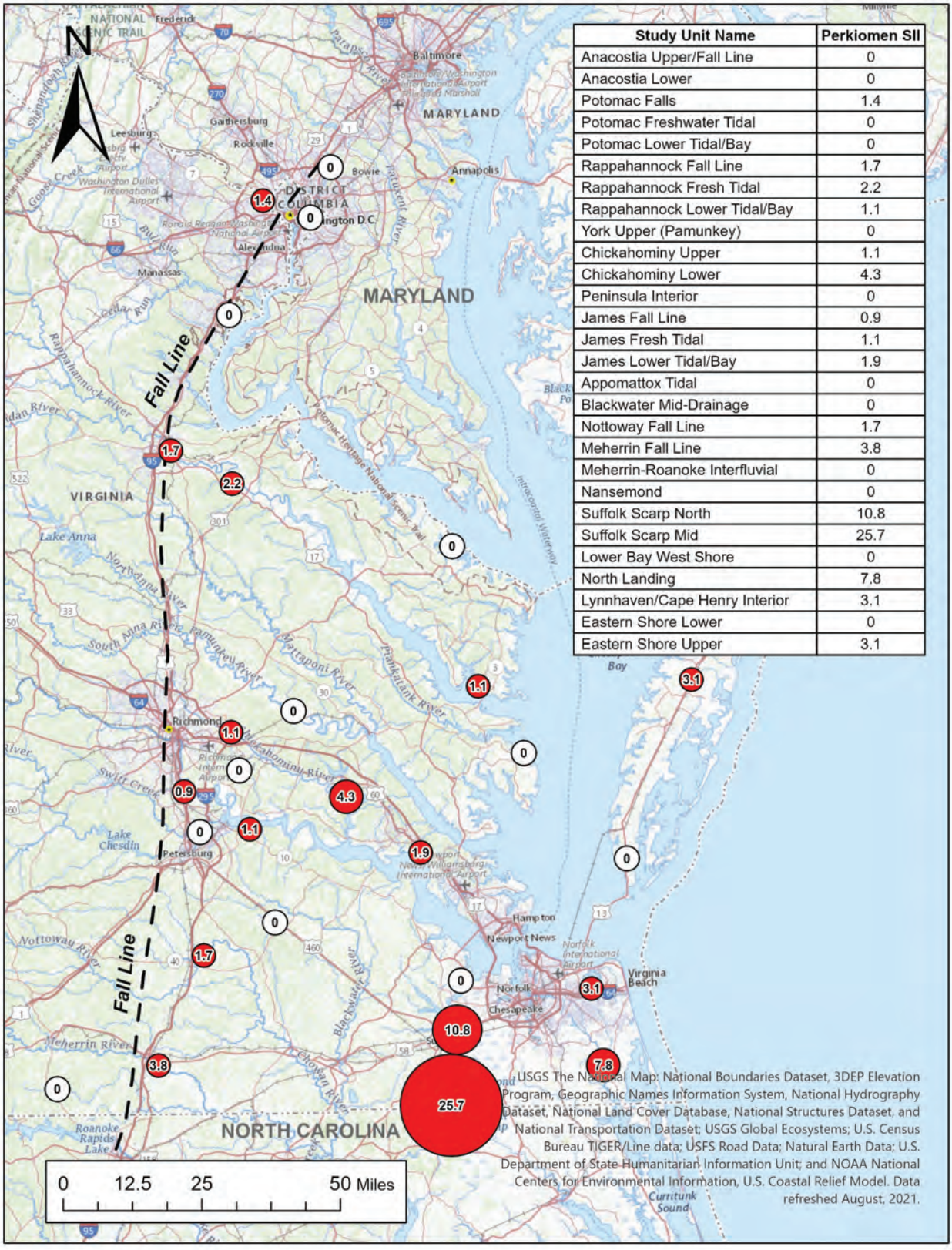
Study Unit Name	Brewerton Cluster SII
Anacostia Upper/Fall Line	3.5
Anacostia Lower	7.2
Potomac Falls	17.6
Potomac Freshwater Tidal	7.6
Potomac Lower Tidal/Bay	20.6
Rappahannock Fall Line	13.3
Rappahannock Fresh Tidal	37.9
Rappahannock Lower Tidal/Bay	9.1
York Upper (Pamunkey)	0
Chickahominy Upper	9.3
Chickahominy Lower	1.1
Peninsula Interior	2.7
James Fall Line	15.7
James Fresh Tidal	3.5
James Lower Tidal/Bay	1.9
Appomattox Tidal	0
Blackwater Mid-Drainage	8.2
Nottoway Fall Line	1.9
Meherrin Fall Line	9
Meherrin-Roanoke Interfluvial	0
Nansemond	5.3
Suffolk Scarp North	7.5
Suffolk Scarp Mid	5
Lower Bay West Shore	3.8
North Landing	9.1
Lynnhaven/Cape Henry Interior	11.1
Eastern Shore Lower	0
Eastern Shore Upper	10.8

Figure 19. Brewerton Cluster SI Index by Study Unit.



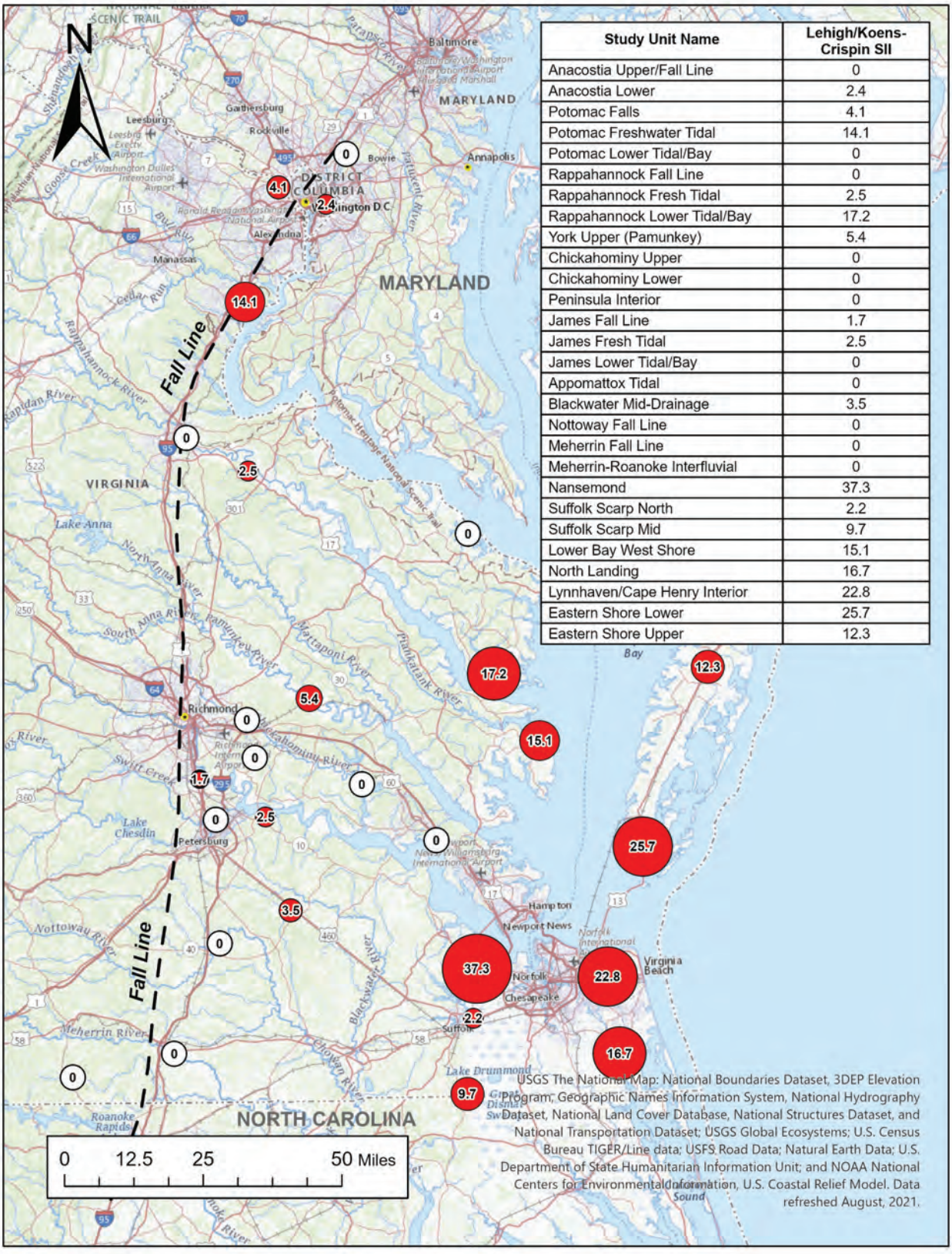
Study Unit Name	Susquehanna SII
Anacostia Upper/Fall Line	0
Anacostia Lower	11.1
Potomac Falls	3.6
Potomac Freshwater Tidal	5.6
Potomac Lower Tidal/Bay	0
Rappahannock Fall Line	17.7
Rappahannock Fresh Tidal	3.3
Rappahannock Lower Tidal/Bay	0
York Upper (Pamunkey)	8.1
Chickahominy Upper	0
Chickahominy Lower	0
Peninsula Interior	2.7
James Fall Line	4.8
James Fresh Tidal	0.5
James Lower Tidal/Bay	1.1
Appomattox Tidal	0
Blackwater Mid-Drainage	0
Nottoway Fall Line	0.6
Meherrin Fall Line	6.4
Meherrin-Roanoke Interfluvial	0
Nansemond	0.4
Suffolk Scarp North	6.9
Suffolk Scarp Mid	1.8
Lower Bay West Shore	26.4
North Landing	3.3
Lynnhaven/Cape Henry Interior	0.8
Eastern Shore Lower	5.7
Eastern Shore Upper	6.2

Figure 20. Susquehanna SI Index by Study Unit.



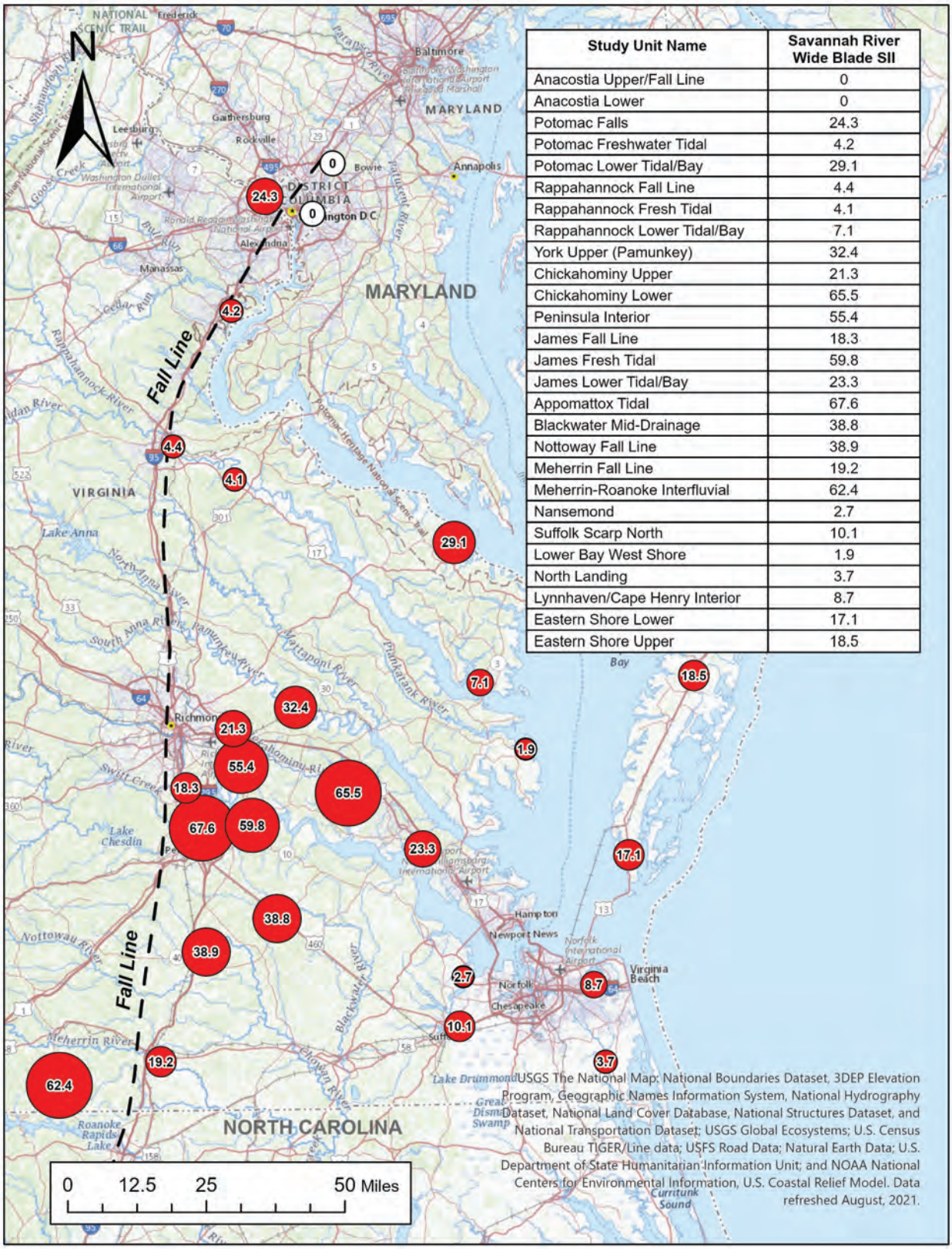
Study Unit Name	Perkiomen SII
Anacostia Upper/Fall Line	0
Anacostia Lower	0
Potomac Falls	1.4
Potomac Freshwater Tidal	0
Potomac Lower Tidal/Bay	0
Rappahannock Fall Line	1.7
Rappahannock Fresh Tidal	2.2
Rappahannock Lower Tidal/Bay	1.1
York Upper (Pamunkey)	0
Chickahominy Upper	1.1
Chickahominy Lower	4.3
Peninsula Interior	0
James Fall Line	0.9
James Fresh Tidal	1.1
James Lower Tidal/Bay	1.9
Appomattox Tidal	0
Blackwater Mid-Drainage	0
Nottoway Fall Line	1.7
Meherrin Fall Line	3.8
Meherrin-Roanoke Interfluvial	0
Nansemond	0
Suffolk Scarp North	10.8
Suffolk Scarp Mid	25.7
Lower Bay West Shore	0
North Landing	7.8
Lynnhaven/Cape Henry Interior	3.1
Eastern Shore Lower	0
Eastern Shore Upper	3.1

Figure 21. Perkiomen SI Index by Study Unit.



Study Unit Name	Lehigh/Koens-Crispin SII
Anacostia Upper/Fall Line	0
Anacostia Lower	2.4
Potomac Falls	4.1
Potomac Freshwater Tidal	14.1
Potomac Lower Tidal/Bay	0
Rappahannock Fall Line	0
Rappahannock Fresh Tidal	2.5
Rappahannock Lower Tidal/Bay	17.2
York Upper (Pamunkey)	5.4
Chickahominy Upper	0
Chickahominy Lower	0
Peninsula Interior	0
James Fall Line	1.7
James Fresh Tidal	2.5
James Lower Tidal/Bay	0
Appomattox Tidal	0
Blackwater Mid-Drainage	3.5
Nottoway Fall Line	0
Meherrin Fall Line	0
Meherrin-Roanoke Interfluvial	0
Nansemond	37.3
Suffolk Scarp North	2.2
Suffolk Scarp Mid	9.7
Lower Bay West Shore	15.1
North Landing	16.7
Lynnhaven/Cape Henry Interior	22.8
Eastern Shore Lower	25.7
Eastern Shore Upper	12.3

Figure 22. Lehigh/Koens-Crispin SI Index by Study Unit.



Study Unit Name	Savannah River Wide Blade SII
Anacostia Upper/Fall Line	0
Anacostia Lower	0
Potomac Falls	24.3
Potomac Freshwater Tidal	4.2
Potomac Lower Tidal/Bay	29.1
Rappahannock Fall Line	4.4
Rappahannock Fresh Tidal	4.1
Rappahannock Lower Tidal/Bay	7.1
York Upper (Pamunkey)	32.4
Chickahominy Upper	21.3
Chickahominy Lower	65.5
Peninsula Interior	55.4
James Fall Line	18.3
James Fresh Tidal	59.8
James Lower Tidal/Bay	23.3
Appomattox Tidal	67.6
Blackwater Mid-Drainage	38.8
Nottoway Fall Line	38.9
Meherrin Fall Line	19.2
Meherrin-Roanoke Interfluvial	62.4
Nansemond	2.7
Suffolk Scarp North	10.1
Lower Bay West Shore	1.9
North Landing	3.7
Lynnhaven/Cape Henry Interior	8.7
Eastern Shore Lower	17.1
Eastern Shore Upper	18.5

Figure 23. Savannah River Wide SI Index Map by Study Unit.

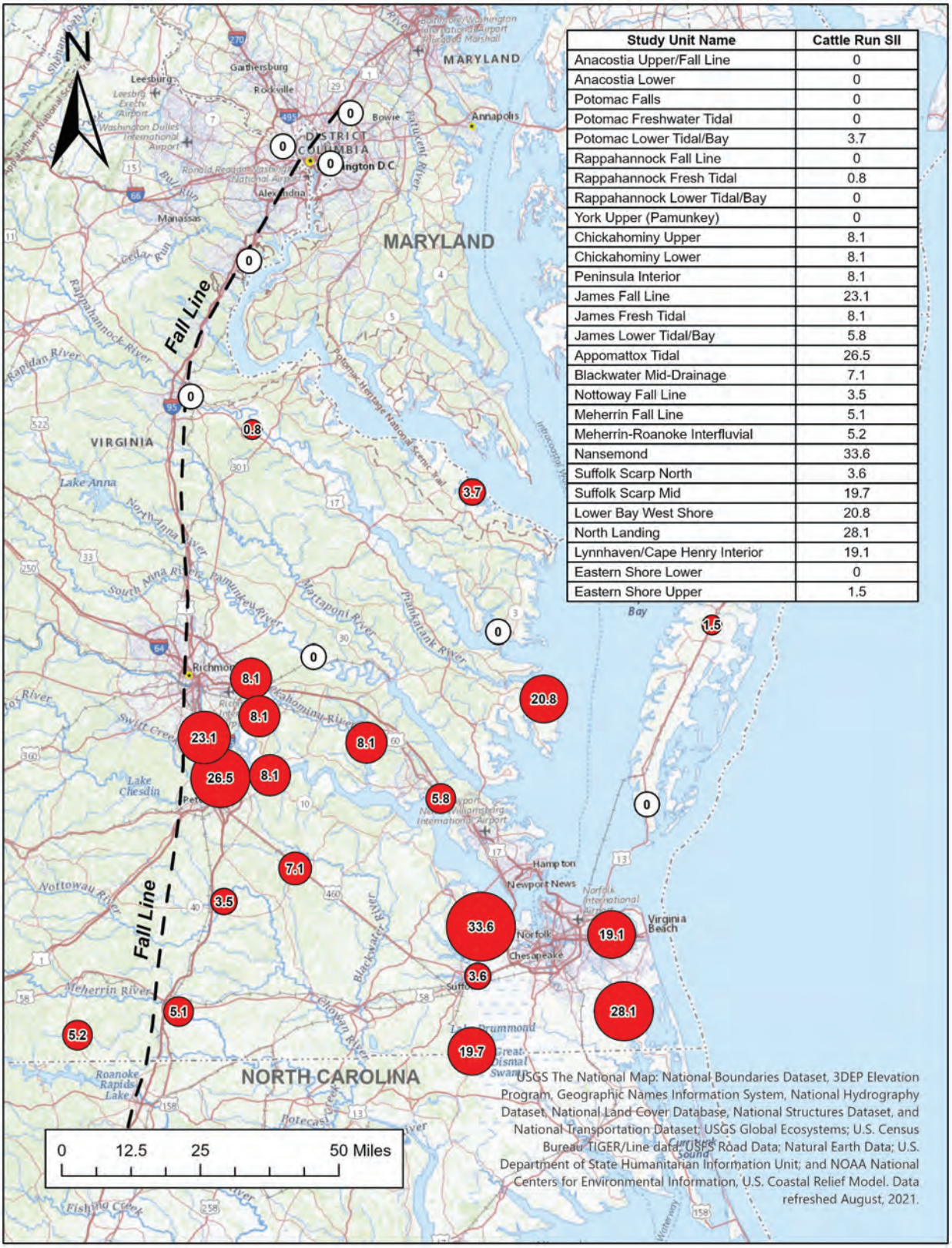
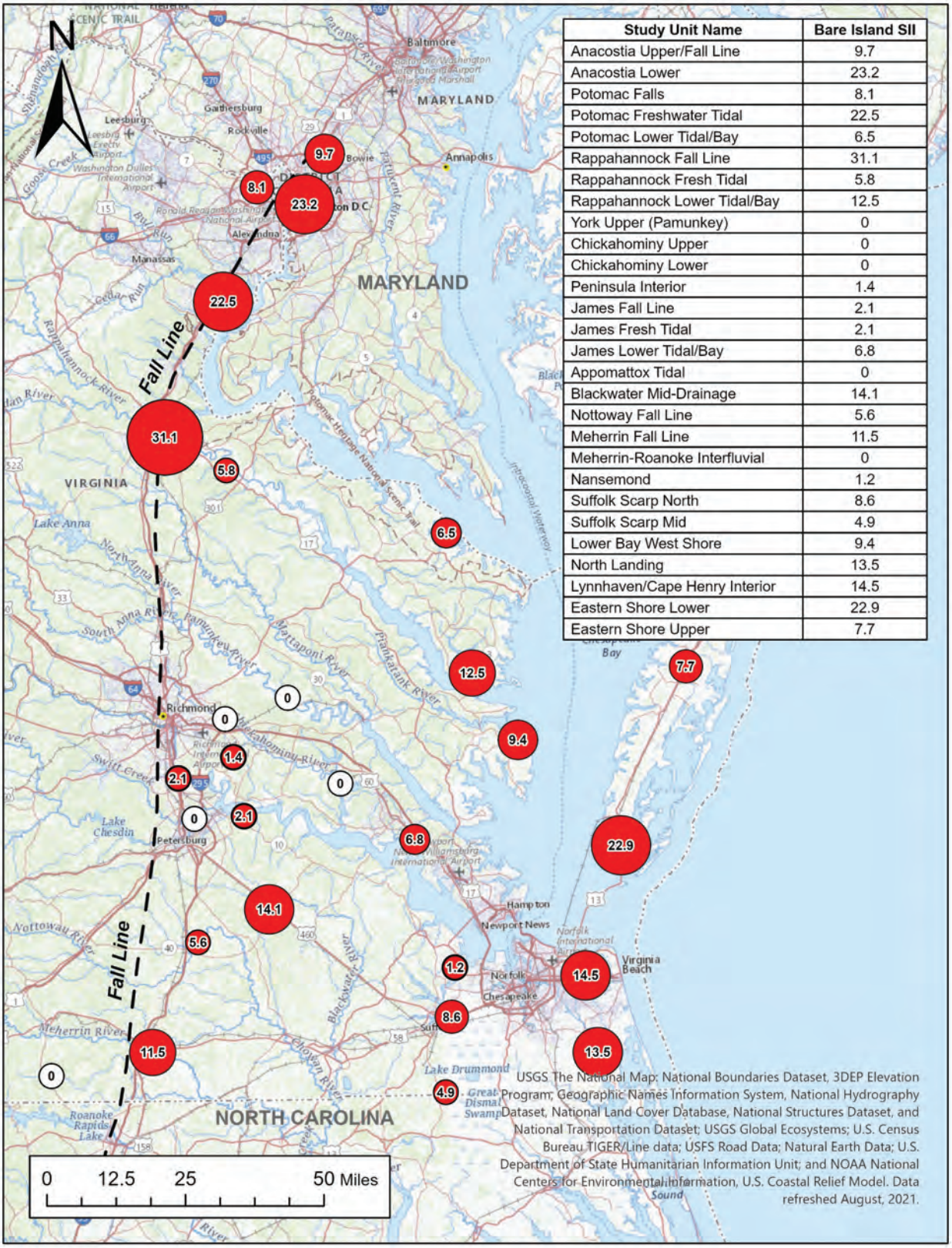
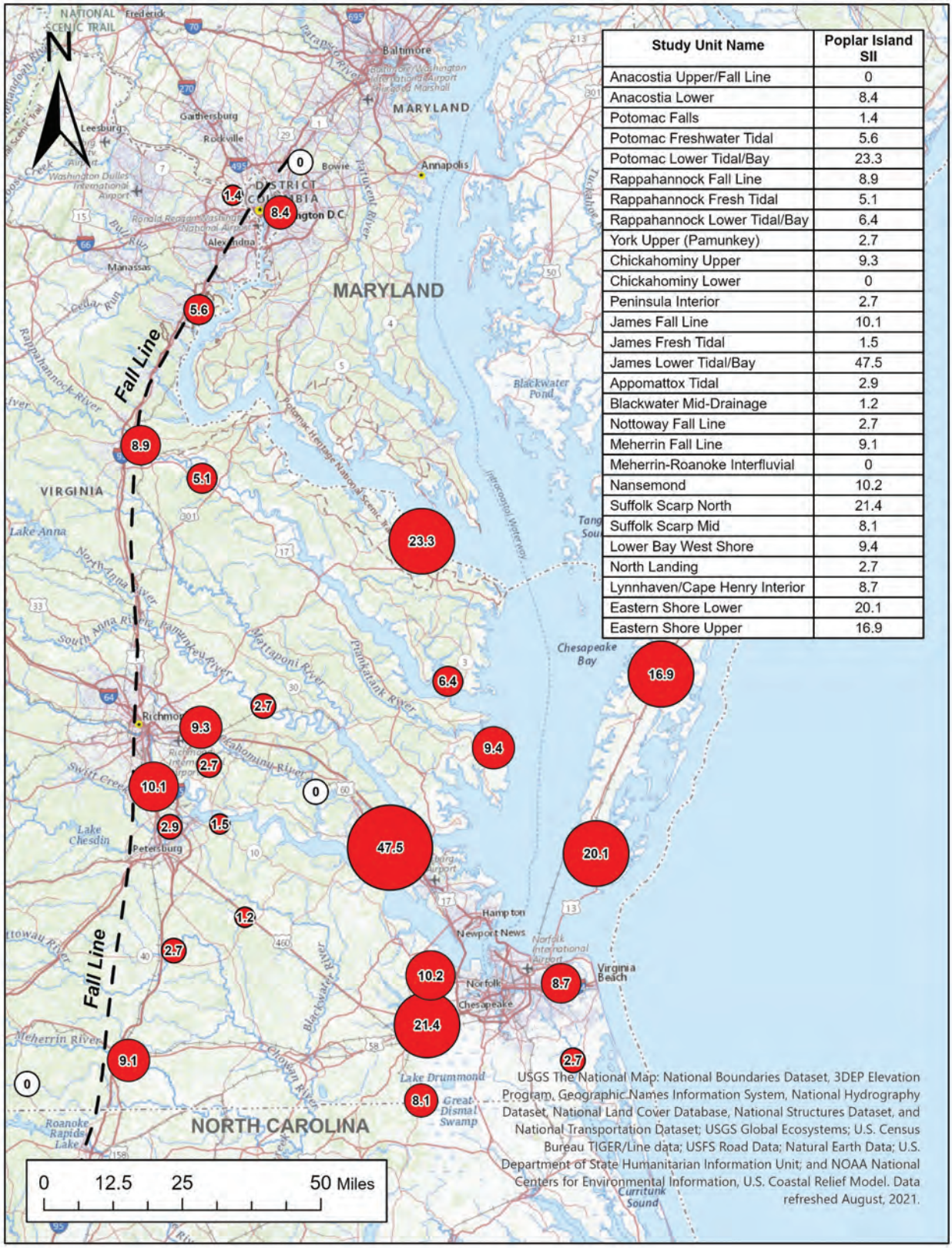


Figure 24. Cattle Run SI Index Map by Study Unit.



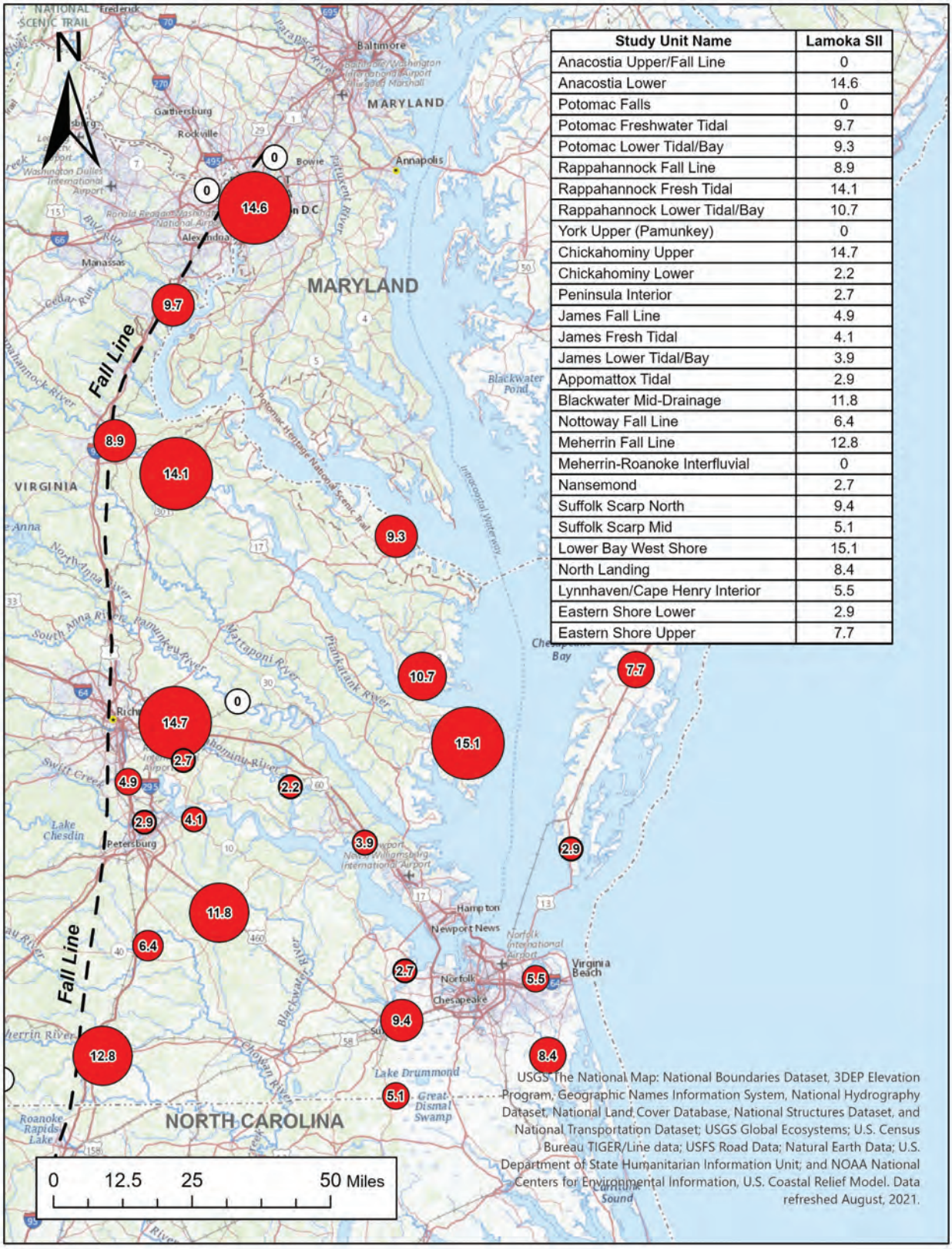
Study Unit Name	Bare Island SII
Anacostia Upper/Fall Line	9.7
Anacostia Lower	23.2
Potomac Falls	8.1
Potomac Freshwater Tidal	22.5
Potomac Lower Tidal/Bay	6.5
Rappahannock Fall Line	31.1
Rappahannock Fresh Tidal	5.8
Rappahannock Lower Tidal/Bay	12.5
York Upper (Pamunkey)	0
Chickahominy Upper	0
Chickahominy Lower	0
Peninsula Interior	1.4
James Fall Line	2.1
James Fresh Tidal	2.1
James Lower Tidal/Bay	6.8
Appomattox Tidal	0
Blackwater Mid-Drainage	14.1
Nottoway Fall Line	5.6
Meherrin Fall Line	11.5
Meherrin-Roanoke Interfluvial	0
Nansemond	1.2
Suffolk Scarp North	8.6
Suffolk Scarp Mid	4.9
Lower Bay West Shore	9.4
North Landing	13.5
Lynnhaven/Cape Henry Interior	14.5
Eastern Shore Lower	22.9
Eastern Shore Upper	7.7

Figure 25. Bare Island SI Index Map by Study Unit.



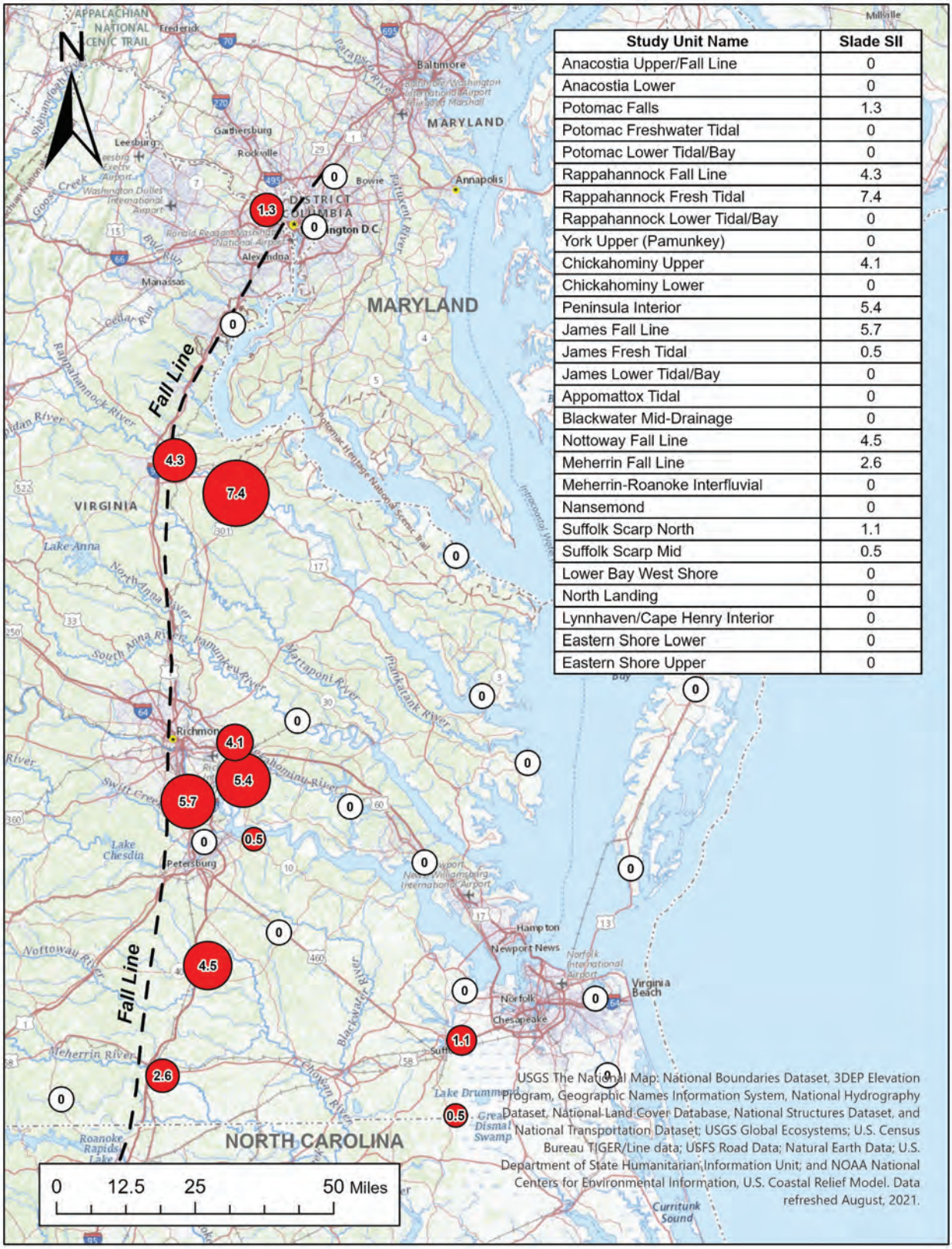
Study Unit Name	Poplar Island SII
Anacostia Upper/Fall Line	0
Anacostia Lower	8.4
Potomac Falls	1.4
Potomac Freshwater Tidal	5.6
Potomac Lower Tidal/Bay	23.3
Rappahannock Fall Line	8.9
Rappahannock Fresh Tidal	5.1
Rappahannock Lower Tidal/Bay	6.4
York Upper (Pamunkey)	2.7
Chickahominy Upper	9.3
Chickahominy Lower	0
Peninsula Interior	2.7
James Fall Line	10.1
James Fresh Tidal	1.5
James Lower Tidal/Bay	47.5
Appomattox Tidal	2.9
Blackwater Mid-Drainage	1.2
Nottoway Fall Line	2.7
Meherrin Fall Line	9.1
Meherrin-Roanoke Interfluvial	0
Nansemond	10.2
Suffolk Scarp North	21.4
Suffolk Scarp Mid	8.1
Lower Bay West Shore	9.4
North Landing	2.7
Lynnhaven/Cape Henry Interior	8.7
Eastern Shore Lower	20.1
Eastern Shore Upper	16.9

Figure 26. Poplar Island SI Index Map by Study Unit.



Study Unit Name	Lamoka SII
Anacostia Upper/Fall Line	0
Anacostia Lower	14.6
Potomac Falls	0
Potomac Freshwater Tidal	9.7
Potomac Lower Tidal/Bay	9.3
Rappahannock Fall Line	8.9
Rappahannock Fresh Tidal	14.1
Rappahannock Lower Tidal/Bay	10.7
York Upper (Pamunkey)	0
Chickahominy Upper	14.7
Chickahominy Lower	2.2
Peninsula Interior	2.7
James Fall Line	4.9
James Fresh Tidal	4.1
James Lower Tidal/Bay	3.9
Appomattox Tidal	2.9
Blackwater Mid-Drainage	11.8
Nottoway Fall Line	6.4
Meherrin Fall Line	12.8
Meherrin-Roanoke Interfluvial	0
Nansemond	2.7
Suffolk Scarp North	9.4
Suffolk Scarp Mid	5.1
Lower Bay West Shore	15.1
North Landing	8.4
Lynnhaven/Cape Henry Interior	5.5
Eastern Shore Lower	2.9
Eastern Shore Upper	7.7

Figure 27. Lamoka SI Index Map by Study Unit.



Study Unit Name	Slade SII
Anacostia Upper/Fall Line	0
Anacostia Lower	0
Potomac Falls	1.3
Potomac Freshwater Tidal	0
Potomac Lower Tidal/Bay	0
Rappahannock Fall Line	4.3
Rappahannock Fresh Tidal	7.4
Rappahannock Lower Tidal/Bay	0
York Upper (Pamunkey)	0
Chickahominy Upper	4.1
Chickahominy Lower	0
Peninsula Interior	5.4
James Fall Line	5.7
James Fresh Tidal	0.5
James Lower Tidal/Bay	0
Appomattox Tidal	0
Blackwater Mid-Drainage	0
Nottoway Fall Line	4.5
Meherrin Fall Line	2.6
Meherrin-Roanoke Interfluvial	0
Nansemond	0
Suffolk Scarp North	1.1
Suffolk Scarp Mid	0.5
Lower Bay West Shore	0
North Landing	0
Lynnhaven/Cape Henry Interior	0
Eastern Shore Lower	0
Eastern Shore Upper	0

Figure 28. Slade SI Index Map by Study Unit.

Relative Frequencies of Select Point Types by Environmental Setting

During analysis it was noted that certain point types seemed to favor certain environmental settings. Specifically, it was noted that Susquehanna points favored larger river settings while Perkiomen points are more prevalent along smaller drainages. Figure 29 portrays proportional occurrence of the two Transitional Broadspear types by setting. The Major Rivers/Estuaries setting is defined as the Potomac, Rappahannock, James, and Chesapeake Bay study units, while the Secondary setting consists of the remaining units centered on smaller drainages and interior locations.

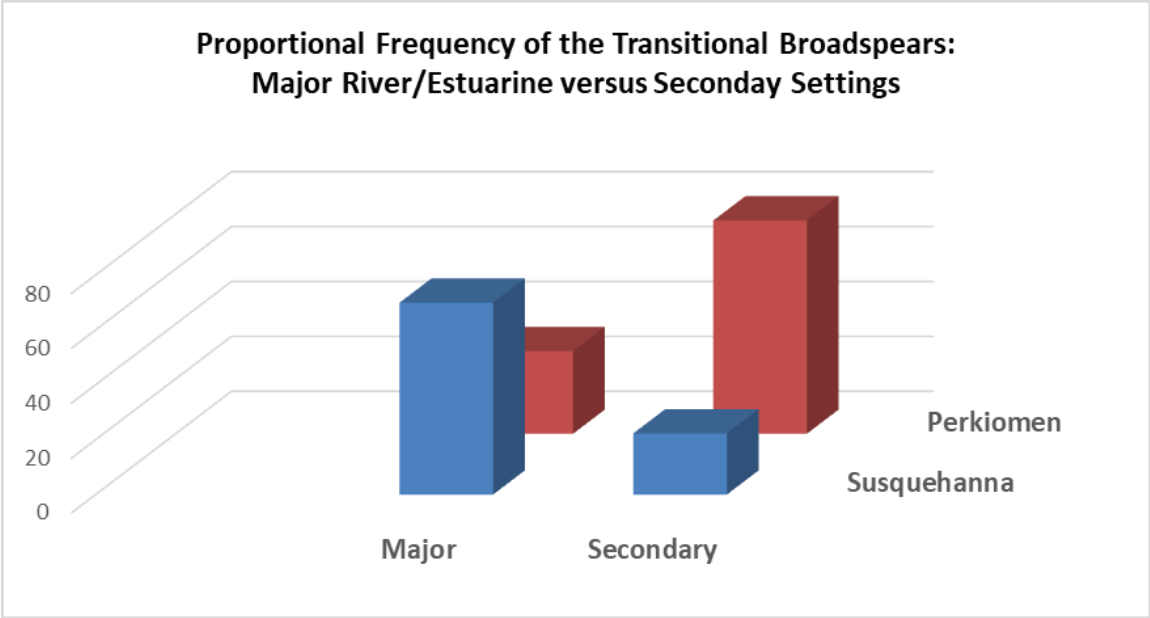


Figure 29. Proportional Frequencies of the Transitional Broadspears in Major River/Estuary versus Secondary River Settings.

The paired proportional frequencies in Figure 29 clearly capture type specific differences whereby Susquehanna point groups favored larger river settings while Perkiomen point settlement was focused on smaller drainages and inland locations.

Savannah River points and Late Archaic Narrow Blade occurrence also exhibited environmentally driven settlement preferences in both inter-study unit and intra-study unit context. In the greater Fall Line area around Washington D.C., Savannah River points were dominant on the Potomac Gorge sites while Late Archaic Narrow Blade types were prevalent along the nearby Lower Anacostia (see Figures 17 and Figure 18). Significant intra-unit differences were noted along the lower Potomac (Figure 30). The Thicket Point Bay shoreline collection included 84 Late Archaic points (Egloff and McAvoy 1979). Savannah River point occurrence was relatively low in comparison to the other Potomac units, and the Virginia Coastal Plain as whole. By contrast Late Archaic Narrow Blade types (Bare Island, Poplar Island and Lamoka points) were prevalent, constituting half of all Late Archaic points. The well-known Plum Nelly (Potter 1982) and White Oak (Waselkov 1982) sites were located within sheltered tidal coves and contained shell midden deposits. In contrast to open shoreline settings, Late Archaic points recovered on these two sites consisted almost entirely of Savannah River points.

Also noted in the Thicket Bay shoreline collection were 17 Brewerton Corner Notched specimens. At 20.2% of all Late Archaic points, this represents the second highest relative frequency of Brewerton points in any individual site location.

Summary of Findings

Analysis of Late Archaic settlement in general confirmed some previously recognized trends but also produced unexpected results. As anticipated, Late Archaic settlement was shown to favor major river systems, particularly the Potomac and James. However, the most intensive settlement was recorded not around the

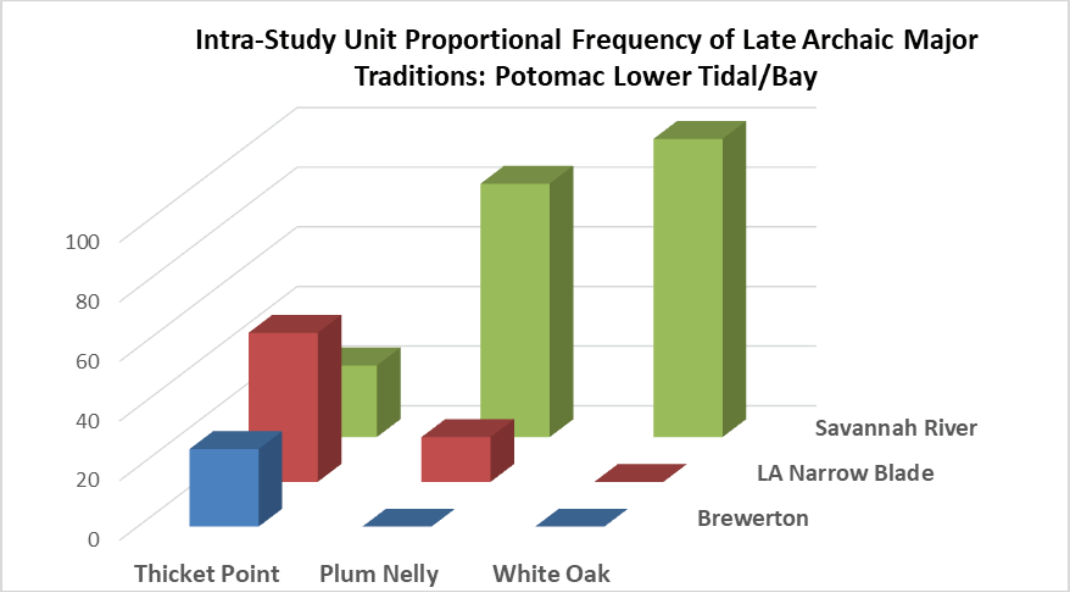


Figure 30. Intra-Study Unit Proportional Frequency of Late Archaic Major Traditions Potomac Lower Tidal/ Bay.

major river Falls but along their freshwater tidal reaches downstream. Another unexpected finding was comparatively moderate SI Index values for the Suffolk Scarp. While this location clearly represents a hot spot for prehistoric settlement, its use does not seem to have been specific to the Late Archaic.

Late Archaic Settlement Intensity

Overall, Late Archaic settlement intensity can be summarized as follows:

- Highest Late Archaic SI values in the freshwater tidal reaches below the Falls
- Fall Line Late Archaic SI values closely follow the study area mean
- Potomac is an exception with consistent, elevated values throughout
- Most intensive Late Archaic settlement along Lower James and its tidal tributaries
- Least intensive relative settlement on the Suffolk Scarp and inter-fluvial uplands
- Significant variation in Late Archaic settlement intensity across environmentally similar settings in the Lower Chesapeake Bay and Eastern Shore regions

Settlement Intensity by Select Major Traditions

Late Archaic settlement by Major Tradition also showed considerable variation. Observed aspects and trends by Major Tradition are summarized as follows:

Savannah River Group

- Dominant Late Archaic tradition with Global SI Index of 48.1
- Variable occurrence across study area
- Favoring of major river settings
- Most prevalent along James its main tidal tributaries
- Lowest occurrence on the Suffolk Scarp and Eastern Shore; Rappahannock Falls
- Notably low occurrence along Rappahannock in relation to Potomac and James drainages

Late Archaic Narrow Blade

- Second most prevalent tradition with Global SI Index of 28.3
- Widespread but uneven occurrence
- Fall Line preference on some rivers
- Strongly elevated occurrence along lower tidal reaches of some major drainages
- Extreme variation in occurrence within the Anacostia and Chickahominy reaches
- Strong variation between geographically proximate study units
- Elevated frequency on the Suffolk Scarp; North Landing River
- Very low occurrence along freshwater tidal James River and it embayed tributaries

Brewerton Cluster
- Relatively uncommon with a Global SI Index of 7.7
- Widespread but highly uneven occurrence
- No obvious orientation to particular physiographic setting or river reach
- Uncommon in Carolina Sounds drainage
- Anomalous concentration along freshwater tidal Rappahannock

Settlement Intensity by Individual Point Type

Susquehanna and Perkiomen Transitional Broadspears
- Susquehanna and Perkiomen exhibit near even total counts study area-wide
- Susquehanna favor major river/estuary settings
- Isolated area of elevated occurrence of Susquehanna along Lower Bay western shores
- Perkiomen more common on secondary drainages, interior settings
- Extreme elevated Perkiomen frequency along Suffolk Scarp

Lehigh-Koens/Crispin and Snook Kill Northeast Broadspears
- Lehigh/Koens-Crispin relatively limited in numbers but with wide spread occurrence
- Anomalous Lehigh/Koens-Crispin concentration along lower tidal Rappahannock
- Snook Kill rare; found only in Potomac Fall Line and along Lower Bay margins
- Strong negative correlation in Lehigh-Koens/Crispin occurrence with the morphologically similar Cattle Run type in Potomac, Rappahannock, James watersheds
- Strong positive correlation in Lehigh-Koens/Crispin and Cattle occurrence in Carolina Sounds drainage interior and far southeast

Savannah River Wide Blade, Savannah River Narrow Blade and Cattle Run
- Wide Blade far more common from Chickahominy south
- Wide Blade dominant from James across the Carolina Sounds drainage interior
- Wide Blade fully dominant in James drainage to include Appomattox and Lower Chickahominy
- Wide Blade frequency drops steeply along Lower Bay western shores and far southeast
- Wide Blade near absent in far southeast
- Narrow Blade more common from Rappahannock north
- Narrow Blade consistently low frequency in James through the Carolina Sounds rivers
- Narrow Blade declines along Lower Bay and Cape Henry; absent on Eastern Shore
- Cattle Run absent north of Chickahominy except minimal occurrence along lower tidal Potomac
- Cattle Run most prevalent along Lower Bay western shores, and far southeast
- Secondary peak along James mid-tidal

Bare Island, Poplar Island, Lamoka and Normanskill Late Archaic Narrow Blade
- Bare Island and Poplar Island moderately elevated frequencies along Lower Bay; Eastern Shore
- Bare Island anomalous peak frequency along Rappahannock Falls
- Poplar Island high relative frequency along James Falls
- Poplar Island anomalous peak on Jamestown Island at edge of Savannah River core
- Lamoka frequencies fall along Lower Bay; modest rise on Eastern Shore
- Lamoka elevated occurrence far southeast in North Landing drainage
- Normanskill peak relative frequency along Upper Chickahominy/Fall Line
- Normanskill highly uneven occurrence across northern watersheds
- Normanskill absent from James and Blackwater; moderate frequency along Nottoway Fall Line; minimal or no occurrence southeast; absent on Eastern Shore

Brewerton Corner Notched, Brewerton Side Notched, Brewerton Eared and Brewerton Corner Eared Triangle
- Brewerton Corner Notched most common; SI Index 3.3
- Brewerton Side Notched SI Index 2.8
- Brewerton Eared Notched SI Index 1.3
- Brewerton Eared Triangle SI Index 0.3
- Brewerton Eared Notched absent south of James

- Anomalous concentration of Brewerton Eared Notched along freshwater tidal Rappahannock; one-half of all recorded specimens in that setting

Slade

The Slade Point showed a relative limited and uneven occurrence within the study area. Interestingly, its greatest relative occurrence was not along the Nottoway River where the type was first described but rather in and around the Rappahannock and James Fall Line areas. Occurrence of the Slade type is further summarized as follows:

- Uncommon with a Global SI Index of 1.8
- Strong orientation to Fall Line settings
- Highest frequency along the James Fall Line and adjoining Peninsula Interior
- Essentially absent north of Rappahannock and both sides of the lower Chesapeake
- No occurrence along lower tidal reaches of any river system

Summary Discussion

Subsistence Implications of Point Type-Specific Settlement

Finding of this study clearly underscore distinct settlement patterning associated with specific point traditions. Perkiomen groups seem to have favored swamp margins, smaller drainages, and upland settings while Susquehanna settlement was more prevalent along the larger rivers/estuaries. This likely reflects differing subsistence orientation by the respective groups. Of further note is the anomalous concentration of Perkiomen along the Dismal Swamp. This phenomenon was first reported by McCary (1972) and elaborated on by Painter (1988), McLearen (1991) and also Blanton (2003). McLearen (1991) noted that the prevalence of these points along the Dismal Swamp conforms to observations by Witthoft (1953) whereby Perkiomen settlement in eastern Pennsylvania favored wetland margins and locations removed from larger river systems.

Analyses revealed differences in Savannah River and Late Archaic Narrow Blade occurrence that may also reflect distinct subsistence orientations. Savannah River is dominant at three of the four Potomac Falls sites. Located along the base of Little Falls, these occupations were likely geared to the exploitation of anadromous fish. By contrast, Late Archaic Narrow Blade types outnumber Savannah River by almost three to one along the open tidal waters of the nearby lower Anacostia. Pronounced differences in Broad Blade versus Narrow Blade settlement was noted along the lower Potomac as well. Late Archaic settlement at White Oak and Plum Nelly was near exclusively Savannah River. These sites were situated within tidal coves and contained extensive shellfish remains. No evidence for shellfish gathering was noted at the nearby Thicket Point Bay open shoreline, where Late Archaic Narrow Blade totals exceeded Savannah River counts by more than two to one. An increasing reliance on anadromous fish and shellfish resources is generally regarded as a hallmark of the Late Archaic. However, findings of this study suggest that such focus may have been manifested more within Savannah River groups rather than being representative of Late Archaic subsistence practices as a whole.

Implications for Territoriality, Migration, and Cultural Interaction

<u>Group Territoriality</u>

The array of Archaic point types addressed in this study underscore the diversity of cultures that existed in what is now Virginia. Temporally, the Brewertons and the Transitional Broadspears bookend the Late Archaic era. As such, it seems unlikely that these respective groups ever had significant contact. By contrast, elements of the more prevalent traditions to include Savannah River and Late Archaic Narrow Blade temporally overlap. The geographic occurrence of these contemporaneous traditions does not appear to be random. Rather, one sees distinct settlement nodes associated with specific point types. This patterning is viewed in part as the product of territorial manifestations by culturally distinct groups.

The most pronounced example of this phenomenon is seen along the tidal James River and the lower reaches of its two main tributaries where Late Archaic settlement is near exclusively marked by Savannah River points. With a collective SI Index of 89.8, this area is viewed as the Savannah River settlement core. The collective Narrow Blade SI Index for the same area is 5.7. However, strongly elevated frequencies of Narrow Blade types occur just outside the main area of Savannah River settlement. These Narrow Blade peaks include

James River Falls to the west (SI Index =23.3), the upper Chickahominy to the north (SI Index = 46.7), Jamestown Island to the east (SI Index =60.2), and the mid-drainage of the Blackwater River to the south (SI Index =27.1). This pattern suggests that Narrow Blade groups established themselves along the margins of the Savannah River core.

Savannah River Wide Blade is the dominant variant along the Lower James River. Occurrence of Savannah River Narrow Blade is conspicuously limited in this same area. However, discrete pockets of Cattle Run points are present. Downstream of Jamestown Island, Savannah River Wide Blade frequencies drop precipitously while Cattle Run type becomes dominant. Cattle Run is also prevalent in the far southeast to include the lower Chesapeake Bay Western Shore, the Cape Henry area, and along the Nansemond River and the North Landing River. Savannah River Wide Blade occurrence in these same areas is extremely limited (SI Index= 4.3). In the northern end of the study area, the reciprocal frequencies of Savannah River on the Potomac Gorge sites and Late Archaic Narrow Blade along the nearby tidal Anacostia is also seen as the expression of territorial divisions by contemporaneous, culturally distinct groups.

Type-specific geographic clustering is not limited to the Savannah River points. The middle reaches of the tidal Rappahannock exhibited anomalous frequencies of Brewerton types, principally Corner Notched and Side Notched. At the type-specific level, Late Archaic Narrow Blade elements also exhibited distinct areas of strongly elevated occurrence that may represent territorial manifestations. This includes Bare Island type at the Rappahannock Falls and also along the North Landing River, Poplar Island at the James River Falls, and Normanskill along the upper Chickahominy. Other peaks include a notable concentration of Susquehanna points along the Lower Bay western shores and the previously known concentration of Perkiomen points on the Suffolk Scarp/Dismal Swamp margins.

Group Movement and Possible Migration Vectors

Many researchers accept a southern origin for the Savannah River type. As proposed by Turnbaugh (1975) this logically presumes northward movement of that culture. Mouer (1990) similarly proposed a south to north adaptive radiation model for the Savannah River expansion. However, any genetic connection between Savannah River points and morphologically similar Northeast Broadspears remains unclear. As the name implies, the core area for these points appears to lie well to the north, and their occurrence in Virginia can be seen as the result of the southward in-migration by culturally distinct groups (Figure 31). Conversely, given these points' similarities to Savannah River, a south to north original transmission should be equally considered. With respect to Lehigh/Koens-Crispin type, this work posits that rather than originating in the Northeast, the tradition may have developed in-situ within the southeast portion of the study area. It is further proposed that Lehigh/Koens-Crispin and Cattle Run points may have had common aspects of ethno-genesis in this same area. Cultural distinction would have increasingly been more pronounced over time and distance, with Lehigh/Koens-Crispin expanding north, while Cattle Run remained limited to the greater James River/ lower Chesapeake Bay region. An in-situ development of the Slade type is also proposed. Little migratory movement of Slade seems indicated, with occurrence of the type strongly oriented to the central and southern Fall Line areas.

The Late Archaic Narrow Blade Poplar Island and Bare Island types, as well as the Susquehanna and Perkiomen Transitional Broadspears are viewed as migratory arrivals from the north. Geographic origins of Lamoka are less than clear. Since the type's formal description at the Lamoka Lake Site in west-central New York (Ritchie 1994), the type has been closely associated with the greater Northeast. Lamoka type is found across Virginia, and is notably prevalent in the southern Coastal Plain. Despite the close association to New York and the Lamoka Phase as defined by Ritchie, a northern origin is not universally accepted. Specifically, Funk and Rippeteau (1993) suggest that Lamoka peoples may have moved into the Northeast as part of a broad based migration from an ancestral homeland in greater Middle Atlantic. Findings of this study show Lamoka has a wide spread and relatively even distribution across the Virginia Coastal Plain. No single physiographic setting seems to have been favored by Lamoka groups, nor are any major individual settlement nodes indicated. The only patterning discerned was a strong negative correlation between Lamoka and Savannah River types along the middle reaches of the tidal James.

The prominent occurrence of Perkiomen in far southeastern Virginia has long been of interest to researchers. In addition to the Dismal Swamp margins, McLearen (1991) notes a second concentration of

Perkiomen along the upper Potomac drainage in the northern Shenandoah Valley. Any social connection between these two settlement loci would have entailed overland travel. A terrestrial route would logically follow the Potomac River through the Blue Ridge to the Fall Line, and then south to cross the Rappahannock, James, and Appomattox at, or near the Falls (Figure 31).

In assessing possible Late Archaic migration vectors, use of open water-capable craft is an important consideration. For groups that lacked sophisticated watercraft capable of crossing the Chesapeake and its major tributaries, north-south travel would have been limited to the Falls and Piedmont river fords. In noting the interior settlement preferences by Perkiomen, Ritchie (1994:154) suggested that these groups may have placed an emphasis on hunting over fishing and had less mobility by way of water travel. Should the Perkiomen culture have lacked open water-capable craft, then an interior overland migration route would have been necessary to reach southeast Virginia. By contrast, the major riverine/estuarine settlement focus exhibited by Susquehanna groups would imply use of sophisticated watercraft which would open the length of the Chesapeake Bay as a transportation route/migration vector.

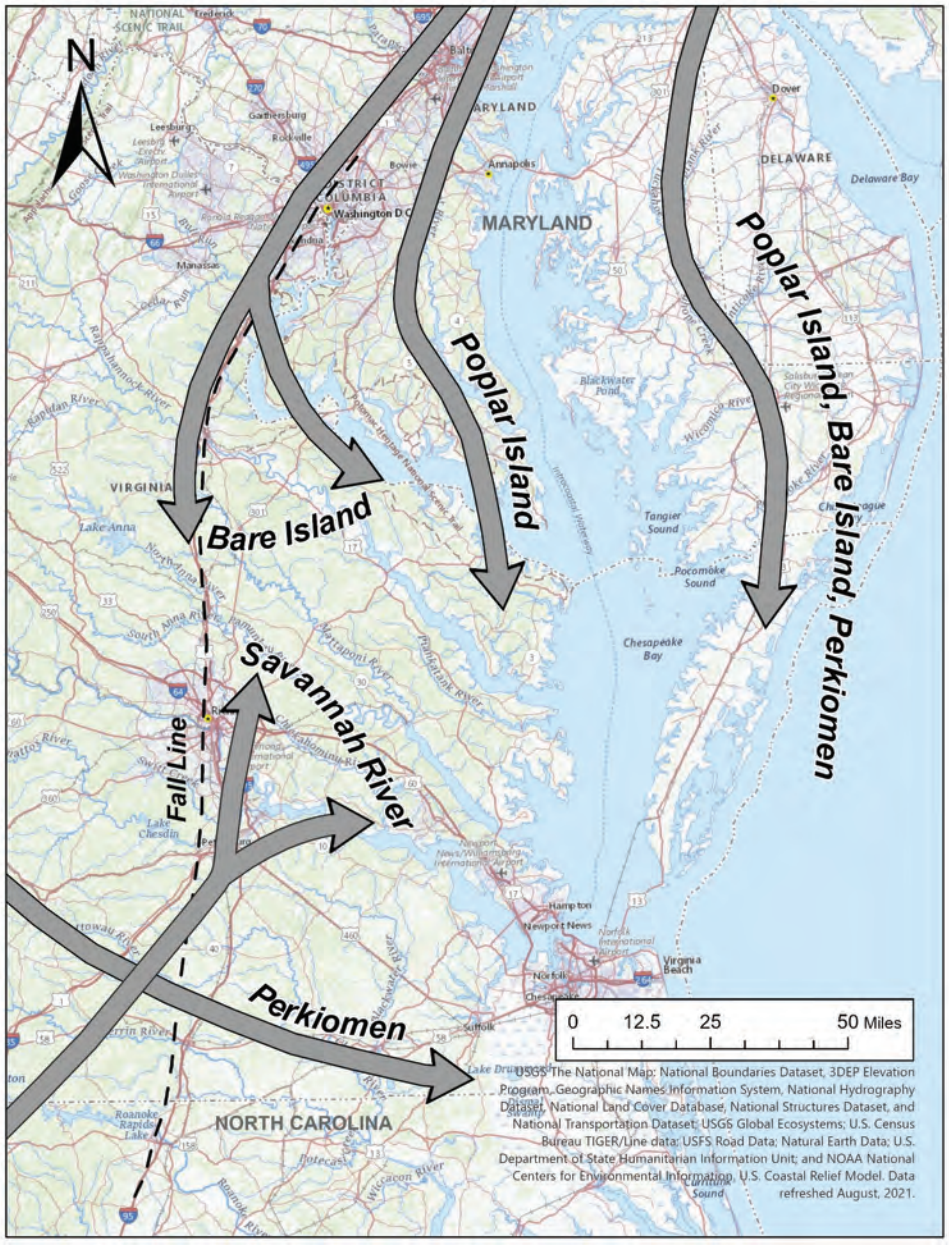


Figure 31. Proposed Migration Vectors by Point Type.

Occurrence of the Northeast Broadspears may be telling in similar ways. The Snook Kill type is uncommon within the study area, comprising less than one percent of Late Archaic points. It occurs primarily in the upper Potomac and also the lower Chesapeake Bay to include the Eastern Shore and the Tidewater region. As such, group movement would logically have been north-south along the Chesapeake Bay shores. Also inferred by the type's presence on the lower Bay's Eastern Shore and Western Shore is the use of sophisticated boats capable of crossing open waters. Lehigh/Koens-Crispin type even more closely favors the Lower Chesapeake Bay region while the type is limited in occurrence or absent from interior areas. Migration and travel along the main stem of the Chesapeake by watercraft is inferred.

As previously noted, Savannah River group settlement did not center on the Fall Line but rather was most prevalent along the freshwater tidal reaches downstream thereof. The greatest relative frequency of Savannah River (100 percent all Late Archaic points) was registered in the upland Meherrin–Roanoke Interfluvial study unit. The unit can also be seen as bridging the Virginia Coastal Plain with the middle Roanoke River drainage. Movement of Savannah River groups into the study area from the south would likely have been overland. The general paucity of Savannah River points on the upper reaches of the greater Carolina

Sounds system and the Lower Bay Western Shore, along with its prevalence along the length of the Fall Line would seem to suggest such a terrestrial, inland migration route. However, direct interaction between Savannah River settlement nodes would have presumably been facilitated by watercraft, as would the transport of steatite vessels from distant Piedmont and Blue Ridge quarry sources.

Other traditions clearly favored Fall Line settings. These include Late Archaic Narrow Blade as well as the Brewertons and also Slade points. As a logical river crossing point, one can view the Falls as facilitating and channeling group movement. The Bare Island group migration in particular may have been along the Fall Lines based on relative frequency of occurrence in these areas (see Figure 25). Most migration along the Falls is assumed to have been north to south. An exception may be the Slade point which may have had local origins. Also noted is that certain Late Archaic Narrow Blade types exhibited elevated relative frequencies in specific Fall Line settings. This includes Bare Island points along the Rappahannock, Lamoka and Normanskill types on the upper Chickahominy, and Poplar Island points along the lower James. If the Fall Line was a vector for in-migration by Narrow Blade groups from the north, one can presume these arrivals would encounter active resistance from local established groups, particularly Savannah River. Under such circumstances movement of Narrow Blade groups might have been blunted, leaving the newcomers to settle along the periphery of the Savannah River core (Table 8).

Point Type/Tradition	Proposed Ancestral Area	Proposed Migration Vectors in Relation to Study Area
Susquehanna	Middle Susquehanna Valley? Greater Northeast	North to south along Chesapeake Bay western shores; waterborne
Perkiomen	Middle Delaware Valley? Greater North-east	North to south overland along Fall Line, west to east overland
Lehigh/Koens Crispin	Lower Chesapeake/Upper Carolina Sounds; Roanoke Mid-drainage?	North to south along Chesapeake Bay western shores; waterborne
Snook Kill	Middle Hudson Valley? Greater Northeast	North to south along Chesapeake Bay western shores; waterborne
Savannah River	Coastal Mid-Southeast	South to north interior overland by way of Roanoke mid-drainage
Cattle Run	Lower Chesapeake Bay; Southeast Virginia	In-situ ethno-genesis of tradition?
Bare Island	Middle Susquehanna Valley? Greater Northeast	North to south along Fall Line; Del-marva Peninsula
Poplar Island	Middle Susquehanna Valley? Greater Northeast	North to south along Fall Line and Delmarva Peninsula
Lamoka	New York Finger Lakes? Southern Middle Atlantic?	Diffuse movement overland
Brewerton Cluster	Greater Northeast	Diffuse north to south movement overland
Slade	Southern and Central Virginia Fall Line	Little apparent migration; in situ ethno-genesis?

Table 8. Proposed Ancestral Areas and Migration Vectors by Type.

Inter-Group Relations and Interactions

With respect to Fall Line settings, the Potomac Gorge may have had the most intensive inter-group contacts due to its unique geographic location and physiographic character. The Potomac River would have provided a direct, water travel route through the Blue Ridge to the Great Valley and areas north and west, as well as the greater Chesapeake Bay region to the east. In this regard, the Potomac Falls can be seen as mid-point along a corridor connecting the interior Northeast and southern Middle Atlantic regions. The Potomac assemblages analyzed in this study indeed appear to show influence from both northern and southern regions. In more granular context, the dichotomous occurrence of Savannah River and the Narrow Blade types in the Potomac Gorge versus the nearby Anacostia River setting raises the question of how these proximate groups may have interacted, as well as the full nature of their relations.

One could view the Potomac Falls, and other Fall Line locations as a boundary zone or territorially neutral area in which distinct cultural groups could interact, or at a minimum, tolerate each other's presence during close quarter exploitation of seasonally highly abundant anadromous fish resources. The Rappahannock Fall Line and to some extent the James River Fall Line could be similarly viewed. Egloff (1985), McLearen and Mouer (1989), Turner (1992) and others have presented the Falls Zone as a neutral buffer area respected by culturally distinct Woodland groups. This concept of the Falls as a territorially neutral resource commons could perhaps be extrapolated back to Late Archaic times.

Regardless, Fall Line areas would have been characterized by cultural diversity and group interaction. Southeast Virginia and the Dismal Swamp environs also likely witnessed extensive cultural interaction. Such interaction would have been the result of groups moving south along the Chesapeake Bay shore, and west-east along the James River as well. The area also seems to have had strong cultural connections to the Roanoke River mid-drainage areas to the southwest given the prevalence of Carolina Slate Belt region meta-volcanic stone in point manufacture, particularly for the broad blade types. The use of other non-local lithic materials in the manufacture of specific point types in this same area carries strong implications with respect to group movement, long distance lithic procurement, and/or trade and exchange. This includes purple rhyolite for Susquehanna points, Fall Line chert for the Dismal Swamp Perkiomen points, and argillite used in Lackawaxen point manufacture.

In light of the dominance of Savannah River along the tidal James, one must consider the full nature of relations between these groups and elements of the Narrow Blade tradition, presumably moving in from the north. Early Perkiomen and Susquehanna groups arriving to the area may also have encountered entrenched Savannah River entities. It seems unlikely that resident groups would have seen these newcomers as anything but unwanted interlopers and competition for finite local resources. It is reasonable to postulate if initial contact was hostile, under what circumstances would newcomers have been accommodated or allowed passage through Savannah River territory? One could look to steatite trade as perhaps modulating inter-cultural relations of the period, particularly between Savannah River and other cultural groups along the mouth of the Chesapeake Bay and the Dismal Swamp margins. The dominance of Savannah River points along the James River did not stop at the Fall Line but clearly extended west across the Piedmont to the Blue Ridge slope and beyond (Egghart 2020). This would have given Savannah River groups control of both the steatite source quarries and the river transport corridor. If James River Savannah River groups controlled movement of steatite vessels into southeastern Virginia, what reciprocal benefit might they have derived from such trade relations? Alternately, could the steatite prevalent in non-Savannah River contexts in southeastern Virginia have originated in other areas such as the Carolina Slate Belt region or even the more distant southern Blue Ridge? If so, what might have been the transport vectors and the nature of cultural interactions that facilitated this long distance movement of such heavy items? As is the case in any archaeological study of human behaviors, more questions are raised than answered.

Summary Remarks

Expected Versus Unexpected Findings

Results of this study underscore previously recognized aspects of the Late Archaic but also provide some novel and unexpected insights. Findings that comport with generally accepted aspects of the Late Archaic include a settlement focus by Savannah River peoples on major riverine/estuarine settings. Also supported by the study's finding is the apparent importance of shellfish and anadromous fish exploitation by Savannah River groups. Other previously recognized settlement trends include the anomalous occurrence of Perkiomen points along the Suffolk Scarp and the dominance of Wide-Blade Savannah River points along the tidal James. Novel findings include evidence for distinct settlement nodes associated with specific point types such as Lehigh/Koens-Crispin near the mouth of the Rappahannock and Cattle Run along the mouth of the James/Lower Chesapeake Bay shores.

Given the well-known dominance of Savannah River Wide Blade in the James River watershed and the prevalence of the Savannah River Narrow-Blade long reported in the northern watersheds, it was assumed that the north to south frequencies of the respective forms would follow a gradient. This was not borne out by the data. The dominance of the Savannah River Wide Blade along the James extends north into the Chickahominy drainage. However, occurrence of Savannah River Wide Blade is minimal along the Rappahannock, with the

Narrow Blade form dominant. Further north in the Potomac drainage, Savannah River Wide Blade is again common, occurring with near equal frequency as the Narrow Blade form.

The author has long been familiar with the Cattle Run Savannah River point variant based on extensive survey and excavation experience along the James and Chickahominy Rivers below the Falls. The Cattle Run type site (Geier 1996) was located on a low order James tributary near Richmond. As such, an assumption was made that the freshwater tidal James and not the mouth of the Chesapeake Bay was likely the core area for the type in Virginia. These findings underscore the importance of collecting and analyzing large quantities of hard data rather than relying on impressionistic observation based on more limited assemblages.

Directions for Future Research

The picture of the Late Archaic brought into focus by this study is one of diversity, with multiple distinct cultures overlapping in space and time. Further, with the apparent exception of Slade and possibly Cattle Run points, these traditions likely originated outside the area. This highlights the role that migration and group movement played in shaping the cultural mosaic that was the Late Archaic in eastern Virginia. The impetus for such movement was likely varied but almost certainly included population pressure and resource shortfalls within respective groups' original home areas. Under these conditions, the expansive mast-bearing forests and newly developed tidal estuaries of coastal Virginia would have been highly attractive to outside groups, particularly those to the north. However, the study area was already well populated. Further, while the Virginia Coastal Plain was undoubtedly highly attractive, its resources were uneven in geographic occurrence, seasonally based, and prone to periodic shortfalls. These dynamics and cultural responses thereto would have provided for a complex and challenging Late Archaic world.

To better understand this world, one must look beyond point counts and other artifact numbers and endeavor to conceptualize the full human experience of the times. In doing so, one must address issues of cultural identity, inter-group relations, and developing social complexity. An inevitable outcome of population movement would have been inter-group competition. Looking to historic Native American relations as an analog, such competition would almost certainly have led to conflict. At the same time, unmitigated competition and endemic warfare would have been maladaptive. To further draw on historical Native America, one must envision the role that Late Archaic trade (particularly in steatite), material reciprocity, and other social and economic interactions may have played in minimizing conflict and otherwise facilitating relationships between competing groups occupying a common geo-cultural sphere. This sphere would have been defined by an array of peoples, many with extra-regional origins, bound together through a hunter-gatherer lifeway sustained by the diverse and highly productive environments of the Virginia Coastal Plain. The manner in which Late Archaic Native Americans operated in this setting by way of economic endeavors, technological innovation, cultural relations, and social organization should remain a central research focus.

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60 YEARS AN ARCHAEOLOGIST

By Theodore R. Reinhart, Ph.D.

When people get to a certain age, when their life is mostly behind them and their future is short, they often think about and assess the path that their life has followed. In my 85th year, because I was an archaeologist most of my life, I was encouraged to do this in print by the current editor, and this essay is the result. I agreed to do this because I think the course of a life that spans the last 60 years in American archaeology has something to reveal about the profession itself that younger people may find interesting, and not because I believe my life or my career in archaeology is of any special importance. I think archaeology has changed considerably in 60 years, and you undoubtedly know this already. However, I want to put these changes in the context of my career. In order to do this, I will discuss the specific people, places, and events that were my archaeological career (Figure 1).

Figure 1. Me at Machu Picchu in 2008. All photos from the author's collection.

First of all, I should mention that I have not wanted to be an archaeologist since I was a young boy. The reason I mention this is because Norman F. Barka once told me that his interest in archaeology went back that far. I, on the other hand, had no idea what I wanted to do, even as a high school graduate. I volunteered for three years of military service and decided to apply to Penn State for the fall in the final year of service. At Penn State, I majored in philosophy because I took many different courses and philosophy required only nine courses to declare a major. Tuition was $175 a semester, but after five semesters and two summers, I had enough credits to graduate, and I moved to Washington, DC, to work for the federal government.

At Penn State, I took two anthropology courses. I took an introduction to anthropology course from William T. Sanders and a course on the Amish and folk societies from Maurice A. Mook Sanders was in his first or second year of his career at Penn State and Mook was near the end of his career. Together they sparked my interest in anthropology, and I began to see anthropology as the practical approach to learning who I was, at a time when philosophy's intellectual approach had become frustrating for me.

Federal service under the Kennedy administration was exciting, but I wanted to learn more about anthropology, so I enrolled in graduate school at George Washington University. There were two anthropologists in the university's Department of Sociology and Anthropology: John M. Campbell and Patrick Gallagher. Campbell was an Arctic archaeologist, and he convinced me I should become an archaeologist. However, I was unable to do fieldwork in the Arctic, because of my federal obligations, so I did a Library of Congress thesis on an Arctic subject (Reinhart 1964). In 1964, Campbell was hired as chair of the Department of Anthropology at the University of New Mexico. He convinced me to go with him and enter their Ph.D. program, and my wife and I moved to Albuquerque, New Mexico in the fall, giving up my government job for a $2400 per year assistantship. I fell in love with the Southwest, and I decided that I wanted to do my work there. Four years, one more assistantship and two university fellowships later, I had my Ph.D. and began my 35-year tenure at the College of William and Mary. Incidentally, Dennis J. Stanford and Robert L. Humphrey, also New Mexico graduate students, both went to the Arctic with Campbell, and both

later worked in Washington, DC—Stanford at the Smithsonian and Humphrey at George Washington University.

The Old Archaeology: Prehistoric Archaeology in the Southwest

Campbell was ahead of his time in seeing the importance of environmental studies in archaeology. He was an Arctic archaeologist, after all, and environmental concerns are big in the Arctic. Most of the archaeology faculty at New Mexico were still Old Archaeologists. They dug sites to see what was there and to compare them with other sites that had been previously dug. Old Archaeology has a long history: archaeologists choose a site that interests them and with little or no real theoretical framework proceed to excavate it to see what is there. My first real archaeological fieldwork was with two giants in Great Plains archaeology: Waldo R. Wedel and George S. Metcalf. Both had extensive experience on the American Plains, and Wedel was considered the area expert on its archaeology. I worked at the Tabias site in central Kansas with the two during my first year of New Mexico graduate school (Figures 2, 3, and 4). The Smithsonian Institution sponsored the excavation on what was called a Council Circle: four sausage-shaped houses in a square and different from the usual smaller huts found throughout the site. Wedel (1967), in an *American Antiquity* article, later argued that these had solar alignments and were for special functions in the village. We did not screen any fill and, as most of the bone were mostly from bison, little bone was saved. Flotation was unknown. The normal instrument of excavation was a shovel—one that had a blunt nose and was sharpened to a thin blade. I was told that Plains archaeologists had contests to see who could heave a shovelful of dirt the greatest distance. We also used trowels, but peeling the fill with a sharp, blunt shovel was the standard excavation method. The crew was made up of four male diggers, including me, with Wedel and Metcalf directing. We had a boy scout as a cook in the abandoned farmhouse we were staying in. I received $1.25/hour, and about mid-season, I received a raise to $1.50.

This was classic Old Archaeology, and it was standard Plains archaeology in the middle sixties. Artifact comparison, house form, and site location were used to build chronologies, with dates uncertain. We did take radiocarbon samples, but little was known about the procedure, and all were contaminated. In telling you this, I am not criticizing these men or their archaeology; this was standard archaeological procedure at the time. In addition. if I

Figure 2. Excavation of the Tabias Site, Rice County, Kansas.

Figure 3. Cache of Flints and Me at the Tabias Site.

Figure 4. The Tabias Site Crew—Me, Metcalf, and Wedel in Front Row.

Figure 5. Room Blocks and Plaza at Sapawe, Rio Arriba County, New Mexico.

had any doubts about becoming an archaeologist before this fantastic season on the Plains with these seasoned professionals, I forgot them and I was now committed to the field.

My assistantships at New Mexico were with two faculty archaeologists: Frank C. Hibben and Florence Hawley Ellis. Hibben got me money to do my dissertation work on Southwest Archaic cultures and took me on several Paleoindian surveys, and Ellis gave me experience in Pueblo archaeology. Under Ellis, I worked as a crew chief at Sapawe, a huge, multi-room late prehistoric Tewa pueblo, abandoned before Contact (Windes and McKenna 2018) (Figures 5 and 6). Again, we dug rooms to see what was there. I also saw the excavation of a deep plaza kiva with a DOT backhoe because of an interest in the floor furniture configuration. Several burials also were recovered that season; they were boxed and put in the Bone Room in the Anthropology building after excavation (Reinhart 1968b). There was a living Tewa village down the road, but no member of that community witnessed our excavations. This was a University of New Mexico field school, so both males and females were enrolled. I did not get paid for my supervising position, but I did get room in a tepee, meals, and a title.

Figure 6. Excavating Rooms at Sapawe.

Florence Hawley Ellis was a renowned Pueblo scholar, a prolific writer of both Pueblo archaeology and Pueblo ethnology, and an expert witness for the Pueblos in Claim Commission litigation. She was a giant in her field, and I met many Pueblo natives and scholars that came to her office at the university. I traveled with her to the Reno, Nevada, meeting of the Society for American Archaeology one year, and it was my archaeological debut—my introduction to the profession. With the help of both Hibben and Ellis, I had an article published in *American Antiquity* before I graduated (Reinhart 1967).

Alfred E. Dittert, Jr. and Douglas W. Schwartz were contemporaries of Hibben and Ellis, but I learned a different type

of archaeology from them. Ed Dittert, at the Laboratory of Anthropology in Santa Fe and later at Arizona State University, and his colleague James Schoenwetter worked in northern New Mexico on early Navajo sites being impacted by the construction of Navajo Dam in the sixties. They took an ecological approach to interpreting their data. Schoenwetter pioneered pollen studies in the Southwest and helped me take a more meaningful approach to my archaeological data. He also introduced me to Arthur H. Harris, a Southwest faunal expert at the University of Texas at El Paso, who helped me identify the faunal assemblages at several of the sites I was working on for my dissertation. I regularly took pollen samples, collected all faunal remains, and screened fill through quarter-inch hardware cloth. My dissertation was three hundred and fifty pages long and filled with the kinds of data I saw only in the studies of my contemporaries, but few of my mentors (Reinhart 1968a). The Old Archaeology was changing, but not all at once, and I hesitate to establish dates. In fact, one could say it never really disappeared and is still with us.

I worked with Douglas Schwartz, who was the director of the School of American Research in Santa Fe, on the North Rim of the Grand Canyon and at the Arroyo Hondo Ruin south of Santa Fe. A year after I received my Ph.D., in 1969, I was on the North Rim, directing the excavation of a small, multi-room pueblo along the Cape Royal access road (Walhalla Glades Ruin). The South Rim had an interpreted pueblo, and the Park Service wanted a site on the North Rim for visitors. We excavated the site in conjunction with a survey and ecological study of the plateau area north of the canyon. The school had worked at Unkar Delta inside the canyon the year before, and sites similar to the rim sites were found there. The hypothesis was that these were the same people, who spent winter in the warm canyon and summer on the cool canyon rim. Survey of the rim produced a long chronology from Paleoindian to at least 1,180 CE, and experiments were conducted to understand the rim's agricultural potential (Figures 7, 8, and 9). We screened all fill and collected all ecofacts, including many corn samples. Our crew on the North Rim was all male, as required by the Park Service, and was paid from grant monies. This was a fantastic summer on the rim of the Grand Canyon in the centennial year of John Wesley Powell's trip down the canyon.

The next two years, I worked at a large prehistoric pueblo south of Santa Fe, called the Arroyo Hondo site. The first year, I directed a crew in the exploratory excavation of a section of the site, in order to determine what kind of archaeological questions its excavation could answer (Figures 10 and 11). I also spent time researching the Pueblo history of the area, to determine what kind of questions there were to answer. I

Figure 7. Walhalla Glades Ruin on the North Rim of the Grand Canyon, Coconino County, Arizona, before Excavation.

Figure 8. Visitors at the Walhalla Glades Ruin during Excavation.

Figure 9. Walhalla Glades Ruin after Excavation.

Figure 10. Excavating a Room Block at the Arroyo Hondo Site, Santa Fe County, New Mexico.

Figure 11. Mapping the Room Block after Excavation at the Arroyo Hondo Site.

suggested the title for the grant proposal: The Ramifications of Population Growth. The proposal was funded by the National Science Foundation, and I returned the following year to help get the work started (Reinhart 1971). The crew in that second year was mixed male and female; five College of William and Mary students were on the crew, including Mary Katherine Slusser and Mary Carolyn Beaudry (Figure 12). However, I decided to withdraw from the program that year and concentrate on archaeology closer to home. My family was finding it a burden to travel to and to live in the Southwest each summer. And, of course, there was much archaeology to do in Virginia.

Figure 12. The Arroyo Hondo Site Crew in 1971. Douglas Schwartz is third from the left in the first row, and Reinhart is the second from the right in the same row. The five William and Mary students who participated in the excavations at the site are: Ronald David Anzalone (first from the left in the first row), Mary Carolyn Beaudry (fifth from the left in the second row), Linda Ann Heck (first from the right in the third row), Ray Randolph Sasser Jr. (fourth from the left in the second row), and Mary Catherine Slusser (first from the left in the second row).

The New Archaeology

I graduated from the University of New Mexico before Louis Binford arrived there. He is the scholar most associated with the New Archaeology. His often-cited 1962 article in *American Antiquity*, dealing with the interpretation of copper tools, inspired young scholars to define and to refine this approach. There were earlier calls for this kind of interpretation, but it was Binford's work that led young archaeologists to reexamine and to reject "the old fogies," those that practiced the Old Archaeology, and to replace it with science. He argued that archaeology should be anthropology—it should contribute to the science of mankind. To do this, it should embrace the methodology of science. Beyond using the metric system, controlled excavation strategies, sophisticated recovery mechanisms, and meticulous recording, it should include hypotheses, supporting facts, supported conclusions, etc. I suspect that some wanted to make archaeology into a physical science akin to physics. I personally sat through many papers by scholars at professional meetings who discussed ways to do this. In the Southwest, where there are tight chronological controls provide by dendrochronology, several University of Arizona New Archaeologists sought to capture the social organization of prehistoric people through sophisticated analysis of ceramic designs. All this really seemed to me to come to naught. I think if the New Archaeology contributed anything, it was the idea that a site should not just be excavated to see what there but should answer an appropriate question that the archaeological approach to the site is designed to answer.

Binford chose the path of ethnoarchaeology to provide data for the interpretation of archaeological remains: the study of modern, at least historically known, hunters and gatherers to understand prehistoric site formation. Interesting, he too followed John Campbell to the Arctic to study the Nunamiut, a northern Alaska hunting culture. Meanwhile, the old fogies continued to do Old Archaeology and the rest of us threw away our Luskin tape measures and continued using an ecological approach.

My decision to become a Virginia archaeologist was not greeted with any enthusiasm from the Virginia archaeological community. Considering how many people are doing archaeological work in Virginia today, the field was far from crowded in the early seventies. Ivor Noël Hume was the Colonial Williamsburg archaeologist, and his student William Kelso was working on historical sites on the Kingsmill property, which Colonial Williamsburg had just sold to Anhaeser-Busch, Norman Barka at the College of William and Mary was working on the Poor Potter's Kiln and the battlefield at Yorktown and with Ben C. McCary on sites along

the Chickahominy River, and Howard C. MacCord was covering the rest of the state. Of course, there were others doing Virginia archaeology in addition to these people, such as C. G. "Gilly" Holland, Joseph L. Benthall, Floyd E. Painter, Leverette B. "Lefty" Gregory, J. Paul Hudson, etc., but I would learn about them later.

Norman Barka tolerated me because the decision to hire me at the College of William and Mary was not his to make. In fact, I learned that I was hired because Nathan Altshuler went to graduate school at Harvard University with Harry W. Basehart, a cultural anthropologist at the University of New Mexico, and Basehart, because he was one of my graduate advisors, talked to Altshuler about hiring me at the Washington, DC, meeting of the American Anthropological Association. In addition, it was Altshuler's ambition to free anthropology at the College from its affiliation with Sociology, and he thought another archaeologist in the department would help to further the difference between what anthropologists and sociologists do. The "Old Boy" network was alive and well, and muddy boots, shovels and wheelbarrows, and bags of artifacts helped the Dean understand that when we did fieldwork, we actually worked in a field.

I found that Howard MacCord was suspicious of academics, but he too tolerated me, because, having worked with members of the Archaeological Society of New Mexico, I was willing to join the Archeological Society of Virginia and attend its meetings. I went with Barka, Ben McCary, and George F. Carter to my first ASV annual meeting in Richmond in the late sixties. At the banquet I sat across from Edward F. "Ned" Heite, who, when he learned that I was an anthropologist, proceeded to tell me that anthropologists should not dig historical sites because they use the metric system. I told him that for the same reason we should not dig prehistoric sites, because those people most certainly did not use the metric system either. The joke did not seem to register with him, but possibly it did, as he took his conversation elsewhere. Years later, in 1978, I was to ingratiate myself with MacCord, when I agreed to become the *Quarterly Bulletin* editor, after Lauren Harrison unexpectedly quit the post and an issue was due but there were no available articles. I put together the issue solely on the College Creek site, which I had just excavated for the National Park Service; there were my article (Reinhart 1978) and supporting articles from two of my former students, LuAnn DeCunzo (1978) and Michael B. Barber (1978).

Soon after I took the job at William and Mary, I made an appointment to see Noël Hume, a courtesy call. He saw no way that we could cooperate, and he said he was not hiring. Again, some years later, he would recommend me for a prehistoric survey in Winter Park, Florida, when the president of a small college there requested Noël Hume or a competent substitute to do the work. It was a wonderful "gig job," and I took my family to Disney World. And ironically, when I was program chairman for an ASV annual meeting in Williamsburg, and I had convinced him to be the banquet speaker, I followed his speaking requirements so well, that as I was helping him carry things to his car, he suggested that we should cooperate on a future project. It never happened, but I felt I finally had earned his respect.

Figure 13. Excavating and Screening the Plowzone at a Middle Woodland Site in Kingsmill, James City County, Virginia.

Prehistoric Archaeology in Virginia

Because there was this belief among some historians that anthropologists should not do historical archaeology, when I returned to Virginia in the early seventies, I first concentrated on prehistoric archaeology. After finding out that he was not dealing with the prehistoric sites on the Kingsmill property, I approached Bill Kelso about the possibility that I ask the new owners to support my prehistoric work. He agreed, I wrote a proposal, and Busch Properties gave me $40,000 to do the work (Figures 13 and 14). This was a lucky break for me, as I got no help from the College to

equip an archaeological project, the grant allowed me to purchase wheelbarrows, shovels, tapes, and the other necessary field equipment. I even was able to purchase an alidade and mapping table. Over two years my students and I surveyed the property and excavated a surviving portion of a riverside Middle Woodland site on what eventually became the 18th tee of the Kingsmill Golf Course (Reinhart 1974, 1975a, 1975b). August Busch IV and his little boy came down to the site for a visit that second summer; unfortunately, he forgot the beer.

I worked on two other prehistoric sites, both threatened, following the Kingsmill project. Like Kingsmill, both were near the College, which allowed me to use them as practical experience for my archaeology classes. I taught a class on Archaeological Methods and required field participation, but I also gave students in my other archaeology courses the opportunity to participate if they wanted. Ben McCary brought the Powhatan Creek site on Route 5 to my attention (Figures 15 and 16). Townhouses were beginning to encroach on the site, and because the site was in the floodplain of the creek, the possibility of excavating a stratified site presented itself. It was stratified, but in the light sandy soil all strata differentiation had disappeared and only the artifacts were stratified (Reinhart 1976). However, a sequence from Archaic to Late Woodland was discernable in projectile points. Michael A. Malpass (1976), a graduate of William and Mary, was able to use the ceramic data from this site for his master's degree at the University of Wisconsin.

Figure 14. Excavating a Prehistoric Site on the Kingsmill Golf Course.

Figure 15. Ben McCary, Douglas W. Sanford, and an Unidentified Student at the Powhatan Creek Site, James City County, Virginia.

Figure 16. Powhatan Creek Site during Excavation.

Figure 17. College Creek Site, James City County, Virginia, before Excavation.

John L. Cotter of the National Park Service requested our work at the College Creek site, mentioned earlier. Prehistoric ceramics, chipped stone, and bone were eroding from the high bank of the creek near its junction with the James River (Figure 17). His budget allowed him only to give us $200 for the work, but we would have done it for free. LuAnn DeCunzo, who would later become president of the Society for Historical Archaeology, excavated a small historical component of the site and analyzed its data for her senior thesis at the College (Figure 18).

I had been on the staff of two summer field schools at the University of New Mexico, one under the direction of J. J. Brody and the second, as mentioned above, under the direction of Florence Hawley Ellis, and in the seventies, I decided I wanted to have one of my own in Virginia. If you think it's difficult to teach new tricks to an old dog, it is even more difficult to do something new and innovative at an old school. I wanted to set up a field camp with a kitchen facility away from campus, where staff and students would live for six weeks of the season. I was repeatedly told by administration officials that "You can't do that." Fortunately, the Dean interceded, and then it was all possible. Purchasing anything without going through established channels was a problem. We wanted to purchase food and necessities from a grocery store near the site. Finally, we were given permission to purchase groceries, but only groceries, from a local store. However, Marvin Smither, our camp supervisor, talked to the store's manager into listing anything we bought as "groceries." Before we started, I was able to purchase surplus tents, kitchen appliances, dining room utensils, etc., and we borrowed cots and mattresses from the College. It was a great deal of work, but in 1978, we had our first field school at Flowerdew Hundred Farm in Prince George County.

Figure 18. LuAnn DeCunzo Mapping the Historical Component at the College Creek Site.

The Department of Anthropology had forged a relationship with David A. Harrison III, the owner of Flowerdew, and created an entity called "Southside Historical Sites, Inc." Norman Barka and Nathan Altshuler were part of this entity, I was not. Nevertheless, because Harrison wanted more archaeological work done at Flowerdew and because Barka already had a small crew at Flowerdew, I agreed to take the first field school there. Barka provided Andrew C. Edwards and Charles T. Hodges for my supervisory staff, and I hired Mary Carolyn Beaudry to round out the teaching staff and a cook.

The fieldwork included both prehistoric and historical sites, and the students rotated from the Enclosed Settlement historical site (Edwards), to the Sassafras Springs prehistoric site (Hodges) (Figure 19) (Reinhart *et al*. 1978; Reinhart 1979), to the Wilkinson Ferry historical site (Beaudry). Fifteen students participated, including future professional archaeologists Julia Ann King and Patricia M. Samford. The field school went so well that Harrison called me over to his house one day and asked me if I was taking over the fieldwork at Flowerdew from Barka. I had not realized that the relationship had deteriorated that far, but I told him that I had no desire to replace Barka and that my participation would end when the field school ended. The relationship was dissolved after that summer, and I sought a new venue for the field school the next year. With help of Mr. Smither, I found that venue at Shirley Plantation, and during the summers of 1979 and 1980 we worked at that grand place.

Figure 19. Excavation of the Sassafras Springs Site at Flowerdew, Prince George County, Virginia.

CRM Archaeology

Before going into any details about those summers, however, I must acknowledge the monumental change that occurred in archaeology in the seventies. A new type of archaeology emerged. This archaeology would not be ignored, and it changed everything. It is CRM Archaeology—Cultural Resource Management Archaeology—and this archaeology promised to pour money into archaeology, to define the sites archaeologists could study, to expand the number of people doing archaeological work, and to take much archaeology out of an academic setting. It revolutionized archaeology, and it is still with us today.

In the seventies and early eighties, various pieces of federal legislation were passed that created this revolution. Federal construction projects and other projects using federal money were required to assess environmental impacts, including impacts on any archaeological sites. Archaeologists would be needed to conduct surveys, test excavations, and full excavations, and funds would be made available to do this work. Academic institutions, as well as private firms, would compete for this work, and many more trained people would be needed to do it. In addition, this work would require government regulations, organizations, and officials to regulate and to monitor it. Things were happening fast, and archaeologists scrambled to keep up with developments, to protect their interests, and to be sure they got part of the promised funds. It was at this time that the Council of Virginia Archaeologists (COVA) was formed by archaeologists working in Virginia. Meeting in Richmond, we put together the organization to protect our interests and to advise the regulators at the state level, whicht became the Department of Historic Resources. On October 13, 1995, COVA gave honorary life memberships to its founding members who were still active in the organization: Howard MacCord, Norman Barka, and me. As MacCord and Barka are now deceased, I may be the only surviving person who took part in the founding. The plaque given to me in 1995 reads that I had been a member of COVA for 20 continuous years, so I assume we formed in 1975. In any case, I have saved all my records from those meetings, as well as years of the early COVA literature, and they are part of my papers in Swem Library at the College of William and Mary. Norman Barka was the first president of COVA, and I was the second.

In spite of these changes to my profession, I took very little part in CRM archaeology in the seventies and early eighties. As I became more confident and competent in working with historical remains and in identifying historic materials, I became an archaeologist without prescribed limitations. When I became president of the ASV, Stanley South came up to Blacksburg, where we were holding our annual meeting, to be our banquet speaker, and I could hold my own in conversations with him about historical archaeology. In 1984, I was the program chair for the Society for Historical Archaeology annual meeting in Williamsburg, and scheduled South to speak in the opening session, which I chaired. The then president of the Society accused South of not paying his dues and ordered him off the stage. I intervened, the audience supported me, the president left, and South spoke (That is at least the way I remember it). In any case, both prehistoric and historic sites are recognized cultural resources and the distinction between the two is artificial and a case of historians trying to protect their academic boundaries.

Figure 20. Excavation of a Large Dependency at Shirley Plantation, Charles City County, Virginia.

Figure 21. Standing Chimney at the Slave Cabin Site at Shirley Plantation.

During our first summer at Shirley Plantation, Beaudry and Hodges again were on the staff, and they were joined by a new William and Mary graduate student Genevieve Leavitt. We worked to define a large, buried dependency just to the southeast of the main house (Beaudry) (Figure 20), a prehistoric palisaded village along the James River (Hodges), and slave quarters about a half-mile east of the main house (Leavitte) (Figure 21). We had 21 students, and they rotated between the sites to give them experience with different types of sites, different artifacts, and different strategies and problems of excavation. The second summer, with 23 students, we tackled another large, buried dependency on the opposite side of the house (Linda Derry, a William and Mary graduate student), the same slave quarters (Leavitte), and miscellaneous prehistoric and historical sites on Shirley Plantation and Epps Island (me) (Figure 22). Except for the two large dependencies, which were previously unknown, and which allowed a more complete interpretation of the plantation after their discovery and excavation, all the other sites were threatened sites that had been damaged by agriculture practices, mining for gravel, and erosion (Reinhart 1982). Nine William and Mary students used material from these sites for their senior theses, and several continued in the profession after attending various graduate schools, including Judith Ann Habicht, Barbara J. Heath, Michael W. Morris, Christopher R. Polglase, Mary Anne "Marcy" Renner, and James Cooper Wamsley. In addition, Genevieve Leavitt (1981) wrote her William and Mary master's thesis on the slave site.

Figure 22. Judith Habicht and Barbara Heath Exploring the Shirley Mansion's Builders' Trench.

Five students and I put together a group of papers from the Shirley excavations to present a symposium at the 1982 annual meeting of the Society

for Historical Archaeology, and Judith Habicht and I collaborated on an article in the Virginia Historical Society's journal on the relationship of the main house and the newly discovered dependencies (Reinhart and Habicht 1984). I was pleased that we were able to present our ideas and evidence to the history community in one of their most prestigious publications. A few years later that journal even asked me to review James Deetz's book on Flowerdew.

In 1984, the University Press of Virginia in Charlottesville published *Archaeology of Shirley Plantation*, which covered most aspects of our two year's work there (Reinhart 1984). So much of the volume was the work of students that I decided to give them full credit and to give myself the title of editor. The book is full of the data we collected, including many tables and photographs of artifacts. I wanted to include these data and photographs to give comparative material for scholars working on other 18th-century historical sites. For doing this I was criticized by the historian Alan Simpson (1986) because I did not tell a story the way Noël Hume would have told it and because he had to go through pages of "mind-numbing data." What Simpson did not understand is that I consider myself a scientist, not a historian, and I believe that supporting data should be published. I did this in my dissertation, and I did it in all the publications I have written. I do not know if Noël Hume's stories are as accurate as they are entertaining; he rarely published his data. He treated data like a historian treats historical sources: If you want to check the arguments, read the same historical sources the author did. However, archaeological data are different from historical sources: the archaeologist destroys the data as he reads it and it must be published to be shared with other scholars. I could not compare the Shirley data to any of his sites, because to be interesting he left out the "mind-numbing" part. At the least, Simpson should have realized that Noël Hume and I were writing for different audiences.

I took a two-year hiatus from the summer field school after our second year at Shirley, and Barka took them to St. Eustatius in the Caribbean and later to Bermuda. In 1983 through 1986, I held field programs in conjunction with the William and Mary first summer session. Students lived in the dorm, brought lunches, and worked from 8 to 4, five days a week for five weeks. This greatly reduced administrative work for me, and I could also reduce the size of the staff. Because James City County was undergoing rapid population growth and development, endangered local sites would be easy to find for our fieldwork, and the Department of Historical Resources recommended that we work at Governor's Land in James City County. That large tract of land, where the Chickahominy and James Rivers meet, was slated for development, and it was only about a 30-minute drive from the College. An archaeological survey of the area in the spring before the field school by one of our graduate students, John H. Sprinkle, Jr., indicated that there were many sites from which to choose. I decided to leave a large Contact village near the river and a deep, complex 17th-century site for the CRM

Figure 23. John Sprinkle and Students at Governor's Land, James City County, Virginia.

archaeologists and to concentrate on an early lithic site, a small dwelling site, and an 18th-century site on the ridge overlooking the floodplain where the rivers meet. I began the excavation of the small dwelling site using volunteers from my spring classes, and this began near year-around excavations that continued for almost three years on these sites (Figure 23). Throughout the fall and spring, every Sunday, I and five or six students went out while the College was in session and the weather permitted it. I chose Sundays because, at that time, that day the local hunt club was not allowed to hunt. The work intensified during the summer field school and included some of the same students who helped during fall or spring. Sprinkle, who received his Ph.D. in history from William and Mary, was my teaching assistant all four years. This work provided data for 18 student papers and three master's theses (Davis 1986; Sprinkle 1984; White 1991), as well as a journal article (Reinhart 1993a) and several papers presented at meetings by me.

In the late eighties, I did a few CRM projects that were offered to me by the Virginia Department of Highways. I always believed that it was my responsibility to teach anthropology and archaeology to students in my classes. I wanted also to involve as many of my students as possible in my research. The long-term excavation approach, as described above, works best for this goal. As a senior thesis was required of each of our majors, many archaeology students found it more meaningful to work with problems and data from the sites they helped excavate. However, unless they took place when classes were out, CRM projects offered little opportunity for either academic faculty or student involvement. Generally, the contracting entity wants the work done as soon as possible, but the academic has too many conflicting duties, teaching and administrative, to be able to comply, and the students have classes they cannot miss.

Once in a while, however, things work out, and two CRM projects that came at a convenient time for me and my students are worth mentioning. The first was required archaeological survey and testing along the bank of Chuckatuck Creek in Suffolk where VDOT was planning to repair a bridge. Their work would impact an area beyond the present bridge, where there was a small Early Woodland site with shell-tempered ceramics. Floyd Painter had already described the complex, and this site gave us an opportunity to possibly get a radiocarbon date for it. Unfortunately, I did not ask for money for radiocarbon dates in my proposal, so I had to go back to VDOT for it. DHR backed my request, and some good dates were obtained (Reinhart 1988). The second involved Route 58 in Southampton County. This two-lane highway from Emporia to Norfolk was known as "Suicide Strip," and one of Governor Gerald Baliles campaign promises was to expand it to four lanes. He actually flew over us in a helicopter when we were working on one of the sites. The project had been started with the testing, after the end of classes, of a prehistoric site along Angelico Creek (Reinhart 1990) and a farmstead on the ridge above the creek (Phase II). A Phase III excavation was scheduled for the farmstead at the end of field school, which I had moved that year to Gloucester Point to help mitigate the impact of expansion of William and Mary's School of Marine Science. This would be my last field school, and I, with John Sprinkle, used students in it to staff the excavation project afterward.

Figure 24. The House Foundation at the Pope Site, Southampton County, Virginia.

At the farmstead (Pope Site), we excavated a modest dwelling, whose foundation was of brick and cob wall construction (Figure 24). The brick had been robbed and almost nothing of the house construction remained, only its imprint on the ground and the foundation of a chimney along its north side. Brick dust indicated that the cellar, or at least parts of it, may have been paved. A few pieces of plaster were found in the

Figure 25. John Sprinkle Defining Features with the Gradall at the Pope Site.

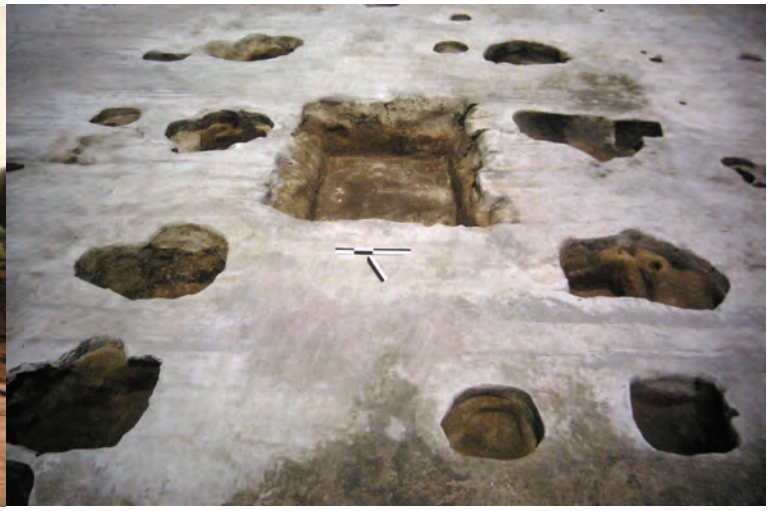

Figure 26. Earthfast House after Excavation at the Pope Site.

fill, but little else. Nails were notably absent. A giant VDOT backhoe, feeding a large dump truck, cleared the remaining part of the highway right of way, and two post dwellings, a smokehouse, and numerous fence lines were uncovered (Figures 25, 26, and 27). The two post dwellings were some distance from the house and outside its fence. The smokehouse was a small square building with its foundation sunk in the ground; it had cob walls and a center burned area.

This was a new experience for both John Sprinkle and I. The entire farmstead, with the possible exception of a well, which may have been outside the highway right of way, was laid out and visible at one time. To add to the experience, we knew who lived there and we knew he owned slaves—Southampton County is not a burned county. Unlike James City and Charles City counties, Southampton County still has its Colonial records, and I hired a history graduate student to search these records for site information. There was enough material culture remaining at the site to date it to the late 18th century when this was the frontier of Colonial settlement, on which our interpretation was focused in the final report. I talked to the appropriate administrator at the College into publishing the report that I sent to VDOT and sent the publication gratis to many individuals and institutions (Reinhart 1987).

Figure 27. Esther C. White Recording Postholes at the Pope Site.

I saw the lack of information about what CRM archaeologists were doing and finding in sites I did not know existed as a real problem. I wrote a proposal to the National Endowment for the Humanities for a modest sum to solve this problem in Virginia. It involved abstracting this information and making it available to those who could benefit from knowing it, such as college professors who teach archaeology. It was shot down, but I approached COVA and ASV about the idea. I proposed a series of symposia on the chronological periods of Virginia prehistory and history that used CRM and other data. COVA would sponsor the symposia, and the ASV could publish them. The ASV did not want to be stuck with the publishing bill, so I wrote another proposal, this

time to the Virginia Foundation for the Humanities and Public Policy. It liked the idea and in 1986 gave the ASV $10,000 to publish the first volume. Sales of that volume would then finance the next volume, and so forth. With the grant in hand, both COVA and the ASV approved the venture. The first symposium was on Paleoindians and was held in Washington Hall on the campus of William and Mary on November 19, 1988. William M. Gardner of the Catholic University of America was our lead speaker; I made the Symposium 'Welcoming Remarks' and contributed "Paleoindians in Virginia: A North American Perspective." There were eight other contributors. The volume, *Paleoindian Research in Virginia: A Synthesis*, was published in 1989, and a second edition appeared in 1994. The following is a list of subsequent volumes, lead speakers, and the date of publication:

II. *Early and Middle Archaic Research in Virginia: A Synthesis*, Jay F. Custer, 1990
III. *Late Archaic and Early Woodland Research in Virginia: A Synthesis*, L. Daniel Mouer, 1991
IV. *Middle and Late Woodland Research in Virginia: A Synthesis*, R. Michael Stewart, 1992
V. *The Archaeology of 17th-Century Virginia*, Mary Ellen N. Hodges (with a Preface by John L. Cotter), 1993
VI. *The Archaeology of 18th-Century Virginia*, Norman F. Barka, 1996
VII. *The Archaeology of 19th-Century Virginia*, Pamela J. Cressey, 1999

The participants in the symposia were primarily COVA members, but a few non-members were asked to contribute papers. The editors of the volumes included J. Mark Wittkofski, Mary Ellen N. Hodges, Dennis J. Pogue, John H. Sprinkle, Jr., and me. The Virginia Foundation for the Humanities and Public Policy later gave the ASV a second $10,000 to help with publication costs, and the ASV was allowed to keep any profit. I am not sure there was any profit. In any case, it was a noble endeavor, and it brought together members of both the ASV and COVA in a joint project, of which they can be justly proud. On October 8, 1999, the ASV awarded me Honorary Life Membership, so maybe it did make a profit.

Figure 28. Hewick House in Urbanna, Virginia.

Having given up field schools, in the late eighties I searched for a project to interest and allow my students to participate in field archaeology. In 1988, I was invited by the new owners of an 18th-century house in Urbanna to look at their property (Figure 28). They asked me to do an archaeological survey to be able to avoid impacting any important sites around the house. There was no money involved, but later they gave us $1,000 as our work progressed. I have already mentioned the problems an academic has doing CRM archaeology, but the advantage of being an academic is that I could pick and choose my projects, generally without regard to finances. The costliest part of any CRM dig, of course, is the labor, but I had talented and eager student volunteers at my beckoning. Time was my problem, but I stretched this work over several years.

The house on the western side of Urbanna is called Hewick, and the new owners claimed to be relatives of the original owner of the property. His name was Christopher Robinson, and he stepped off the boat from England in 1666. The first thing I had to explain to them was that the house that is there now, a large brick pile, was not built in the 17th century. It is a modified Georgian house, which our archaeological survey found to be the latest of several on the property. In the center of the agricultural field east of the house our survey found a 17th-century site, probably a post house, that might be the home of Christopher Robinson. I do not know, because we had no reason to excavate it, but we were able to warn the owners not to disturb it. The survey also revealed several sites in the agricultural field to the west of the house, including several small sites in a line along what was probably a road heading northeast of the house. There is a fenced cemetery northeast

of the house, and beyond the back agricultural field, there is an unmarked graveyard, with periwinkle-covered depressions in the ground, and the remains of an icehouse. This is the classic configuration of an 18th- and early 19th-century plantation with enslaved labor. The Robinsons continued to live at Hewick into the early 19th century, and the family was prominent in Colonial affairs. In addition, Christopher Robinson was involved in the governance of the College of William and Mary, and it was for that reason the new owners contacted me.

Figure 29. Excavation of the Older House Behind the Hewick House.

The archaeological survey, which included shovel testing around the house, also discovered a large dwelling foundation below the ground just behind the present house (Figure 29). It was this site that I decided to test by excavation, and for several years, on Sundays in the fall and spring, while classes were in session, I took students to Urbanna for this excavation. It was closed in both winter and summer. Since the site was an hour traveling time from Williamsburg, our time for excavation was limited. We discovered that the site was an earlier dwelling that had burned and was torn down prior to the construction of the present house. It had a deep cellar, so much of the site was untouched when we ended our excavations in the early nineties.

David A. Brown and Thane Harpole were regulars at this excavation (Figure 30), as was Ida C. Hall, an alumna of the College, who travelled from Kilmarnock each Sunday. At the time, I was assigned a graduate assistant each semester, and I asked each of them to accompany me to the site each week. Eight senior theses, one master's thesis, and four papers used material from this site. I gave one paper at an annual meeting of the SHA and published a paper in *The Chesopiean* (1993b) on the excavation. Middlesex County, where Urbanna

Figure 30. David Brown and Thane Harpole Excavating the Bulkhead Entrance of the Older House at Hewick Plantation.

is located, still has its Colonial records, so the master's thesis (Blake 1994), one senior thesis, and one paper were focused on the Robinsons and Hewick as revealed in the Colonial records. Papers written by David Brown (1996) and Thane Harpole (1994) analyzed the site's ceramics, and other students wrote on window leads, nails, clothing artifacts, buttons, and personal and tobacco artifacts. Most of the work was done for me, but I dropped the ball and never finished a final report.

Instead, I returned to the Southwest. In my final years at the College, the late nineties and the opening years of the 21st century, I concentrated on what might be called "above ground archaeology." After attending a summer seminar on ethnohistory and the American Indian at the University of Oklahoma in 1995, sponsored by the National Endowment for the Humanities, I changed the direction of my research. I would not put a trowel in the ground again until 2002, when on my last official dig, I worked at the Tanner site in Brunswick County with my longtime friends Wm Jack Hranicky and Harry A. Jaeger (Hranicky *et al*. 2009).

Heritage Archaeology

Remnants of the Old Archaeology, some aspects of the New Archaeology, and CRM Archaeology in full strength continued in the nineties, but another aspect of archaeology had appeared. I will call this Heritage Archaeology. Heritage Archaeology involves the recognition by archaeologists that the people and things they excavate are somebody's ancestors or belonged to somebody's ancestors. No longer could archaeologists ignore this relationship.

When I directed the excavation of that small ruin on the North Rim of the Grand Canyon aside the road to Cape Royal in 1969, there were many visitors each day. So many that we had to use tape to keep the visitors on a path around the excavation that did not interfere with our work. We found several burials, including one that was well preserved and near the path. As was the custom at the time, we kept the burial and its associated burial furniture exposed for the visitors, who were fascinated by it. I, of course, now apologize for this lack of sensitivity to his Hopi descendants and would never think of doing this today. We also left a burial open for view at the Arroyo Hondo site, and I now apologize to his Pueblo descendants. In both incidents, no one complained or told us we were being insensitive or wrong. Not even National Park Service rangers and park officials. At both sites we recovered what were probably religious and ceremonial objects and did not treat them as such. As far as I know, no Native American visited our sites or even was invited to visit the sites. The one exception to this was that Alfonso Ortiz, the well-known, but now deceased, cultural anthropologist from San Juan Pueblo, visited the Arroyo Hondo site. I do not remember if he saw the exposed burial, but I do not think it was on display when he visited. Interestingly, he did not seem to have any fault with our excavations and even showed us a Pueblo religious shrine on a nearby hill.

I am sure that I showed the same insensitivity to the prehistoric remains I excavated later in Virginia and in other places. However, I have never dug a burial or excavated a grave outside the Southwest. In fact, I was horrified to see that historical graves at Tar Bay in Prince George County were violated. These were Christian graves of prominent Virginians; what hesitation would those vandals have if they encountered Native American burials? I remember encountering a human bone only once in an excavation outside the Southwest, and that was at the Tobias site in Kansas. It was a Native American leg bone, which was not in a burial but in the fill. I have no idea what it was doing there or what it meant. I have here confessed to my insensitivities; I am sorry, and in the future, if I ever dig a Native American, African American, Latinx, etc., site, I will seek advice and guidance from descendants. And you should too; that is what is now required by Heritage Archaeology and common decency.

Historical Archaeology in the Southwest

I returned to the Southwest in 1996. A sabbatical allowed me to stay in Tucson and later Ganado, Arizona, for a year to study records from the Hubbell Trading Post (Figures 31 and 32). The summers of 1996 through 1998 I spent at the trading post on the Navajo reservation in Ganado, and the academic year of 1996-1997 I spent in Tucson at the University of Arizona library. My goal was to do a material culture study using trader documents. Both the library and the trading post have large collections of Hubbell documents from 1889, when John Lorenzo Hubbell took over the post, to 1955, when the post was sold to the National Park Service and turned into a National Historic Site. Through these documents I wanted to trace the changes in Navajo culture. Rather than dig sites to trace material culture change, and receive only an incomplete picture, I would use the post records to see what was being sold to the Navajo by the trader. His records were

Figure 31. View of the Hubbell Trading Post in Ganado, Apache County, Arizona.

remarkably complete, and I could trace the changes in food, clothing, utensils, and other merchandise being requested by and sold at the post (Figure 33). The trader only bought what he could sell; he would return merchandise to his wholesalers if he knew he could not sell it. So, his orders would mirror the changing culture of his Navajo customers. This work resulted in two articles: one was published by the Navajo Studies Conference (Reinhart 2006), and the other by the Navajo tribe (Reinhart 1999). I was pleased that my research was published by the tribe itself, as I think that is a rare honor for an anthropologist.

In 2003, after 35 years in the Department of Anthropology at the College of William and Mary, I retired. Except for about 100 rare books that I gave to Swem Library, I gave my library to Longwood University's Greenwood Library. Libraries no longer want long runs of professional journals, so I gave them to Longwood's Department of Anthropology. I have rebuilt my library during my 20 years of retirement, but it is much more eclectic than my old. I have many more interests than I did as an academic. I still follow the archaeological literature, and when the ASV and COVA come to Williamsburg, I try to attend the meetings. But I read a more diverse literature, I travel to more distant places, and I talk to more non-archaeologists.

Conclusion

You have noticed that I use two different section titles in this essay. One is my journey through archaeology and the other is the changes that have taken place in archaeology. In my own journey, I have gone in a circle. I was professionally educated in the Southwest and started there as a prehistoric archaeologist (**Prehistoric Archaeology in the Southwest**). When I moved to Virginia, I continued to concentrate on prehistory (**Prehistoric Archaeology in Virginia**). As I learned more about historical archaeology (and historians) and became more confident and competent in it, I broadened my interest and research to include it (**Historical Archaeology in Virginia**). Finally, I took that interest back to the where I started (**Historical Archaeology in the Southwest**). It has been an interesting journey. It also raises interesting questions moving from one location to another. I became comfortable doing archaeology in the Southwest; I was confident and competent, but moving to Virginia required I learn about new cultures, a new chronology, and different artifacts. At first, COVA was very defensive about out-of-state firms doing CRM archaeology in Virginia. Some COVA members questioned the ability of these firms to move into Virginia, an area in which they had never done work before, and do an adequate job. Now that there are regional and national CRM firms, I

Figure 32. The Interior of the Hubbell Trading Post.

suspect this attitude may still exist. However, a regional firm may offer a broader view than local firms and be better able to see relationships beyond state boundaries. VDOT, I was told, preferred to award CRM contracts to state institutions, because they followed the same procedural rules and accounting practices. To take advantage of this, as it was difficult for faculty to do CRM work, the Department of Anthropology at the College set up the Center for Archaeological Research to handle CRM contracts. Rob Hunter was its first director, and Dennis B. Blanton and Joe B. Jones followed him.

I was fortunate to have several offers for academic positions after I received my professional degree. Because the Southwest universities train more archaeologists than they can use locally, most of them filled academic jobs elsewhere. At the time I was looking for employment, there were no job openings in the Southwest, so like many of my fellow graduate students I sought a job at the placement service of the American Anthropology Association. I discovered there were many places I did not want to go, but also there were many places I would have preferred to go that were not hiring when I was looking. I accepted the tenured-eligible position at the College of William and Mary with some disquietude, but as most of my colleagues there were Northerners like me, it was not as I might have imagined, considering that Alabama governor George Wallace was running for president in 1968. Thankfully, I found my Southern colleagues intelligent, interesting, and hospitable, and some of them, like R. Wayne Kernodle and Marvin Smither, were pure delights. In any case, I came to Virginia hoping my skills were transferable and thankful that I had a period to transition and not suddenly have to do it like CRM archaeology might require.

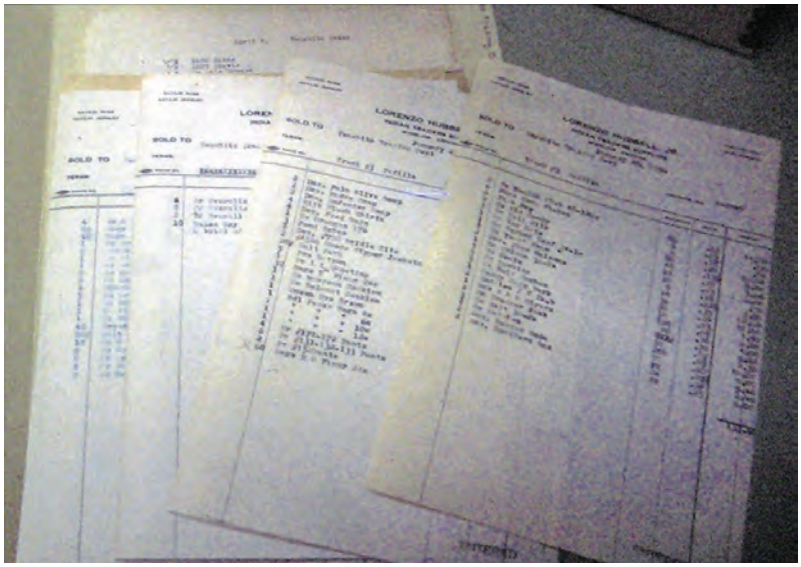

Figure 33. Hubbell Trading Post Merchandise Records.

I have always been impressed with the caliber of undergraduate student that the College

of William and Mary attracts. From my first classes, I could see that many of them could be my partners in research. It was easy to motivate them with the proper guidance into doing excellent work. With a little incentive, they would accompany me to remote archaeological sites and never complain when the weather was worse than expected or if the van got stuck. In addition, many of our best students were women, and I never restricted their participation in my archaeological projects, as did some of my mentors. A visitor to one of our Governor's Land sites once told me how lucky I was to be able to work with students, as his crew was often laborers off the street. He mentioned that after I showed him some of the old coins we had found at the site. He said he was suspicious because his crews never recover coins or anything of value.

I attended and gave papers at the national meetings of various professional anthropology and archaeology organizations, but I was never interested in becoming active in their administration. Many of my former students were active in these organizations and even served as presidents. I was proud of them and their accomplishments, but not envious. To attend multiple meetings each year would have been a financial burden, given the general lack of support provided by the College, but I also dislike doing administrative work. Teaching and research, particularly fieldwork, were my preference. In addition, I published my articles too often in the ASV's *Quarterly Bulletin*. More books and articles in national journals would have impressed my colleagues and the Dean. My work with the seven volumes on Virginia archaeology was dismissed in my department until a visiting archaeologist from the University of North Carolina remarked in a meeting with the department how useful he had found the volumes. I got a larger raise than normal the next year. Unfortunately, too many Virginia archaeologists tend to underrate and ignore the ASV and even COVA. I have actively participated in both and have found more friends and sympathetic colleagues there than at any national organization.

The other section titles I have used in this essay refer to the changes that have occurred in American archaeology while I was a participant. In discussing each change, I believe I have revealed my ideas about each of them. My early mentors subscribed to the **Old Archaeology**. There are many things they did that I would never do. I do not want to criticize them; they were scholars of their times. The **New Archaeology** had some useful ideas, but because archaeology deals with people, it is a social science and not a science like physics. We can improve our approach to the archaeological record, but often to flesh out our data we become storytellers, not scientists. **CRM Archaeology** has prevented the loss of much valuable culture information and has expanded the ranks of archaeologists, but my greatest concern is still the gray literature and the information that stays buried in it. I believe it is time for another round of COVA symposia to deal with it; possibly this should be a continuing process. As the members of COVA generate most of this literature, COVA should take responsibility every few years to hold a symposium covering the gray literature in each cultural period. This could be a contribution of COVA to the ASV annual meeting. Finally, that archaeology should show proper respect to the people it researches and their descendants, what I termed **Heritage Archaeology**, is long overdue. I understand the problem this causes archaeologists when claims of cultural affiliation are extended beyond provable bounds and prevents the archaeological study of ancient materials. Nevertheless, I am optimistic that this problem can be solved by compromise and goodwill, if archaeologists show good faith by regularly practicing proper respect and seeking the advice of descendants.

Although most of this essay was written "off the top of my head"—that is, I wrote it without reference to notes or a bibliography—I added a bibliography, and I went to some effort to check peoples' names. Concerning the names: I think I got most of them right, but I apologize if I misspelled any of them. And I am sorry that I was not able to mention all the people who I worked with or who crossed my professional path, especially the William and Mary students. Be thankful, if as you grow old, your mind stays relatively intact. There are many unfortunate, mostly older, individuals whose mind is impaired, although they may be relatively healthy in body. I hope you and I never experience the dreadful disease of Alzheimer's. I am grateful that I can still remember these wonderful people and events.

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- Work for the proper conservation and exploration of archeological sites and materials. Encourage the scientific study of archeological sites and materials and discourage careless, misdirected, or commercial collecting of artifacts.
- Promote the spread of archeological knowledge through the media of publications, meetings, lectures, exhibits, etc.
- Collaborate with other organizations and agencies that serve the same purposes as those of this society. Serve as a bond between the individual members and as a link with similar organizations in other states.

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